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Original Articles.

ON THE RELATION OF EPILEPSY TO INJURY OF THE HEAD.[1]

BY JAMES J. PUTNAM, M.D.

At the recent Congress in Washington the important subject of traumatic epilepsy from fracture of the skull was brought up by Dr. Agnew,[2] of Philadelphia, in the course of his paper on "The Surgery of the Brain." After speaking of the unsatisfactory results of operative treatment after the neurosis has once established itself, he expressed the opinion that the improper surgical treatment of the case at the time of the occurrence of the fracture is responsible for much of the subsequent mischief, and, went on to say: "Whenever, therefore, in my judgment, the profession can accept the doctrine that all depressed fractures of the cranium, however slight may be the depression, and entirely irrespective of pressure symptoms, are proper subjects for trephining, then will traumatic epilepsy largely disappear from the list of surgical diseases; indeed, I am sure that he who shall propose to tabulate, at the end of the next twenty-five years, the cases of epilepsy, will find, as compared with the present time, a meagre supply for his purpose. It is not improbable, indeed, in view of the greatly diminished risk from trephining, that the operation will be extended even to cases of simple fracture or fissure of the skull."

It will be fortunate, indeed, if this optimistic view turns out to be well founded. Since, however, it is of the highest importance for us to know, in detail, on just what principles we ought to proceed, when called to a case of fracture, and how much immunity from epilepsy or insanity we can promise our patient in return for his submitting, though free from symptoms, to trephining and perhaps to opening the dura, it seems worth while to re-examine the evidence as to the frequency and the causes of the unwelcome result and the possibility of avoiding them.

The adoption of this view assumes that the cause of the epilepsy is the irritation at the seat of principal injury, and especially the irritation due to displaced fragments of bone,[3] and the failure of late operations for removal of the bone to effect a cure is considered as due to the epileptic habit having become established.

It is difficult to test the correctness of this explanation, but it is not an altogether satisfactory one. It is common enough to see cases where trephining, undertaken after a certain number of fits have occurred, do check their recurrence for several years, long enough, one would think, to break up the epileptic habit, if there were nothing else besides the irritation starting from the depressed bone to maintain it. But not only do the fits almost always recur in the end after trephining, but they usually recur when, besides the bone, portions of the cortex, which the symptoms indicated to be the centres of origin of the attacks, have been removed likewise, as Dr. Agnew himself points out.

Moreover, the recent excisions of motor areas which were apparently responsible for outbreaks of ordinary epilepsy of the localized type, also seem to be far less effective than was hoped. The attacks are usually arrested, sometimes for one or two years, or even longer, and in exceptional cases they may never return; but this is hardly more than seems occasionally, (though less often) to happen after other operations where neither cortex nor diseased bone are removed, so that, important as both trephining and cortical excision may be as a means of treatment, where we wish to gain a temporary respite, or to take every chance of cure, they must for the present count rather as excellent inhibitory measures, than as proving the nature or origin of the disease.

If Dr. Agnew's opinion, which represents that of many surgeons, cannot be sustained by evidence, and the patient's prospects are not improved by treatment of the local injury to anything like the degree indicated, it is eminently important that we should not let ourselves be turned aside by it from the search for other influences that may turn out to be equally important in the causation of epilepsy. If, on the other hand, that opinion can be sustained, and if trephining carries with it so little risk of inducing either immediate or subsequent mischief, then, I think, it should be seriously considered whether we ought not to trephine, also, in cases of healed fracture that come to us not too long after injury, but before epileptic symptoms have appeared.

There is, of course, no question as to the propriety of trephining, in many cases of fracture even without symptoms, on general surgical grounds. The indications for doing this have been clearly laid down by various writers, and among others by Wagner, in an excellent address published in 1886 as Nos. 271, 272, of Volkmann's *Klinische Vorträge.* The treatment there advised is based almost wholly on the importance of preventing or curing local infection, though with the secondary aim of getting rid of irritating fragments of bone. Simple depression is considered as dangerous, not as a cause of intracranial pressure, but only in that it is liable to interfere with the union of the broken bones and lead to suppuration by disturbing the circulation in the diploë, and he recommends that when the fracture is not compound a moderate depression should be left untreated. Linear fracture without symptoms, even when compound, is considered as calling for treatment only when hairs or other foreign substances are caught in the crack, and then he uses the chisel so far as is necessary for removing them.

Wagner recognizes at the same time that trephining is a relatively trifling operation.[4] He urges it for localized meningitis, or to secure a more aseptic condition of the broken bone and underlying parts, as in perforating wounds, and even, in case of doubt, for exploring the condition of the tissues beneath the bone, especially when suppuration of the dura is suspected.

Although Wagner considers it important to remove broken fragments of the inner table when feasible, he calls attention to the fact that they generally heal smoothly if left alone, and this opinion gains some support from the fact that the osseous plates which so often form in the dura usually do no harm, though they are considered by some pathologists[5] as of inflammatory origin.

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[1] Read before the Boston Society for Medical Improvement, November 9, 1891.

[2] Published in the University Medical Magazine, Philadelphia, October, 1891.

[3] Dr. Agnew (loc. cit.) speaks particularly of the irritation of the sensory nerves of the dura by depressed or broken bone, "an irritation propagated to the meninges, and, later on, to the cortex and brain-ganglia."

[4] Dr. Manley, of Brooklyn, demurs to the view that trephining after injury is so safe, and quotes cases to show the danger of hernia cerebri.

[5] See Ziegler's Handbook of Pathological Anatomy.

Do we know with any approach to accuracy how much immunity from epilepsy is secured by early trephining,[6] or in what class of cases immunity is secured at all?

The absolute evidence of the character necessary for answering these questions is small in amount. No systematic attempt has been made by any writer to compare, as regards the subsequent occurrence of epilepsy, any large series of cases in which the skin, bone and underlying parts were treated early by the best modern methods of surgery, with a similar number which were not so treated; and, on the other hand, there are plenty of individual cases on record where, under such treatment as was adopted, the parts healed satisfactorily and showed later no sign of disease, and yet epilepsy supervened.

Among the cases of fracture, especially of gun-shot fracture, occurring in our late war,[7] this happened repeatedly, though of course the methods then followed were not as thorough as those in use to-day.

An analyses of these cases made for me by Mr. F. Coggeshall, shows that five per cent. of the patients trephined at the time of injury subsequently had epilepsy, and that thirty-two per cent. of all the patients who became epileptic later had been trephined at the time of injury.

It is not enough to point out that cases of epilepsy following properly treated fracture do not present themselves in our dispensaries and consulting-rooms, for the whole number of cases that would be admitted by the best surgeons as having been properly treated is extremely small, and the proportion of cases in which epilepsy occurs after fracture, treated or not treated, is also a small one, though the danger is apt to loom up prominently when we are first called to such a case.

Does the simple persistence of a depression in the bone, for example, without detached fragments or signs of inflammatory processes, at the end of a number of years, prove that the case was not properly treated at the outset? From the point of view of surgical treatment we should perhaps have to answer yes, but, in fact, it is doubtful whether the chances of epilepsy are really much increased by such a condition, except where the displacement prevents the bone from healing properly, as sometimes happens.[8]

Not only is it common enough to see depressions in the skull without epilepsy, but it is difficult to see why epilepsy should result unless the depression is the cause or accompaniment of osteitis or meningitis, or changes in the nutrition of the brain, and that these results usually occur is not shown by the records of subsequent operations or post-mortems, or by the inspection of the specimens in our museums. Microscopic investigations might tell a different story, but at any rate there is no reason to think that the simple increase in intracranial pressure from a moderate depression causes symptoms of cerebral compression, except sometimes at the outset. If depression in itself is a cause of epilepsy it must be because, as Dr. Agnew suggests, it sets up an irritation of the dural nerves, and, in some way not known to us, possibly by way of neuritis, an impairment of the cerebral nutrition.

It must, I think, be admitted, with regret, that the view which looks for so much security in the treatment of the fractured and depressed bone is not based upon a sufficient recognition of the obscurity which still surrounds the origin of epilepsy, and of the variety of the possible causes liable to be set in action by severe injuries to the head, some of which are amenable to early treatment, while others are not.

The study of epilepsy as it occurred among the German troops in the late Franco-German war is full of interest in this connection.[9]

It is, in the first place, worthy of note, that by far the greater number of cases occurring in the German army and due to army life were of other than traumatic origin,[10] because it reinforces the view that epilepsy is usually a general cerebral neurosis.

That it may arise from purely local cerebral disease seems unquestionable, especially when we consider that it may be excited in animals by localized faradization of the cortex. But in many of the traumatic cases, and especially where the outbreaks do not occur until years after the injury, influences are present affecting the nutrition of large areas of the brain, and these certainly constitute possible causes of the disease.

Of the sixty-three traumatic cases (omitting a large number of epileptiform vertigos, etc., and a few unclassified cases) forty-six followed injuries of the head, seventeen, injuries of the body and limbs.

Again, epilepsy occurred out of

8,985	injuries of the head . , . . .	28 times	= 0.31 %
11,091	" " neck and trunk .	5 "	= 0.04 %
30,700	" " arms	5 "	= 0.016%
35,670	" " legs	7 "	= 0.02 %

The greater number of the epilepsies from head injury appeared to be from sensitive scars of the scalp, combined with the effects — difficult to estimate — of cerebral contusion and concussion; but that these latter were of themselves sufficient causes (and causes which are present in almost all cases of fracture) was shown by the history of seven cases where the head sustained no local injury, but only suffered from general concussion.

The sensitiveness of the scars of the scalp seems to have been due to the bruising of the skin against the hard underlying surface by bullets or fragments of shell; and the scars following sabre-cuts were generally non-sensitive. The avoidance and removal of such scars would, of course, be eminently in place, and the same may be said of irritations of the dura.

It may be easily conceived that, besides fractures with displacement, cases of *healed* fracture would occasionally present themselves where — as a protection against epilepsy — trephining for the removal of suspected irritation of the dura would be justifiable.

Local injuries of the brain are recognized in these reports, as well as by all surgeons, as a possible cause of epilepsy, and these local lesions are liable to be beyond the reach of such surgical treatment as will remove the danger of epilepsy.

Dr. Keen[11] has, to be sure, suggested the importance of the systematic removal of disorganized brain tissue, and this may mark a decided advance over Wagner's method,[12] which consisted in removing only such parts of the brain as protruded beyond the dura, but it is too early to tell how thoroughly this plan can be carried out or with what results.

It is quite possible that we attribute too much importance to the irritation at the seat of fracture as the cause of the subsequent epilepsy, instead of considering it as only one, though usually the chief of several contributive causes. At any rate the following facts should be borne in mind before we commit ourselves to a definite conclusion.

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[6] This term is to be taken, of course, as covering all the measures used in exploring the injury of the bone and underlying parts.

[7] Surgical History of the War of Rebellion.

[8] Compare Wagner (loc. cit.).

[9] Vol. vii, Erkrankungen des Nervensystems, Berlin, 1886.

[10] Fatigue, acute disease, excitement, over-exertion, fright, cold, general conditions.

[11] American Journal Medical Sciences, September, 1891.

[12] Compare Wagner, Volkmann's Klinsche Vorträge, Nos. 271, 272.

(1) Traumatic epilepsy is by no means always of the localized, so-called "Jacksonian" type. In many cases the loss of consciousness is as early and as sudden, and the first convulsive symptoms as widespread, as in ordinary epilepsy, and although the irritation of the dura at the seat of fracture might account for such attacks, we have no right to consider that it is the only or even the principal cause, so long as other possible causes are present, and this, in severe head injuries, is usually the case. As a rule, whether the skull be fractured or not, the brain is injured in a number of different parts, and the lesions of the brain near the seat of injury to the bone are liable to be much more extensive than the osseous fracture, and more or less independent of it.[13]

Either one of these various lesions, as well as the general injury which the brain sustains from concussion, are adequate causes of epilepsy, and it is not improbable that they may work together as contributive causes. Of course, even if this be true, we are not relieved from the duty of treating the original wound so as to secure a healthy and rapid repair of all the injured tissues, including the brain, so far as this is possible, but even after doing this we should be guarded in our prognosis. I shall refer again below to the important subject of the contributive action of several partial causes in inducing epilepsy even of the Jacksonian type.

(2) In many cases there is a considerable interval, often years in length, after the injury and before the epilepsy appears. Are we to assume that, during this period of latency, the hidden danger is silently drawing nearer, or is it more probable that while the irritation remains the same some new cause comes in to precipitate the outbreak? If the former is probably true, have we a right to assume that the series of nerve and brain changes resulting in the epilepsy are alone those which have the injury at the seat of fracture as a focus? Is it improbable that the inflammations and irritations starting from other foci of injury to the bone, membranes or brain, play their part in inducing the result? The answer to this question must depend upon the evidence with regard to the contributive influence of partial causes.

The immediate causes of epilepsy in these traumatic cases are so obscure and baffling that we ought to keep ourselves in a very catholic spirit during our search for them.

The only way to answer the question as to what are the significant alterations that occur before the attacks appear would be to tabulate all the morbid changes which do take place during this interval and that could possibly be causes of epilepsy, and then try to discriminate between their effects.

The physiological characteristic of the epileptic brain is generally believed to be that a greater or less portion of its ganglionic matter has acquired the habit of discharge under less than the normal stimulus; and from what we know of the physiology of the nervous system it is fair to assume as probable that this liability to premature discharge might be brought about in three general ways: (*a*) by modifications of the nutrition of some particular centre or area of the brain; (*b*) by impairment of the inhibitory relations between different parts of the brain;[14] (*c*) by an unnatural increase in the number or force of the stimuli tending to provoke the discharge of a given part of the brain. It is in this latter way that we may suppose "reflex" epilepsy to be caused, and we might class as "reflex" — at least for purposes of investigation — those epileptic attacks which are produced by the action of one part of the brain upon another.

In seeking the cause of epilepsy from injuries of the head, such as fracture with depression, we are too prone to look only at the lesion indicated under *a*, and fail to recognize sufficiently the more distant and obscurer lesions falling under *b* and *c*.

I think there is reason to suspect that even when the "signal symptom" of an epileptic attack, in a case of head injury or cerebral disease is sharply localized, the responsibility for the outbreak should not always be laid exclusively at the door of the centre especially correlated with this "signal symptom," but that it often implies an abnormal condition of other parts of the brain, or of the brain at large. Certainly a number of cases have been reported[15] of epilepsy of the Jacksonian type where careful examination has failed to reveal any lesion of the corresponding centres in the cortex.

We do not yet know the anatomical correlates of the epileptic state with enough exactness to make it worth while to describe them, but we may hope to arrive at them eventually by a conscientious study, macroscopic and microscopic, of the changes occurring in epileptic brains, especially during the pre-epileptic stage.

We do know already that during the latent stage of traumatic epilepsy the morbid changes developed by the injury (which may have several centres) are liable to spread laterally (Ziegler) as well as to become locally more intense; and we know further that localized epilepsy is liable to occur in brains which have been for a long time the seat of extensive and progressive morbid processes, as in the case of the post-hemiplegic epilepsy of children, and the epilepsy in paretic dementia. Again, we know that influences acting on sensory centres in the brain, such as fright, or fatigue, or toxic substances in the blood, may precipitate an attack, or even cause the disease. Löwenfeld[16] calls especial attention to the fact that epilepsy having its starting point in the irritation produced by a tumor or other gross lesion, may remain latent until some other general cause comes in to increase the effectiveness of the local cause.

It is reasonable provisionally to suspect, therefore, that in the traumatic cases, multiple and spreading lesions which often exist, may contribute to increase the injurious effect of a predominant local injury.

It is undoubtedly true that purely local irritations of the cortex may excite epileptic attacks, just as these may be excited by localized electrical stimulation; but there is a body of facts, to which I think too little attention has been paid, which indicate that both in so-called idiopathic epilepsy and in some forms of traumatic epilepsy, the special and "localized" auras and convulsions are sometimes only the expression of a morbid condition involving a large cerebral area, or a whole hemisphere, or the whole brain, just as the feeling of anger may cause habitually, in one person a clenching of the fists, in another a frown or a paleness of the face, in another a sense of intellectual inhibition.

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[13] Widespread hæmorrhages and softening often ending in adhesive meningitis, are extremely common. See Byrant, Hunterian Lecture, Lancet, June, 1888; also Duret, Traumatismes Cérébraux; and an interesting case reported by Walter Channing in this Journal, July 8, 1886.

[14] See Hare's recent monograph on epilepsy.

[15] Charcot and Pitres: Rev. Mensuelle, 1878, xi. See also Löwenfeld: Arch. für Psych., etc., vol. xxi; and Kramer: Jahrbuch für Psych., 1891, 1.

[16] Loc cit.

The character of the first, and, through the establishment of habit, of the subsequent outbreaks, would then be referable to a greater physiological excitability of one or another part of the brain, either native as in the case of the hand and face centres, which, as Hughlings-Jackson long ago pointed out, are so prone to be the first to discharge in ordinary epilepsy, or due to local disease or irritation of the brain or of the peripheral nerves as in traumatic and reflex epilepsy.

This principle has been abundantly established by both physiological experiment and clinical observations,[17] but its practical significance as necessitating a modification in the application of the doctrine of the localization of functions in the brain,[18] has not been sufficiently dwelt upon. The character of the most important pieces of evidence may be briefly indicated as follows:

(1) The experiments of Ferrier,[19] of Bubnoff,[20] and Heidenhain, and other physiologists have shown that the movements of certain parts, such as the face, may often be excited by minimal stimulations of the cortex which are ineffective as regards other movements.

(2) It is asserted by Bubnoff that if an animal, in the course of an experiment, makes an accidental movement of a limb, the same movement is especially likely to be called out by the subsequent electrical stimulations of the cortex; or that if one limb is stroked or moved, movement is more likely to occur there than in other parts under a stimulation of given strength applied successively to all parts of the motor area.

(3) It is a remarkable fact, noted by Dr. Hughlings-Jackson, that the primary or "signal" (sensory or motor) symptoms of an epileptic attack in man occurs far oftener in the hand or face than in other parts, evidently because of the great physiological mobility and sensitiveness of these parts, so much so that I think such symptoms are of less value as indicating a localized irritation of the brain than the similar symptoms when affecting other less mobile parts, such as the leg or shoulder; that is, the hand or face may be thrown into convulsion alone, or primarily alone, by an inflammatory process covering a large area. This principle applies both to traumatic and inflammatory, and to so-called idiopathic cases. I say so-called, because I believe that, pathologically considered, the traumatic and non-traumatic cases are often closely analogous.

Thus, to take one case out of many that could be cited, Dr. J. C. Warren operated recently, at my request, on a patient who, in consequence of a meningeal hæmorrhage or meningitis which had occurred during a typhoid fever eight or ten years before, had had a transient hemiplegia followed by epilepsy. He had distinct auras, both sensory and motor, in the left hand, frequently without loss of consciousness, but at the operation the lesion was found to cover a good part, if not the whole, of the arm and face area. We snipped out a bit of the cortex, simply guessing at the hand centre, since no electrical responses could be obtained, and for the next week the hand was paralyzed, obviously because its cortical arrangements were especially sensitive to damage, as they had previously been to irritation.

CONCLUSIONS.

(1) The causes of epilepsy are numerous; and we cannot hope in most cases to remove them all by early trephining and care of the wound, though these measures, and especially the removal of fragments, are probably very important.

(2) The local and the general injury of the brain are probably of prime importance, as causes of epilepsy, and are to some extent independent of fracture. The former may perhaps sometimes be treated as suggested by Keen, but the latter can only be reached by general treatment.

(3) The treatment of the general conditions of the brain, by cold and by prolonged, absolute mental rest is probably of great importance, and might perhaps be reinforced by other measures directed to the same end.

(4) The occurrence of localized convulsions or auras does not necessarily indicate limited local disease, to be removed by operation; since, on the theory that the disease is a general one, it would have to find some local expression. It is especially true that convulsions or sensory auras beginning in the hand or face are untrustworthy indications of the extent of the cerebral lesion, because the cortex corresponding to these parts has a high degree of irritability.

(5) Considering the long period that usually elapses after an injury to the head, before epilepsy declares itself, a period during which the patient may be perfectly well, it is reasonable to seek for some better term than "local irritation" to express the connection between the two events. We may fairly suspect that in most such cases a degenerative process goes on, which increases in extension and perhaps in intensity. Sometimes a neuritis, starting from the seat of injury seems the important link ["History of Franco-German War;" Nothnagel].

We know that such a progressive degenerative process as this is capable of giving rise to epilepsy of the localized type, independently of any gross local irritation, as in the case of epilepsy complicating general paresis, of ordinary epilepsy of certain types, and perhaps of epilepsy in cases of head injury without fracture, and of diffuse cerebral sclerosis. We know, further, that the removal of gross irritations in case of an already existing epilepsy of traumatic origin usually gives only a temporary relief. It is, therefore, reasonable to suspect that the state of impaired storage power on the part of the ganglion cells, which we call the epileptic state, is liable to be more widespread than the signal symptoms of the fit would suggest; that we have as often an instance of impaired inhibition or mutual support between different cerebral centres as of locally impaired storage power; that the fit is local in its first expression because the centre corresponding to the initial symptom was an especially irritable centre (for physiological or pathological reasons), and that the impulse to its discharge may originate elsewhere, or be inoperative unless reinforced by other influences.

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[17] Hughlings-Jackson and others.

[18] I have called attention to some of its relations in a paper published in the Transactions of the New York State Medical Association in 1890.

[19] Localization of Functions in the Brain. [20] Pflüger's Arch. 1882.

How near the epileptic condition may be to apparent health, that is, the latency of the epileptic state, is shown by the fact that epilepsy interchanges with other neuroses, and that the attacks may be brought on by slight causes. This, of course, is a reason for trying first to inhibit attacks for a time so as to check the habit, and, next, to keep away all possible exciting causes. This may constitute a sufficient reason for trephining even when we cannot believe that we can remove the cause of the disease.

(6) May not operation by trephining, for the sake of exploring the parts, be called for in case of patients presenting themselves for the first time after the fracture has healed, but before the outbreak of epilepsy — say within six months or a year? In some respects the tissues are perhaps in better condition for exploration, with the prospect of finding a delimited and removable lesion, a short time after the injury, though it is also true that degenerative processes may already have been initiated. This is a matter for further study.

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TWO CASES OF TREPHINING FOR TRAUMATIC EPILEPSY.[1]

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At the first Congress of American Physicians and Surgeons the subject of brain surgery excited much interest; at the second Congress the interest was as great, but three years' additional experience rendered the views of those who took part in the discussion distinctly less hopeful. This was especially the case with the question of trephining for epilepsy. The hope of cure from trephining in traumatic epilepsy, or from excision of the cortex in Jacksonian epilepsy, is now regarded as slight, although relief is not infrequently obtained. Some men, indeed, in the discussions took, without warrant, a thoroughly pessimistic position; the majority were not disposed to hope greatly from surgical interference. It therefore seems not unjustifiable to report the following cases, partly because failures should be reported as well as successes, and partly because they illustrate one or two points of interest.

Kate F., sixteen, single, a nursery-maid, presented herself at the out-patient department of the Boston City Hospital, February 17, 1890. She was born in Ireland. Her mother had been insane for eight years, her older sister was rather nervous; otherwise no hereditary taint could be discovered. The girl herself had always been in good health. The catamenia had been established two years before, and since then had been regular and without disturbance. Five years before coming to the hospital she was struck in the forehead with a stone, and was rendered unconscious by the blow. She was carried to a hospital in Dublin and lay unconscious for three days. She then recovered her senses, but she remained in the hospital for three months. After the injury she had strabismus for a time, but that passed away. Ever since the injury she has been subject to headaches; the pain being referred to both sides of the forehead and to the top of the head, but, as a rule, it starts from the seat of the injury. She has a headache nearly every day, and it lasts several hours. She has also had a slight cough for some time.

In November, 1889, she had a convulsion. There was no aura; the head and eyes turned to the right, and the limbs worked. She frothed at the mouth, could not speak, began to stutter, something came up in the throat and then the head turned and she fell. She said that in some attacks she was conscious of what was going on, but she could not control the attack; in other attacks she lost consciousness. After the first attack she vomited. After the attacks she was sleepy and foolish. A month later, in December, she had a second attack. Since then she has had six more, about one attack a week, the attacks coming on in the morning.

Physical examination showed a stout, sturdy, rosy-cheeked girl with a small stellate cicatrix on the forehead, a little to the left of the median line, about an inch from the beginning of the hair, beneath which was an area of rough, irregular bone with some depression. Careful examination revealed nothing else remarkable. She was given fifteen grains of potassic bromide three times a day, and ordered a restricted diet. This was continued until March 5th, when it was omitted for two days, without orders. No indiscretion in diet was committed. March 9th she had a fit, and March 11th another. On the 11th she had a bad headache and cramps in the stomach. The bromide was ordered to be taken four times a day.

March 13th, she had another fit, and on the 19th another, in which the head and eyes turned to the right. She again, on the 19th, had headache and cramps. She was ordered to take thirty grains of bromide, three times a day.

March 26th, she reported an incomplete attack. The attacks have been preceded by marked vertigo.

April 9th. Three fits since last report.

The bromide having apparently failed to control the fits, I thought it advisable to lose no more time, and I advised her to enter the hospital for operation, which she consented to do, and on the 11th of April she was admitted to Dr. Post's service.

April 13th. Last night and this morning she had convulsions in which the head, eyes and mouth were drawn to the right. She was conscious, but she could not control the attack.

April 21st. She has been kept quiet in bed, and, aside from a slight tonsillitis, she has been comfortable and there has been nothing to attract attention. This morning she had a convulsion, followed by another at noon. These convulsions were general, the legs and arms becoming rigid, the muscles of the face and jaw twitching violently. They lasted four or five minutes. The last catamenia ceased a week ago; the convulsions have never been more marked at the menstrual period.

She had now had twenty convulsions, and bromide seemed powerless to control them. In many of them the signal symptom seemed to be turning of the head and eyes to the right. The centre for this movement is the motor centre nearest the seat of the injury. I thought it possible that a discharge, starting from the old wound, might extend first to this centre and then give rise to a general convulsion. The thing to be done was clearly to trephine over the seat of injury.

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[1] Read before the Boston Society for Medical Improvement, November 9, 1891.

and to remove, if possible, all cicatricial tissue. She was therefore trephined by Dr. Post on the 24th of April, a button of bone was removed, the dura and a portion of adherent brain-substance excised, and as much of the cicatricial tissue as possible was removed. Some thickened connective tissue was left in close proximity to the longitudinal sinus which could not be removed without cutting the sinus; elsewhere all tissue was removed down to healthy brain substance. The details of the operation will be given by Dr. Post.

The patient recovered well from the ether, but she had a little pain at the seat of the operation.

April 25th. Considerable headache this evening. The pupils are equal; the tongue is protruded straight. She was perfectly conscious. Five grains of antipyrine were given at night to relieve the pain.

April 26th. She felt better and had less headache. Her color was good, and she was bright and cheerful.

April 27th. Some headache, relieved by antipyrine.

April 29th. She felt very well, and was found sitting up in bed reading.

April 30th. She was allowed to sit up with blankets about her, but, instead of sitting still, she walked about the ward and talked with the other patients.

May 2d. Wound dressed. Perfect union by first intention. No redness or swelling anywhere about the wound. The stitches were removed and a small moist corrosive sublimate pad applied.

May 7th. General condition excellent. She was actively employed about the ward. No symptoms. Her health appears perfect.

May 9th. This morning she had a convulsion, during which the head became fixed, the eyes were staring, and she frothed at the mouth. There was no twitching. In the afternoon she had another attack in which the face and all four extremities twitched. She was given fifteen grains of potassic bromide three times a day.

May 10th. Two convulsions to-day. The first was not seen until near the close; the second was general.

May 15th. One convulsion since last note. Bromide increased to thirty grains.

May 21st. Doing well. Up daily about the ward. General condition excellent. She was put on a milk diet, and she had had no convulsions since the last note.

May 28th. Slight bromide acne. It is almost impossible to restrict the diet. No convulsions.

June 4th. General condition good. One convulsion since last note. Bromide increased to forty grains.

June 11th. About ward. Two and one-half minims of Fowler's solution given for acne.

June 18th. No more convulsions.

June 21st. General condition good. Wound firmly united, only a faint white cicatrix remaining. No more convulsions. Discharged; relieved.

She was seen at various times during the summer by Dr. W. N. Bullard, at the out-patient department, and he has told me that the convulsions then continued. She has now disappeared from observation.

Wm. H., eighteen, single, was referred to me by Dr. J. Richard Taylor, of Sag Harbor, April 28, 1891. His paternal grandfather died of phthisis, his paternal grandmother of apoplexy. His mother is very nervous, one of her sisters died of paralysis, another of meningitis following influenza, a third of phthisis. The patient himself had been healthy until the age of twelve, when one day, while running with his head turned to the left side, he was struck in the right temple by the fist of a young negro who was chasing him. It is uncertain whether the negro had anything in his hand at the time. The boy was dazed for a time, the eye and forehead were badly swollen, but he made a speedy recovery, and went back to school that afternoon. There was no history of indulgence in tobacco, alcohol or venery, and venereal disease was denied.

In less than a year from the time of receiving this blow, the patient began to have seizures of various kinds. The account of the earlier attacks is not very definite. These attacks have increased in frequency. He now has three or four mild seizures a day, or even more, and, at the most, two or three severe seizures a week. He has been two weeks without a severe seizure, but within the last three months he has had forty-five severe seizures.

The severer seizures begin by turning of the head to the left; the left side of the face, the platysma and sterno-mastoid muscles, and the left arm twitch; the neck is more affected than the face. He sometimes bites his tongue, falls, loses consciousness and passes urine involuntarily. His physician reported that all the severer seizures began with a turning of the head to the left, and the left arm was usually affected. He frothed much at the mouth. Two weeks before coming to me, his physician saw him in a fit, in which he lost consciousness, ejected much froth from the mouth, and belched up much gas. In this attack he walked into the next room, came back and asked for medicine, went back and took it, and, as always happens, obeyed all the commands given. On returning to consciousness, three-quarters of an hour later, he had no memory of what had happened, and asked if the doctor had been there. He walked about with his eyes open and with the pupils moderately dilated.

In other attacks the head turns to the left, he froths much at the mouth, and he will take out his handkerchief with both hands in an aimless fashion. He will start and run, usually to the right with the head turned to the left, upstairs, or back and forth from one room to another. Sometimes he will recover promptly, at other times he will fall and have a convulsion, with twitching of all the limbs, followed by rigidity. After these attacks he falls into a deep sleep lasting half an hour to two hours.

In other attacks he begins to stare, presses on the abdomen with both hands, and belches up wind. He talks and answers questions intelligently, but he has no memory of what takes place during the attack. As soon as the attack is over he feels and appears well, but if he has them very frequently he is languid and tired after them.

Finally the patient describes lapses of consciousness, lasting only a few seconds and not noticeable by bystanders. In these attacks the head does not turn. In the minor attacks he chews a good deal, but he does not bite his tongue. They are attended with considerable gastric disturbance, and there is much belching of gas after them. There is never any aura; the fits are about as frequent by night as by day.

Recently he has had a feeling of pressure at the seat of his old injury, especially when fatigued. The memory for every-day events is not as good as it used to be, but the memory for events of some time ago or for book-knowledge is as good as ever. He is very fond of mathematics, but application renders him worse, so that he has given up school and study. He is a trifle more nervous and irritable than formerly. His general health is good, there is little headache and no visual disturbance, and he eats and sleeps well. No thoracic, abdominal or urinary symptoms.

Physical Examination. — Well developed, fairly nourished. The skin is thick and pasty, with an abundant fine papular eruption on the face, and to a lesser extent over the body. Mesaticephalic: long diameter, 19.2 cm.; biparietal diameter, 15.2 cm.; cephalic index, 79.16. Glabella to inion, 36 cm.; circumference, 56.7 cm.; measurement from one external auditory meatus to the other over vertex, 37.7 cm. Trococephalic and slightly plagiocephalic. A faint scar, the size of a pea, was seen on the right temple just at the beginning of the hairy scalp; there is a point near it which is sensitive to pressure. Pupils equal, 4 mm. in diameter, reacting to light and convergence. Ocular movements good. Field of vision and color sense normal, $vod = \frac{4}{4}$, $vos = \frac{4}{10}$. Fundus oculi normal. No deafness, tinnitus, earache or otorrhœa. Watch heard at five feet, *au.* Aural examination negative. Mobility and sensibility normal. Knee-jerk and plantar reflex normal. Dynamometer, R. 31, L. 33. Pulse 92–108. Examination of chest, abdomen and urine negative.

Medication had been faithfully tried for years. Hyoscine, hydrobromate and antipyrine had given some benefit, bromide had proved useless, iodide and mercury in small doses had seemed of benefit as a tonic. I agreed with his physician that trephining afforded a chance of relief, and I thought it best to have it done without further delay. He was accordingly admitted to the Boston City Hospital on April 29th.

April 30th. In the afternoon the nurse heard something fall, and found him on the floor with a clonic spasm of all four extremities and of the lower jaw; the spasm was not more marked in any one portion of the body. He frothed at the mouth, and after about two minutes he became rigid and lay in moderate opisthotonus for about three minutes; then he fell into a sound sleep. The head was shaved, the fissures and the tender spot were marked with nitrate of silver, and a corrosive sublimate dressing applied.

May 1st. The tender spot and the scar seemed to be very nearly over the centre for the movements of the head to the opposite side, and this movement was the signal symptom for the majority of the fits. He was, therefore, trephined over that spot by Dr. Post. Almost directly beneath was found a marked bluish white opacity of the pia, but the opacity and œdema extended in every direction under the edges of the trephine opening, so that it was clear that the lesion was diffuse. The details of the operation will be given by Dr. Post.

May 2d. He made a good recovery from the ether, and slept fairly, although he was restless the latter part of the night. In the morning he was comfortable. Temperature 99.5°, pulse 116. In the afternoon he complained of headache and restlessness, and of the tightness of the bandage, which was loosened. Temperature 101°, pulse 132. He was given hydrobromate of hyoscine (gr. $\frac{1}{100}$) at night.

May 3d. Very comfortable. Morning temperature 99.2°, pulse 100. Evening temperature 101.8°.

May 4th. Temperature lower. No convulsions.

May 7th. Temperature has not risen again. No headache; good appetite; slightly costive; sleeps well.

May 10th. General condition excellent.

May 13th. Dressing removed. Wound found in perfect condition, healed by first intention. All the stitches, twenty-two in number, were removed. Not a drop of pus was seen. General condition excellent, and he complains of no trouble in the head. Dry dressing.

May 15th. Had a convulsion.

May 20th. No dressing on head now. Yesterday he had four mild convulsions. He became unconscious for a few minutes, pulled at his lip, the pupils dilated, then he came to himself, and fell asleep. Up a few hours yesterday and to-day.

May 21st. Another convulsion.

May 22d. Discharged. Not relieved.

June 4th. No attacks since May 26th. He has had thirteen since the operation. I saw him in one, which began by turning of the head to the left, and involved the left arm. He was given twenty grains of bromide of sodium and ten minims of fluid extract of cannabis indica, which seemed to control the attacks somewhat. A few days later he returned home.

A letter from Dr. Taylor, of the date November 1, 1891, gives further information:

"Mr. H. is at home, and I think has not materially improved since the operation. For three weeks after the operation he was apparently well, then had several days (two or three) in which he suffered from slight attacks characterized by temporary loss of consciousness, with profuse flow of saliva and unintelligible muttering and mumbling — each attack lasting from three to five minutes. Between each series there is an interval of ten or twelve days, in which he apparently enjoys very good health. Since the operation he has had ninety slight attacks and four severe convulsive seizures, in which the movements were noted on the left side, involving the muscles on the left side of the neck, chest and left arm. In running away on one occasion, he ran in a circular course to the left. His appetite is very good, the bowels act well, and he rests well, though a light sleeper. He devotes too much time to thinking about his condition, though I keep him busy with out-door pursuits as much as possible. He uses Brown-Séquard's mixture of iodides and bromides and fluid extract of cannabis indica."

These two cases may serve, perhaps, as a text leading to a discussion of the propriety of trephining for traumatic epilepsy. The possible scope of the operation has been extended of late, so that there are now two questions to consider: the propriety of trephining in cases where epilepsy has declared itself, and the propriety of trephining in cases of head injury as a means of preventing epilepsy.

The operative proceedings in cases of epilepsy have been further extended, in that operation is undertaken not only for the elevation of depressed bone, the removal of cicatrices, etc., but also, in Jacksonian epilepsy, for the excision of the apparently intact cortical centre from which the discharge arises.

Excision of the cortex has been done in comparatively few cases, and the results, as a whole, have not been very satisfactory. In several cases, however, temporary relief has been obtained, and in a few cases the fits have not recurred up to date, a period, however, of only two or three years. Even such a limited percentage of success, however, renders the procedure justifiable in severe cases.

Trephining for the purpose of removing depressed fragments, cicatrices, etc., is an operation of much longer standing and of a less serious character. Cases are on record showing relief and even recovery following such an operation so as to render its performance perfectly justifiable. It may be well, however, to consider some of the factors which render the success of either operation doubtful.

The theory advanced by Hughlings-Jackson, that local irritation of a cortical motor centre may lead to a motor discharge from that centre, and perhaps from others near it, is well known. Following upon it came the corollary to remove the irritation from the centre as a prevention of subsequent motor discharges.

In cases of injury to the head, however, we may have two factors: first, a general commotion of the contents of the cranium, and, second, a local injury of the skull and the brain beneath it. The first factor is always present, the second is not constant.

We know that such a commotio cerebri may give rise to various diffuse structural changes in the brain, and, as a result of such changes we may have epilepsy. It is, moreover, now well-established that partial epilepsy, of the so-called Jacksonian form, may be the result of diffuse changes, of lesions remote from the affected centre, of poisoning, as in uræmia, and of various unknown diffuse molecular (?) changes as in true epilepsy and hysteria. Commotion is therefore a possible causal factor in all cases of traumatic epilepsy, and if it be the cause, the removal of any local lesion will be powerless to effect much relief. My second case shows clearly a diffuse lesion, giving rise to partial epilepsy, and due, not improbably to the diffuse, rather than to the local effects of the blow, in what was probably, from its heredity, an invalid brain.

In other cases we may have epilepsy as a result of the local irritation, although, as the general commotion can seldom be excluded, this is less absolutely certain. Granting the fact, however, we find, not infrequently, a history not unlike that of my first case. A fairly healthy brain receives a local injury, and, for a long time, resists its effects. Finally the resistance yields and an epileptic attack follows. In the present case the brain resisted four years and a half. In that period there is time for various secondary processes (inflammatory changes starting from the seat of injury, secondary degenerations of association tracts, etc.), to develop. Hence, by the time the epilepsy has manifested itself, the other diffuse changes are well-advanced. Although the local irritation may be removed soon after the epilepsy appears (after only twenty seizures, as in this case), the secondary changes may keep up the trouble, and the operation may prove futile. With an invalid brain the resistance is less prolonged, there is therefore less time for secondary changes, and the removal of the local irritation may thus give more relief.

It is unfortunately by no means easy to determine how far either one of these factors preponderates in the causation of epilepsy in the individual case, nor can we, as yet, decide whether the trouble be due to general commotion or to local irritation. Hence every operation must be merely tentative, and the result, as follows from what has been said, will always be doubtful and not infrequently negative.

In view of the gloomy prognosis of traumatic epilepsy, even after an operation, the question of preventive treatment by early operation naturally arises. If epilepsy be due to a local irritation, and if that irritation be promptly removed before the secondary changes above referred to have set in, the chances for recovery are naturally much greater. The risks of such an operation are, of course, comparatively slight, although statistics are lacking to enable us to give exact figures. Hence, a year ago, Horsley urged that every fracture of the skull be immediately trephined, and Agnew, at Washington, assented to that view so far as to urge that every depressed fracture be trephined.

It is certainly justifiable to do much to prevent epilepsy, and in some cases this procedure will probably be successful. Most men to-day, I think would trephine such a case as my first one at once. and, if this had been done, I think the epilepsy would have been prevented. In my second case, however, no one would have thought of trephining, and I doubt if early trephining would have done much good.

We lack information on two important points. The first is how many cases, the second is, what cases of fracture of the skull will be followed by epilepsy. From May 1, 1882, to January 1, 1891, 122 cases of fracture of the skull have been discharged relieved from the Boston City Hospital. During the same period 184 new cases of epilepsy have presented themselves for treatment in the out-patient department. These figures have some slight value in showing the relative frequency of the two conditions. I have certainly seen one-third and probably one-half of the epileptics. Of those that I have seen only a small proportion, not over ten per cent., could be regarded as traumatic. My figures are of course vague, but they would lead us to suspect that only a minority of the cases of fractured skull become epileptic.

Dr. J. J. Putnam has recently called attention to the possibility of epilepsy being due to the diffuse changes above referred to, and he has also emphasized the fact that in many cases, even of depressed fracture, the depressed inner table of the skull presents a smooth, rounded surface, which cannot act as a local irritant.

Considering, then, the probability that a general commotio cerebri is a prominent factor in the causation of traumatic epilepsy, that many fractures do not give rise to local irritation, and that, probably, a majority of the cases of fractured skull are never followed by epilepsy, I am disposed to believe that preventive trephining is hardly warranted unless there be distinct cerebral symptoms at the time, which would indicate its performance independently of any consideration as to subsequent epilepsy, or, in other words, that preventive trephining, *per se*, is not, as yet, justifiable. If we could tell what cases are likely to be followed by epilepsy it might be different, but, as yet, we have no means of deciding upon this point.

SURGICAL DETAILS, BY DR. POST.

It seemed to me, at first, that the operation was so simple that there was nothing to say upon the purely surgical details; but thinking it over a little made me feel that when it had become possible to remove a piece of bone from the skull with a bit of the meninges with an assurance of primary healing without special constitutional disturbance, that there might be something worthy of mention in the methods.

Briefly, the details of the two operations were as follows:

Kate F. entered the hospital on April 11, 1890. Soon after entering she developed a tonsillitis, and on the 17th the temperature was 101.8°. The operation was done on the 24th; her temperature being normal in the morning of that day, before the operation, and 99° in the evening, after the operation. On the next evening it reached 101.2°, gradually falling from that time, it became normal again on the fourth day.

Preliminary to the operation, the scalp was shaved and cleaned; a semicircular flap with the scar in the centre was cut and turned back; a cicatrix in the bone was exposed, which was included in the trephine button one inch in diameter which was removed.

The bone was unusually thick on one side, and was united to the dura in the centre. When separated, there was slight bleeding from the torn dura. A piece of the membrane, the size of the trephine hole, was cut out, which seemed thickened, and was adherent to the brain beneath. The small adherent portion of brain substance was removed. The wound was irrigated with boracic acid solution and closed with silk sutures, and a baked dressing applied. No drainage-tubes were used.

On the fifth day (29th), the patient was found sitting up in bed and reading. On the sixth, she was allowed to sit up in a chair with blankets, but walked around and gossiped with the other patients.

The trephine button was an exceedingly interesting one. It was, as mentioned, double as thick on one side as on the opposite. On section, it showed a sclerosis of the bone at the point of injury, which entirely obliterated the diploë. A minute canal ran from the outer to the inner surface. The inner face of the bone was as smooth as though it had never been injured. No operation at the time of the injury could have left a smoother surface.

W. L. H., aged nineteen, was operated on May 1, 1891. His scalp was shaved and thoroughly scrubbed. A semicircular incision was made about the spot previously decided upon. Three buttons, five-eighths of an inch in diameter, were removed and united by bone-forceps, making a hole some two inches in diameter. The bone was rather thin, but there was a troublesome hæmorrhage from the diploë, which was most easily controlled by a wax or putty made after a suggestion of Mr. Horsley. The flap was sutured without drainage-tubes, and a dressing was applied of baked gauze, the inner layers of the dressing being moistened with corrosive sublimate solution, 1 to 3000.

On the evening of the third day his temperature was 101.2°, the highest point reached. On the seventh day the record reads, "Temperature has come down steadily. No headache."

On May 13th the dressing was removed for the first time, and the wound was found in a perfect condition. It was entirely healed by first intention. All the stitches, twenty-two in number, were removed without disclosing a drop of pus. His general condition was excellent, and he complained of no trouble in the head.

In both cases the semicircular flap was used, which differs very decidedly from the old crucial incision. It is much easier to control, a single pair of forceps holding it out of the way instead of four, as in the crucial incision. It gives better access to the field of operation, and when the operation is done it covers the wound completely, like the lid over the top of a flask; but its great advantage is the fact that the edges come together perfectly giving a better opportunity for immediate union. Another advantage of the flap is that it allows the raising of the periosteum, with all the soft structures, so that the periosteum is preserved comparatively uninjured, and replaced with ease in its proper position.

Such a flap, like any incision in the scalp, is liable to bleed freely; and if an operation is prolonged, as it was in the first operation where the bit of bone to be removed had sides of very unequal thickness, it is worth while to take some pains to control the loss of blood, which amounts to a good deal in the course of a long operation. With our modern hæmostatic arrangements it is comparatively easy, but it is necessary to think a little about wounding the flap, as one is extremely anxious to get first intention. For that purpose I took pains never to clamp the whole thickness of the scalp, but where it was impossible to secure the artery in any other way, a stitch was taken and tied tightly, compressing the artery in that way, the stitch afterwards being removed, of course.

In enlarging the trephine wound, instead of taking out a second or third trephine button; I prefer to take out a single button, and enlarge the wound with the gouge forceps. It can be done with a pretty thick skull, but hardly possible with a skull of the thickness of the first button I showed.

The putty, suggested by Mr. Horsley, the exact formula of which I do not know, but an imitation of of which has been made, is extremely convenient in controlling the bleeding from the skull itself. It is very desirable to have an unobstructed view of the meninges after the bit of bone has been removed, and by stuffing the bleeding points of the skull with this wax one not only controls the hæmorrhage, but secures an unobstructed field.

In closing the wound it seems to me that it can never be necessary to sew together the membranes. It would be a much greater disadvantage to leave a stitch beneath the skull than any possible advantage that could accrue from it.

The replacement of bone after the operation is a question that is sometimes considered. I did not do it in either of these cases, nor in any of the other cases I have trephined for traumatic epilepsy. It seems to me that the object to be attained by the operation is the removal of that bone, and once removed there is no object in replacing it, even if nothing is found beneath it, and I cannot but think there may be an advantage in giving a little extra space for the brain to expand.

I did not put any drainage beneath these flaps, but closed them tightly. I will not say no drainage should ever be used. If a great deal of damage has been done, and one expects considerable hæmorrhage or leakage of any sort, drainage may be desirable; but ordinarily speaking, where there has been a clean wound and comparatively little damage done, I prefer to close the wound immediately without any drainage at all. The advantage of no drainage was illustrated particularly in the second case, where the patient went thirteen days without any dressing. Had there been a drainage-tube of any sort, a dressing would certainly have been necessary in a much shorter time. But when I say that these wounds were closed tightly, perhaps I ought to explain that I took pains in these cases to carefully adjust the flap so that first intention was possible everywhere, but at the same time I did omit a stitch or two, so that if there was any oozing or anything that needed to find exit, there would be a weak spot in the suturing where it could find exit more easily. The wounds were then covered closely with a baked dressing that is highly absorbent, so that little vacant space is left to fill with serum, and whatever oozes out is quickly taken up by the dressing.

The subsequent care of the cases was quite simple. I must confess that the second of these cases gave me a little anxiety for a day or two, as he gave me the impression of being quite sick during the time. In the first case the only anxiety was to know how long to keep the girl in bed. She would have been glad to get out of bed the second day, and when she was, with hesitation, permitted to sit up on the fifth day, she surprised us somewhat by running about the ward in the manner that has been mentioned. Whether any possible damage could be done to a patient by getting up and running about too early is a question in my own mind. I kept the girl quiet as long as I could, but at the end of a week she was practically beyond control. The young man I kept in bed much longer, with the intention that if there was any advantage to be gained from quiet after the operation, he should have it.

The danger of the operation seems to be very slight indeed. I suppose it would be the common feeling of all surgeons at present that while no operation should be done unnecessarily, there is practically no more danger in trephining an adult in good health than in going through the soft parts.

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OCULAR HEADACHES.

BY FREDERICK E. CHENEY, M.D.

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If a patient complains of headaches, pain in the eyes and poor vision, the probability of a refractive error being the cause is now very generally recognized. If, however, the sight is apparently normal, there is little or no discomfort in using the eyes for near work; and especially if the headaches are not frontal, an ocular defect as a possible cause does not usually receive much consideration. It is, nevertheless, a fact that a large number of patients, who have good sight both for distance and near, and who are able to read and sew for hours at a time without discomfort, suffer from migraine and neuralgic headaches, frontal, temporal, occipital and general, that can be entirely relieved by the correction of some refractive or muscular defect.

Strümpel, in his "Text-Book of Medicine," after mentioning a number of remedies that can be tried in the treatment of habitual headaches, concludes the chapter with the following paragraph:

"We can sometimes do the patient good service with remedies mentioned, but in other cases the evil obstinately defies all attempts at cure. Then, however, the patient has still the encouragement left that the disease often ceases at least spontaneously in advanced age, after lasting for years and years."

The oculist is consulted by many patients who give a history of past headaches that have lasted for "years and years," and that have finally ceased spontaneously. They usually present themselves between the ages of forty-five and sixty, and are found to have a moderate degree of astigmatism or hypermetropia, the correction of which earlier in life might have prevented years of suffering from habitual headaches. It is not difficult to understand why reflex ocular headaches should cease at this time of life. The emmetropic eye, as we know, sees distant objects clearly without any effort of the accommodation, and at the reading distance by increasing the convexity of the crystalline lens three dioptres. The hypermetropic or astigmatic eye, on the other hand, finds it necessary to accommodate for distance as well as for near, if clear vision is to be obtained. As an illustration, if an individual with a hypermetropia of three dioptres sees distant objects clearly, he must use three dioptres of accommodation, — the amount used by the emmetropic eye in reading, — and six dioptres, or double this amount, for his near work. In early youth, when the accommodation is most active, this extra work is accomplished without much difficulty; as he grows older, the effort to maintain clear vision becomes greater and greater, in consequence of the natural failure of accommodation until, with advancing years, the time comes when the power is not strong enough to overcome the defect, and soon ceases to attempt it. So long as the struggle for clear vision continues, so long may we look for headaches or other reflex troubles as a result. With a cessation of this struggle what is more natural than that "the disease" should "cease at last spontaneously after it had lasted for years and years." Another interesting point in connection with the fact, that symptoms of eye-strain are present only when an attempt is made to correct the defect, is, that individuals having very high degrees of hypermetropia or astigmatism are much less liable to pains in the eyes and headaches than are those having small and moderate degrees. A patient with four or five dioptres of astigmatism will consult an oculist, in a large majority of cases, not because he has asthenopia or severe headaches, but on account of poor vision. In other words, he has found it impossible, even by the greatest effort of the accommodation, to obtain clear vision for any length of time and has ceased early in life to make the attempt. On the other hand, we see patients with one-half or three-quarters of a dioptre of astigmatism who see perfectly well both for distance and near, but who do so at the expense of an extra strain on the accommodation and who often suffer severely in consequence.

The following cases which I report are not exceptional, but will serve to emphasize one or two points which I wish to make prominent in this paper, namely, that patients may suffer for years from ocular headaches and yet have little, if any, local eye symptoms that will suggest their origin. The sight may be good, they may be able to use the eyes constantly for near work with little or no discomfort, and in some cases the pain may be confined principally to an area more or less remote from the eyes.

Case I. A lady, forty-five years of age, was first seen April 28, 1891. She has always had headaches, usually as often as once in two weeks, frequently two or three in a week. During school life had sick headaches, but the last few years they have been mostly neuralgic. Pain usually begins over the eyes and becomes general, but is sometimes confined to occipital region. She has always seen perfectly well for distance and near and the eyes have never ached until within the last year or two. An examination under homatropine gave the following results: vision of the right eye normal, hypermetropia two and a half dioptres, vision of the left eye normal, hypermetropia three and a quarter dioptres, no insufficiency or other ocular defect. Glasses correcting the refractive trouble were ordered for constant use. The patient reported after using glasses for five weeks, that there had been no headaches or pains in the eyes during that time. She was again heard from five months later, and there had been no return of the headaches.

Case II. A gentleman, fifty-two years of age, consulted me July 20, 1889. The trouble complained of was poor sight for distance and near. Until within the last two or three years, he has seen perfectly well for distance, but has used glasses for reading for about seven years. The eyes have never ached or given other signs of being strained. He has been subject to severe neuralgic headaches all his life. Until lately he has had from one to three attacks a month, now much less frequent and not as severe. They are usually at the back of the head, the pain extending into the neck and shoulders, sometimes at the side of the head, rarely over eyes. Upon examination he was found to have hypermetropia of one and a quarter dioptres in the right eye, and one and three-quarters in the left. With correcting glasses, distant vision was normal. No insufficiency or other ocular defect. Glasses correcting the hypermetropia were ordered for distance and appropriate ones for near work. There is little in this case that would suggest eye-strain as the cause of the neuralgia, but the probabilities are, that if glasses correcting the refractive error had been worn constantly from early youth, the patient would have been saved much suffering. The good vision he has enjoyed for years has been obtained by overworking the ciliary muscle. The inability to do this work results in a failure of sight, at about which time there is also a marked decrease in the frequency and severity of the headaches.

Case III. A gentleman, twenty-five years of age, book-keeper, first seen February 2, 1890. He has had severe headaches for a number of years, top and back of head. Has dull pain in the head most of the time. Lately has had dizzy spells and occasional pains in the eyes at night. Sees perfectly well both for distance and near. Upon examination, under homatropine, he was found to have three-quarters of a dioptre of hypermetropic astigmatism, each eye, axes vertical. Eyes otherwise normal. Glasses correcting the astigmatism were prescribed for constant use. The patient reported three months later that the headaches and dizzy turns had ceased soon after he began to use glasses and had not returned.

Case IV. A gentleman, forty-one years of age, first seen May 6, 1891. He had had headache for a number of years, frequent, but not of sufficient severity to confine him to the house. Usually wakes with a headache if he has been to the theatre the night before, or read late. The pain is frontal and in the top of the head. Has always been a great reader. Sees perfectly well, and eyes have never ached until lately, and not enough now to prevent his using them a number of hours daily for near work. Upon examination he was found to have a quarter of a dioptre of hypermetropic astigmatism in the right eye, and double this amount in the left, axes vertical. Glasses correcting the defect were prescribed for constant use. He was heard from about four months later, and there had been little or no headache since using them.

It is unnecessary to mention other cases, which would simply be a repetition of histories that are familiar to every practitioner. All functional headaches do not of course result from eye-strain, but eye-strain is a sufficiently common cause to make an examination of the eyes advisable when internal or other treatment does not result in a cure after a reasonable length of time. A dose of phenacetin, antipyrine, or of various other remedies will often result in a cessation of pain, but they may also prove of equal value in controlling the neuralgic pain which accompanies iritis; and yet the iritis, the cause of the pain, is probably neither better nor worse for such treatment. It is impossible to say just what per cent. of functional headaches result from eye-strain, but I should be very much surprised, if out of one hundred unselected cases, at least one-half of fifty per cent. were not greatly benefited or entirely relieved by the correction of some refractive or muscular defect. An occasional headache may, of course, occur in the most pronounced ocular type, even after the trouble is fully and actively corrected, for the reason that the proper position of the glasses before the eyes is not always maintained, and their constant use is even neglected, but that the relief will be such in this per cent. of cases as to leave little doubt in the minds of the patient and physician as to the origin of the trouble, I most certainly believe.

To show that this is not merely the enthusiasm of a specialist, I may say that my friend Dr. G. L. Walton has recently assured me that in cases complaining of cephalagia, and especially migraine of long duration, after eliminating organic diseases and toxic and syphilitic influences, his first suspicion is that an error of refraction exists, a suspicion so often verified by experience, that he considers the estimate above named a very conservative one.

It is not difficult to see why ocular defects should be such a potent factor in the causation of headache. In our present civilization, where the ability to read and write is so general, and where the demands made upon the eyes for near work are so rapidly increasing, we find ourselves provided with visual organs that are by no means perfect in their optical construction, though well adapted to the requirement of the savage and even to the larger proportion of our ancestors of a hundred and fifty years ago. To the student, the bookkeeper or the sewing woman, the ability to see distant objects clearly is but of secondary importance; the thing most to be desired is the ability to see near objects clearly, with as little muscular effort as possible. The individual with a myopia of three dioptres would seem, therefore, best fitted for an occupation requiring the long-continued use of the eyes in near work, in that no accommodation effort is necessary for clear vision at the reading distance.

In conclusion, I wish to say a word in regard to the advisability of correcting ocular troubles in the more serious forms of functional nervous disturbances. To say the eye-strain is a very frequent cause of epilepsy and chorea, would be to mark one's self as an enthusiast; but I am thoroughly convinced that many cases can be relieved indefinitely by a correction of some refractive or muscular defect. The expression "relieved indefinitely" is used advisedly, in preference to "cured," for the reason that eye-strain cannot be regarded otherwise than as an exciting cause in precipitating the nervous affection, a predisposition to which already exists. If an epileptic is found to have a refractive error, and if a correction of this error results in a cessation of the attacks, the treatment cannot be regarded as valueless because the trouble ultimately returns. It should rather be regarded as a proof that reflex irritation is capable of precipitating the attack, and should lead to a careful search for other possible exciting causes.

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Clinical Department.

A CASE OF FUNCTIONAL MONOPLEGIA IN A MAN, DUE TO TRAUMATISM: RECOVERY.

BY JOHN G. BLAKE, M.D.,
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AND MORTON PRINCE, M.D.,
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THE case which we are about to report should be of interest to the general practitioner as well as to the neurologist, because it shows the degree to which paralysis may develop after an injury and yet be functional, and the possibility of recovery from such a condition. The case is also interesting in many of its details, being a typical example of so-called hysterical or functional paralysis of the type made classical by Charcot. The patient met with the accident in the following way: He was standing on a board which was lying upon the ground when one of the derricks of the new court-house fell, striking one end of the board and tilting the other end violently into the air. The man was thrown over backwards and received a violent shock although no external signs of injury at the time could be detected. The date of the accident was November 9, 1887.

The physician who saw him immediately after the accident, stated that the patient was brought to his office on the back of another man, and that he (the patient) said he had been hit on the leg and back and he could not move his leg without pain. There were no visible wounds on his body.

Dr. Blake saw him one month later; at that time he was in bed. There was entire loss of power and sensation in the right leg, and he complained of distress and pain in his stomach for which he required opiates. This condition had existed since the accident, but the gastric symptoms about this time were worse.

He was seen by Dr. Walton April 22, 1888, five months after the accident. Dr. Walton's notes, which he has kindly given me, show that his condition at this time was practically the same as when seen later by the writers in consultation, excepting that pain in the stomach, headache, and pain in the right leg and back were more prominent symptoms, and were said by the patient to be more severe than immediately after the accident. Dr. Walton also noted an area of numbness in the lumbar region. This was not afterwards noticed, if present.

The writers found his condition January 30, 1889, fourteen months after the accident, to be as follows: The right leg was paralyzed. This paralysis was absolute, or nearly absolute, so that he had no control over it whatever. There was also complete loss of the tactile sense and of the sense of pain from the knee down. The most severe pricking and pinching was not felt, and the strongest faradic current was only slightly appreciated on this part of the leg. The man walked with crutches, dragging his right foot along the ground. The muscular sense of the right leg was also lost. More careful examination, however, showed that the disability was more extended than this, and although the paralysis and anæsthesia appeared to be limited to the right leg there was a general weakness of all his muscles more marked on the right side, though not amounting to absolute paralysis. And although the absolute anæsthesia was sharply limited in a typical way by a line at the level of the knee, yet, when tested by the æsthesiometer, it was easy to make out that there was a blunting of the sensation over the whole right side. On the front it was limited by the median line of the body (limiting line of the back not determined). More than this, there was impairment of all the special senses, the impairment being more profound on the right side. There was great loss of acuteness of vision in both eyes, so that he was obliged to hold a watch and large printed letters close to his eyes to see. There was absolute loss of the perception of colors in the right eye, and the left only recognized red and (temporarily) green. There was moderate limitation of field of vision in both eyes. The hearing of the right ear was about $\frac{3}{18}$ and of the left $\frac{6}{18}$ tested with the watch. The drums were normal.[1] Taste was blunted on the right side of the tongue and smell on the right side of the nose.[1] His general condition was that of great debility; he was pale, anæmic and generally weak. He was very easily tired, as, for example, by the examination.

Dr. C. F. Folsom also saw this case in consultation with the writers and all agreed it was one of hysterical paralysis. It may be here mentioned that the man was in no sense of the word hysterical or emotional in the popular sense, a condition which is often thought to be essential in this form of paralysis.

Our reasons for diagnosing functional and not organic disease were as follows: Although there was loss of the plantar reflex on the right side, the cremasteric and abdominal reflexes were present and the knee-jerk, contrary to the customary condition in organic disease of this duration, was absent on the right side, although present feebly on the left. Nor was there any rigidity or spastic condition of the paralyzed limb, but the leg was limp and flaccid. It will be remembered that a monoplegia due to organic cerebral disease must be caused either by a very limited lesion of the internal capsule or by disease of the cortex; in either case, when such paralysis is absolute, and after it has continued for any great length of time, descending degeneration takes place along the motor paths and a spastic condition of the limbs result with increase of the deep reflexes.

The gait is also characteristic owing to the spastic condition of the leg. If this case were to be attributed to such cerebral disease the implication of the special senses would require its localization in the neighborhood of the internal capsule. But lesions of this region do not produce amblyopia of both eyes, but hemiopia. This is due to the involvement of the optic radiations, that is, the prolongations of the optic nerve on their way from the optic thalamus to the occipital lobes.

Although there is much dispute amongst physiologists, whether there is any region of the cortex, destruction of which produces amblyopia in both eyes, and although Ferrier maintains that lesions of the angular gyrus has this result in monkeys and in dogs, there is no clinical evidence that such is the case in human beings or that when such amblyopia occurs it is not due to functional disease. The way in which this man dragged his foot was also very characteristic and the absence of paralysis of the face, though not of great importance, had some significance. It is an interesting fact that, although there was no atrophy of the paralyzed muscles, they *did not respond as well to the faradic current as did those of the sound leg.* As a suit for damages was in progress, it was agreed, in order to eliminate any suspicion that might be raised regarding malingering, that the patient should be etherized. He submitted to this test, but no movement could be detected in the paralyzed muscles. A verdict was given by the jury for $6,000.

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[1] This is stated from memory, no note having been made at the time though these particulars were included in the examination.

Shortly after the trial the patient sailed for Italy. It so happened that a friend of the claimant and one of the witnesses also went to Italy about this time. A short time ago she returned and reported to me that she had been to see the patient at his home and found him apparently perfectly well. She said that they had taken long walks together, climbed hills, etc.; that he had recovered the loss of his eye-sight and was practically well. She said that he told her that his recovery began to take place shortly after his arrival and was rapid. This was about three months after the settlement of the case.

Cases like this one are not very uncommon and form quite a percentage of the cases that come into the courts. The claim is generally set up that they are due to organic disease and that they are incurable. The ending of this one illustrates the possibilities of a favorable issue in a comparatively short space of time, although it must not be denied that many such cases persist in *statu quo* for a great length of time.

ADDENDA.

The skin of the right leg was colder to the touch and by the thermometer than that of the left. The grasp of the right hand ranged from twelve to twenty degrees, of the left from twelve to thirty, by the dynamometer. No ataxia. Both thighs and legs measured the same. The left eye perceived yellow and green as white or light shades, blue and violet as black. He complained of steady dull pain in the abdomen between epigastrium and sternum.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, November 9, 1891, the President, Dr. Frederick I. Knight, in the chair.

Drs. P. C. Knapp and Abner Post reported

TWO CASES OF TREPHINING FOR TRAUMATIC EPILEPSY.[1]

Dr. James J. Putnam read a paper on

THE RELATION OF EPILEPSY TO INJURY OF THE HEAD.[2]

Dr. J. C. Warren: I think the gentlemen who have already spoken have covered the ground so thoroughly that I have nothing special to say on the general subject.

From the surgeon's point of view the question of interference at the time of the injury is one, of course, of great importance, particularly after what has been said by the gentlemen this evening. We see what is possible to result from local irritation, and we have got to determine in a case whether there is sufficient local trouble which is likely to remain and be progressive afterwards to authorize us to interfere. I do not feel, as a result of my experience, authorized to interfere in cases of simple fracture, even if there are some localizing symptoms at the time, unless those symptoms have a certain amount of permanency showing perhaps the presence of clot underneath the point of injury. But if there is any depressed bone, it seems to me that I should not hesitate to interfere in any case, whether there were localizing symptoms or not. It seems as if under those circumstances one ought to make an exploratory incision through the bone and see how much injury there has been to the inner table and perhaps to the membranes of the brain. We may have little or no trouble, but we have done little or no harm to the patient, removing simply a button of bone. We may have a greater amount of injury to the inner table than is apparent to the outer table, and may have one of those sharp points which is going to be a source of meningeal and perhaps cortical irritation. It is not necessary in many cases to have depression of the inner table in order to produce considerable irritation. We may have persistent headache and perhaps symptoms pointing to meningeal irritation and perhaps irritation of the brain itself as a result of direct injury to the bone, not simply a contusion of the bone, but perhaps a depression of the outer table. We may have a localized ostitis, which may communicate itself to the meninges, and may be the result of thickening of the bone and some dural irritation, which may lead subsequently to the necessity of an operation. I have such a case in mind where a boy was kicked by a horse, and where there were two depressions something like those shown in the button Dr. Post has removed, and with some irregularity in the bone. In this case there was persistent headache of such character as to prevent the young man from pursuing his studies, which has been entirely relieved for a year now by removal of a button of bone. The dura was found adherent to the bone at the point of trephining. Possibly in those cases there is some anchoring of the brain, that is, adhesion of the brain to the dura, and irritation every time there is change of the volume of the brain, due to variation in the circulation or whatever movements are possible. That condition known as anchoring of the brain gives rise to considerable irritation, and is one to be thought of when we have to settle the question of an operation.

In regard to the details of the operation, they are so familiar that I think there is not much to be said. Dr. Post has already described that. I would merely mention the points in which I have acted slightly differently. I am in the habit of suturing the dura. I do not know whether in some cases hernia of the brain might result if this were omitted; but it brings the parts back perhaps a little more to their natural condition than if suturing is not done.

In regard to the replacement of the bone, I have done that in one instance only in these operations, and that with entire success. It seems to me as if in cases where a considerable portion of bone was removed, it was of advantage to have a restoration of the cranial vault after the operation. It gives a little better security to the individual afterwards, although large holes from the removal of the button have been made without subsequent inconvenience to the patient. I had a relative who was operated on by Dr. John Warren, in his youth, for compound depressed fracture of the skull. A large number of fragments were removed. There was a space perhaps three by two inches in the temple. That gentleman lived to be over eighty, and never had the slightest trouble or inconvenience from that soft place in his head.

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[1] See page 5 of the Journal.
[2] See page 1 of the Journal.

The question of drainage is an interesting one to surgeons, and I am inclined to agree with Dr. Post that drainage is not necessary in these cases. I have tried both ways, and find they do as well without. My custom, following Dr. Keene, is to leave a slight strand of gauze between the stitches for twenty-four hours, to let out the primary oozing of serum that takes place after any operation. I think that patients are a little bit more comfortable after a precaution of this kind than without. The symptoms of pressure are less. Possibly it may save an attack or two of epilepsy.

In regard to the after-treatment, it seems to me it is important that patients should be kept quiet. I do not understand the modern departure from the old custom, which was that patients should be watched carefully after head injuries for a month at least. Dr. Keene, in one of his first cases, allowed the patient to walk a half-mile on the fifth day, and many patients are up and about in five days. No doubt that can be done, and it is an interesting testimony of the brilliant results of aseptic surgery; but at the same time it seems to me that the brain needs rest after such operations as this, where it has been exposed, and particularly where irritation seems to threaten such grave results, a considerable period of time should be allowed to elapse before any excitement should be produced. I am in the habit of keeping the patient pretty quiet for two or three weeks after the operation.

There was one interesting point in the discussion on this subject in Washington in respect to the after-treatment in these cases, namely, that bromides and other remedies should be used to wipe out the epileptic habit. How much there is in that point I am not able to say. That the hyperæmia which tends to exist in all recently healed wounds should be kept down to the minimum, and the sensitive cerebral structures blunted as much as possible, seems to me to be a rational idea, and worth a thorough trial.

Dr. M. H. Richardson: It seems to me that epilepsy is so serious a disease that almost anything is justifiable, even if it promises nothing more than temporary relief.

In all compound depressed fractures, with or without symptoms, and in simple depressed fractures with symptoms, an operation should be performed at the time, and the fragments should be removed. I believe that there should be no interference in linear fractures or in compound fractures without depression unless there is some evidence of injury to the brain or membrane. Nevertheless, it is to be borne in mind that there may be a comminution of fragments of the inner table with slight depression and very little apparent trouble. I have operated on many cases in which, though externally there appeared to be little if any comminution, I have found many sharp fragments in direct contact with the dura, and that membrane occasionally lacerated.

I think, from experience gained from my own cases and those of others, that operations for epilepsy promise very little indeed; yet I do not believe that the time has come to abandon all operative measures. All my operations, without exception, have been failures where I have removed depressed fragments after the epileptic habit had become established. In some of them there has been marked displacement of fragments and pressure upon the brain. In none of these cases have I opened the dura mater, however, and I would therefore admit that the operation has not been performed as thoroughly as it might have been. In those cases of others where I have seen radical operations performed, with one or two exceptions, nothing was evident to me at the time to account for the irritation, beyond an adhesion between the dura mater and the brain. In such cases it seems to me absurd to expect much relief except from the operation *per se*, as mentioned by J. William White. Where the operation consists merely of a separation of adhesions between the brain and its membrane, it seems to me that we have no reason to expect much benefit.

The practice of using decalcified bone-plates to assist in closing the skull-opening does not seem to me justified by any experience thus far gained, clinical or experimental. In the surgical application of all animal derivatives we rightly depend upon absorption. Bearing in mind how difficult if not impossible it is to render bone-plates aseptic, their use, it seems to me, is not only of no value, but even dangerous.

As to the matter of drainage, I would agree with Dr. Warren in giving up drainage if he continues to use a strand of gauze in the angle of the wound. It seems to me, however, that that is drainage, and of the very best kind. I, for one, am not willing to give up drainage, except in very rare cases. I believe that this principle has played a most important part in surgery, and that the time has not come when we may safely abandon it. In Dr. Post's case provision was made for the escape of fluids by leaving a gap here and there. That certainly is drainage. I would certainly agree that the use of drainage-tubes should be very limited, and believe that there is nothing better than the gauze (wick) drainage, especially in abdominal surgery. This is quite different from sealing up a wound completely, which seems to me a very questionable procedure, except in rare cases. I have reached this conclusion after considerable experience, more especially in breast extirpations. In many cases the wound became distended with blood-clot which, though aseptic, required several weeks for absorption. Drainage for the first twenty-four hours would have prevented a tedious convalescence.

As to the frequency of traumatic epilepsy, I think it is evidence of some value that we see so few cases of this lamentable condition in comparison with the number of fractures of the skull. From 1880 to the present time there have been numerous cases of fracture of the skull treated at the Massachusetts General Hospital by operation or otherwise. So far as I have been able to ascertain, not one of these cases has ever returned for the treatment of subsequent symptoms. In some, from my personal knowledge, I can say there has been no trouble whatever seen after depression unrelieved by trephining. It cannot be true that any considerable number of these persons developed epilepsy without seeking relief at the same hospital. Even in cases of depression without symptoms and without operation, I believe the existence of irritation symptoms will rarely be met with.

Nevertheless, as I have already said, I believe the condition frequent enough to make operative interference imperative in *all* depressed fractures, whether simple or compound.

Although the present outlook seems discouraging, I believe in carrying on our work in this direction until we succeed in demonstrating, one way or the other, the value of operative interference in this terrible disease.

Dr. G. L. Walton: The ground seems to have been very thoroughly covered, both from the neurological and surgical points of view. It seems to me that our experience certainly does not authorize great enthusiasm on the subject of secondary operation for traumatic epilepsy, and yet I agree with Dr. Richardson that in such a serious and often hopeless disease even a very small chance is enough to warrant us in attempting an operation wherever we think there is organic local disturbance going on either in the way of depression, cicatricial thickening, or other remains of trauma. I quite agree, however, with Drs. Knapp and Post that we not infrequently find convulsions commencing locally where no organic local irritation exists in the spot naturally suspected. I have seen a case in which convulsions starting accurately in the hand centre were shown by the post-mortem examination to have arisen from an abscess in the temporal lobe; in another case, where epileptic seizures of considerable standing started in the same way, perfect recovery ensued, which would hardly have been probable with an organic source of irritation.

With regard to the head and eyes turning to the opposite side, this seems to be a symptom which is started on very slight provocation, and would least of all lead me to suspect local irritation. I recall a patient who was under my care at one time with headache, loss of vision, and epileptiform attacks. She had one of these attacks in my office, in which the head and eyes turned at the onset violently to one side. The patient seemed rather stupid, indifferent, moved about in rather an automatic manner. I thought the chances were in favor of new growth, and treated her at first with large doses of iodide, and contemplated advising operation if she did not recover, but at the same time recognized the possibility of suppression of menses as cause of the trouble, this symptom having existed for nine months. In point of fact the whole trouble disappeared after re-establishment of the menstrual flow, she became perfectly bright, and was totally unconscious of having been to my office at all. The whole disturbance was therefore reflex, functional.

I remember another case where the principal symptom of tumor was epileptiform attacks in which the head and eyes were turned to the opposite side, together with optic neuritis. The patient refused operation. The tumor was found on post-mortem examination to extend through the motor area of the hand, arm and face, the tip of it only reaching the middle frontal lobe, the posterior part of which is supposed to be, and probably is, the centre of that motion.

It certainly seems as if the habit of epilepsy once set up by traumatic disturbance — whether there be, as Dr. Putnam suggests, a diffuse sclerosis, or whether there is a process starting from local irritation spreading — whatever may be the cause, the habit once set up, secondary operation offers very little hope; still I should advise operation, as I did in one case of Dr. Richardson's where the convulsions did not come on for about eight years after the injury. Dr. Richardson found a sharp edge of bone pressing in the dura mater. The convulsions disappeared for a time after operation, but recurred in all their severity and frequency; still I should again advise operation in a similar case.

Regarding the consideration of a primary operation with the view of avoiding epilepsy, I think if the case just mentioned had been operated upon immediately after the accident, the epilepsy would probably have been averted, because I cannot believe there was in that case a diffuse sclerosis of the brain or any general injury of the brain. It seems rather that the attacks persisted because the habit had been established to such a degree it could not be averted by removing the original source of irritation.

I am a little sceptical about this diffuse sclerosis playing a very important part, otherwise why should we not more frequently see epilepsy set up by general blows, and falls on the head, unaccompanied by fracture?

In regard to the primary operation, I should not agree with Dr. Agnew that every case of fracture should be operated on, and I am not sure I should with Dr. Warren that every case with depression should be operated on. Of course, in every case of compound fracture I should advise operation, and in every case of punctured wound, and in every case where there is marked depression or depression with very great angle, even if the skin is not broken, or in every case even with moderate depression where there are marked cerebral symptoms.

With regard to decalcified bone I have, perhaps, no right to speak, not having any surgical experience excepting through observation, but I quite agree with Dr. Warren regarding the harmlessness of leaving the opening free, and I see nothing to be gained by inserting decalcified bone, only to be absorbed, and meanwhile, perhaps, to act as a source of irritation.

The case upon whom Dr. Homans operated by my advice last year for hæmorrhage produced by contrecoup, experiences no inconvenience whatever from the large cavity which was necessary to the removal of the clot.

Dr. W. N. Bullard: I believe the most important point as to the cure of epilepsy is that the operation should be as early as possible. There is no question about the existence of an epileptic habit. Any one who has any experience of epilepsy knows this. A patient after one attack of epilepsy is much more liable to have another; and after he has had two, the attacks are liable to come with more and more frequency. For some reason the different centres become more irritable by each attack. For this reason I think it is advisable that operation should be performed for epilepsy at the earliest possible period. Of course, in those cases were operations are performed before epilepsy occurs, we have at present no statistics that would enable us to determine their value, because we have no statistics at present to determine how frequently epilepsy occurs after different forms of head injury.

That certain severe injuries, such as compound depressed fracture, should be trephined, I think there can be very little doubt. That every fracture should be trephined where there are no symptoms of local irritation is much more doubtful, and I should think that it was hardly wise to trephine in cases of simple fracture, or in cases where it seemed probable that only the outer table was injured unless with some very definite cause.

Of the traumatic cases of epilepsy which I have seen, a very large proportion have been in persons in whom the injury had existed some years, and I am inclined to think for that reason that in many cases the epilepsy comes on much later than is generally supposed; that is, some exciting cause, perhaps a very slight fall, not injuring the head, or some mental excitement, or some other cause acts at a much later period to produce an epilepsy. Of course, this is simply a matter of theory, not at present susceptible of proof; but the fact that so many cases come late would seem to be in support of it.

In regard to the treatment of epileptic cases the one important thing, in my opinion, is the use of the bromide after the operation. At least two of my cases which have been trephined have had epileptic attacks come on within five days after the operation, apparently simply from the fact that the bromide had been dropped. In one case it had been entirely omitted from the day of the operation. In the second case the bromide was given, but had been omitted two days previous to the attack. After the attack it was resumed, and for three months afterwards there was only one slight attack, which occurred again after omission of the bromide, showing that the bromide evidently had considerable influence.

As to the question of the occurrence of diffuse lesions with localized symptoms of epilepsy, I think there can be no doubt. I have seen several cases in which I have every reason to believe the lesion was diffuse, and yet localized epilepsy occurred.

As to the thickening of the dura after trephining, I have seen it much thickened, and after removing the thickened dura the patient was much better for a time.

I cannot agree with those who think that atrophy of the brain in children is always diffuse. It seems to me there are many cases in which it is not diffuse, but distinctly localized, and many such cases have been published. There are many cases in which the atrophy is diffuse.

As to the replacement of buttons after trephining, I think, as a rule, it is better to leave the button out. In one of my cases it was replaced, and the autopsy sometime later showed that it was perfectly solid, and the lower surface and edges smooth, so that there was no objection on the ground of any roughened edges to replacing it, and it completely filled the trephine hole.

DR. J. A. JEFFRIES: This whole question is one that must be settled by experience. We have started to do operations. They will be continued until the results are determined. So far, they do not seem satisfactory. I have seen a good many cases of traumatic epilepsy, but I have never been able to advise an operation yet. It seems to me we leave about the condition we operate to prevent in the shape of adhesions, irregularities, especially if we put back the button. If the operation effects a cure, it would almost seem that the scabs are not the cause of the epilepsy.

DR. R. H. FITZ recalled the recent discussion of this subject in Washington, in which ground had been taken similar to that presented by the readers and speakers this evening.

It seemed to him that sufficient evidence had been accumulated in different parts of the world to warrant the opinion that the operation of trephining for traumatic epilepsy was no longer justifiable (admirable is, perhaps, a preferable term). It is almost universally agreed that no permanent benefit follows, and, as a rule, but little immediate relief.

It is not even certain that the latter is a result of the trephining. In Washington, Dr. H. C. Wood had stated his knowledge of the production of temporary relief from mock and trivial operations, and urged that these should first be tried before so serious an operation as trephining should be undertaken.

Great weight should be attached to the view expressed by Drs. Knapp and Putnam as to the probable, general and remote lesions of the nervous system in traumatic epilepsy. The discovery of thickened membranes, adhesions and cystic œdema at the seat of an operation is no satisfactory evidence of the local origin of the disease, much less of the need of the operation. He knew that sufficient discrimination at this time was not always exercised between what was abnormal and what was pathological. A sclerosis of the diploë, an adherent or thickened dura, bone-plates in this membrane, vascular threads between the dura and pia, thickening, opacity and œdema of the latter were of such frequent occurrence in the absence of epileptic symptoms that he could attach little or no etiological importance to their presence in epileptics. Even the concurrence of a depression in the outer table at a seat of injury and epilepsy was no evidence that a subjacent intracranial lesion was to be found. A fact well illustrated by Dr. Post's specimen.

Recognizing, like his surgical colleagues, that traumatic epilepsy was almost hopeless, he could not agree with them that trephining should, therefore, be advised, even in cases of depression. Certainly not while mock or trivial operations may be considered as capable of giving equally satisfactory therapeutic results, and the graver operation is so rarely followed by any considerable or prolonged benefit.

DR. P. C. KNAPP: Dr. Bullard has just told me that he saw the first patient whose case I reported, after she left the hospital, and that she still had a continuance of the fits.

Dr. Putnam speaks about the cases treated on the preventive method. I think that the number of cases, where trephining has been done with the aim of preventing epilepsy and not with the aim of relieving some cerebral symptoms present at the time, are as yet extremely few. The suggestion of trephining, for instance, in simple linear fracture, was made only a year ago by Mr. Horsley, and there are very few cases, if any, that have been operated on simply on that basis. Of course, when you get a depressed fracture or compound fracture with cerebral symptoms it is not preventive trephining.

With regard to the adhesions that may sometimes follow, I noted them not long ago in making an autopsy after trephining. It was a case of brain tumor where Dr. Bradford trephined for the relief of pressure, and the adhesions of the membranes about the trephine opening were very great.

The after-treatment by bromide was adopted in both of my cases without any result.

In regard, furthermore, to diffuse lesions, there is one affection where certainly there are general diffuse lesions and where partial epilepsy is very common, namely, general paralysis, which has hardly been mentioned to-night.

Dr. Walton has stated that secondary operation is practically useless, and Dr. Fitz goes so far as to consider it unjustifiable. I think Dr. Fitz's position is hardly tenable, for it is an undoubted fact, and there are a good many cases now on record where after such operation we get distinct relief from symptoms for two or three years, or longer. Now, considering the very slight risk from trephining, certainly if we can give the patient a prospect of a few months' relief, as in the case reported by Dr. Beach, or of the general improvement in that girl's condition, even with the recurrence of the fits, certainly the operation is perfectly justifiable. I saw a few weeks ago one of the early cases of excision of the cortex for Jacksonian epilepsy, a case reported three years ago at Washington by Dr. Lloyd, where for a number of months the man was entirely free from convulsions. As Horsley said, three years ago, in that time the brain may so far recover itself that it may come out from the state of partial dementia, due to the convulsions, and get into a much more healthy state. Even in the cases that are a failure, strictly speaking, if we can reduce the number and severity of the convulsions, the operation is certainly justifiable.

In the report of his operation, I remember Dr. Beach made a suggestion of preventing possible adhesions between the brain and the membrane, by covering with gold foil. I do not know whether that has ever been carried out. That, certainly, would not be particularly irritating, and would not be absorbed.

Dr. J. J. Putnam: I think we want more facts rather than opinions in the matter. Dr. Walton thinks Dr. Richardson's case if operated on earlier, would have prevented attacks, but I don't see any ground for saying so. The symptoms were not especially localized with relation to the seat of the injury, I think. It seems to me that would be rather one of the cases I had in mind when I said that the epilepsy might be due to distant or to general and diffuse lesions. I want to say a few words about that. In speaking of diffuse lesions, I said that they were often found later in epileptic brains, although I admit what Dr. Bullard said, namely, that in the case of children the cerebral sclerosis may be more or less localized, as in so-called tuberous sclerosis. What I meant to say was, that the lesion that caused the epilepsy need not be necessarily directly beneath the injured bone. It is very easy to say that the irritation sets up a discharge at a certain point, and that this discharge then spreads out. That this is possible there is no doubt, but we do not really know what may go on before a discharge of a certain centre occurs. That particular discharge may be only the expression or outcome of morbid processes taking place elsewhere. Lesions which contribute to make the whole brain unstable may indirectly cause the epileptic outbreaks, either independently of the special local lesion or in conjunction with it. I understood Dr. Walton to say really the same thing I did in speaking of the cases where epilepsy began with certain symptoms, and yet where no lesion was found at the parts of the brain corresponding to those symptoms.

Dr. Bullard spoke of contributing causes of accidental kind causing epilepsy, which would otherwise remain latent. That is a very important matter, and that I referred to and would like to dwell on a little more in connection with the case of my patient and Dr. Beach's. The whole thing seems to have been brought back by a fall from a wagon. Up to that time she had been wholly free. Epileptic patients sometimes have their attacks brought on by fright or loud sounds. In a discussion on this subject, in connection with the statistics of the German army, the question of predisposition is dealt with as being very important.

The surgeons and all of us have spoken of the *probable* value of early operations. I do not know that any of us have given sufficient reason for deciding that they are *certainly* of value to the extent often supposed. I think that it is an opinion which we have formed, and which has a certain amount of basis, but does not, perhaps, have such basis as we could wish.

With regard to bone-plates, I have only to say that I took my statements mainly from Ziegler's Anatomy. I did see one case where the bone-plate was a possible cause of epileptic attacks. In general, I agree with what Dr. Fitz said, that they were usually not centres of irritation. That is what I specially called attention to in my paper.

The matter of general paralysis is important, and I referred to it in speaking of the diffuse processes.

As regards advisability of operating in cases of traumatic epilepsy, if we understand what it is done for and do not deceive ourselves and the patient, it is justifiable to do it for the sake of gaining a little time, just as we might operate for cancer under similar circumstances.

We have all of us seen patients who would give anything for a year's release from such symptoms as epilepsy.

MYXO-SARCOMA OF THE THIGH.

Dr. J. C. Warren: I have here a large tumor of the lower part of the femur of a woman of seventy, whose thigh I amputated on Saturday.

The history of the case is briefly this, that some ten years ago I removed a myxoma from the inner condyle of the left femur, which was followed in the course of a year by recurrence of the tumor. I have seen the patient from time to time, and owing to her age and to the extensive involvement of her thigh, I advised her not to have anything done. I have not seen her for a year or two. She appeared at the hospital a week ago with an enormous tumor of the lower part of the femur, and was very anxious to have it operated upon. I was struck by her general good condition and the fact that the tumor was still localized, although it had existed so long a time and was of so large size. With the understanding that it was a very serious operation, but that we were justified in operating to relieve the great pain from which she was suffering, I operated on Saturday. The patient is still alive, and although she has suffered a good deal from shock, still she is doing well to-day.

It is a large myxo-sarcoma of the soft parts or parts involving the periosteum. It does not involve the knee-joint. The patient was able to walk about.

I think I advised her for the best. She has had several years of comparative health so that she could take care of herself and get about. Now that she is completely disabled and suffering and nobody to look after her, it seemed advisable to interfere.[3]

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[3] Three weeks later the patient was doing well and the wound had healed except at the point of insertion of drainage-guaze.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of December 1, 1891, the President, Dr. L. C. Gray in the chair.

Dr. Charles A. Powers read a paper with this title:

RESECTION OF POSTERIOR BRANCHES OF UPPER THREE CERVICAL NERVES FOR SPASMODIC TORTICOLLIS, WITH REPORT OF CASE.

In February of the present year, the patient, a man thirty-seven years of age, was sent to the speaker for an opinion regarding a spasmodic affection of the neck from which he was suffering. There was no history of syphilis or other constitutional disease. He had been from boyhood exceedingly nervous and restless, starting violently when suddenly surprised, trembling at the slightest injury or fear of danger. His father had always manifested the same nervous conditions in a marked degree. The patient had rather a senile look, stooping and throwing the head well forward. When left to itself the head was spasmodically rotated to the right to its fullest extent. The patient could carry it back by pressing the chin over with the hand, but when the restraining force was removed it was instantly jerked back to its rotated condition. These spasms were constant during the day, and much worse when the patient was fatigued, irritated, surprised or among strangers. The right hand was constantly upon the chin, and the patient was unable to use it in work or even at table. The right shoulder was not elevated, there was no spasm of the muscles of the left side and the right trapesius, sterno-mastoid and scalenus anticus seemed free from implication. The patient's neck was large, thick and short; it seemed somewhat fuller on the right side, posteriorly, than on the left. The spasmodic movement seemed to be a rotation of the occiput upon the atlas; when it took place an increased fulness could be felt in the region just below the occiput and covered by the trapesius, although no contraction could be felt in that muscle. After very careful examination the affection was considered to be confined to the posterior rotators, and division or resection of the nerves supplying them was recommended.

The speaker, after familiarizing himself with the anatomy of the parts, by dissection on the cadaver, proceeded to operate. The occipital region was shaved and the parts prepared in the usual way. The anæsthetic was given, and the patient placed flatly upon his abdomen, the head projecting over the end of the table, and so held that the external occipital protuberance was in a straight line with the vertebral spinous processes. A three-inch transverse incision was made at the back of the neck, beginning at the median line one and one-quarter inches below the external occipital protuberance and running forward. This was sufficiently enlarged until it measured four and a quarter inches in length. After some difficulty the occipitalis major nerve was found at the upper part of the complexus outside of the intra-muscular aponeurosis of this muscle. The complexus was divided and the nerve followed back to the posterior branch of the second cervical. The inferior oblique muscle was then found, passing from the tip of the transverse process of the atlas to the spinous process of the axis. The nerve was followed back to its exit from the spinal canal. Following down beneath the complexus the external branch of the posterior division of the third cervical nerve was found. This was traced back to the bifurcation of the main trunk. One had at command, then, the nerve-supply to the inferior oblique, the rectus capitis posticus major and the splenius, the three posterior rotators, the first being supplied by the first and second cervical, the rectus by the suboccipital from the first cervical, and the splenius by the second and third cervical. Each nerve was followed well back to the spine, and from one-half to three-quarters of an inch excised from each of the three. Buried muscular sutures were inserted, a drainage-tube laid to the bottom of the wound, and the skin sewn up. A large antiseptic dressing was applied, and the head fixed in moderate extension by plaster

On coming out of the anæsthetic the patient had no spasm of the neck; the head was in the median line, and remained there until the final removal of the dressings. The wound healed per primam throughout. The tube was removed on the fifth day, and all dressings were taken off at the end of ten days. At that time there were a few slight spasms, but they did not persist. Directions were given regarding massage and the like, but these were disregarded, and the head gradually assumed a position of contraction, with the face drawn to the right. In spite of the patient's present contracted wry-neck he expressed himself as feeling that his condition was vastly better than it was before the operation.

Appropriate after-treatment, by confinement of the head, massage, etc., should receive careful attention. The speaker could but think that if such measures had been conscientiously carried out in the present case, deformity would have been much less.

Dr. R. W. Amidon thought Dr. Powers had been too modest, in that he had not called attention to the marked improvement in the patient's right arm. Before the operation this had been practically powerless, while now its functions were restored. The position of the head was now similar to that before the operation, but the spasm was now tonic instead of clonic, and therefore much more endurable. There was now no elevation of the chin which was conclusive proof that none of the muscles originating or inserted in the occipital bone were now implicated. The elevation of the right shoulder was now much more marked, and there was no doubt that the levator anguli scapulæ entered largely into the production of the deformity.

Dr. C. L. Dana thought the muscles of the right side, which were cut, had possibly entered into the production of spasm, but that the nerve force was now distributed through fewer channels, and perhaps this was the reason that the spasm was now tonic. The question was, at any rate, of extreme interest, because heretofore there had been much scepticism as to the value of operation for wry-neck. He thought that the experience of American observers was that operation on the spinal accessory had been uniformly fruitless, but the relief obtained, where the upper cervical nerves were involved, had given a more favorable showing. With better technique perhaps more favorable results would come in the case of the spinal accessory. He did not doubt but that the condition under consideration was the result of a central nervous lesion. Why surgical treatment should cure he did not know unless it was the result of the operation, *per se*.

Dr. M. A. Starr had seen these cases treated by division of the spinal accessory. No improvement had followed. He had therefore hesitated to recommend such procedure. He thought it had yet to be demonstrated that the condition was one of cerebral origin, as there was nothing analogous to wry-neck in the form of cerebral spasm of any other muscle. A patient had come to him last February with an extremely pronounced case of wry-neck. This patient had noticed that pressure on the right side of the occiput, high up, would relieve the spasm. An apparatus was accordingly constructed which, being constantly worn, enabled him at the onset of the spasm to bring the necessary pressure to the required spot by means of a system of levers worked by his arm. The speaker had that day seen the patient, and had found him apparently perfectly cured and able to leave off the apparatus.

Dr. W. M. Leszynsky thought that there was a lack of such pathological knowledge of the disease as would indicate that there existed a central lesion. It was remarkable that so few microscopical examinations had been so far made of nerves which had been resected. In the present case they had not been offered any explanation as to the cause of the arm symptom, and whether it was supposed to have borne any relation to the spasm in the neck. He had been interested in a few cases of spasmodic wry-neck, and felt confident that the hypodermic injection of atropine had helped them. He had reported such a case in which the spinal accessory was implicated, and he had felt that the benefit done was the result of the atropine. He thought that this measure should be energetically tried as part of a treatment by drugs before surgery was resorted to.

Dr. J. M. Morton cited the history of a patient who had come to him with a well-marked case of spasmodic wry-neck of long standing. Every effort had been made therapeutically. He had tried suspension. The seances had numbered about five, each lasting about five or six minutes, the patient's toes being just free of or barely touching the floor. Improvement had been prompt and had continued to a cure which had been maintained up to the last report.

The President had never seen any good results from operative work in these cases. While out of a large number operated upon for him by different surgeons, temporary improvement had taken place in some, relapse had ultimately occurred. He had obtained more satisfactory results by deep injections of atropine than from any other form of treatment, though he had found the internal administration of belladonna effective. As to the permanancy of the atropine benefit he could not speak, the patient having passed from observation. Temporary results were worthless for deduction and relapses were probable at any time.

ALLEGED CEREBRAL TUMOR.

Dr. Leszynsky showed a patient whom he had presented to the Society three years ago; at that time the diagnosis was made of cerebral tumor. The symptoms had then been frontal headache, vomiting and double optic neuritis. Now this man was in perfect health, and since treatment had never lost a day's work from illness. There was atrophy in both optic nerves. Vision was in one eye, $\frac{20}{30}$; in the other, $\frac{20}{40}$. There was no disturbance in the color field. The treatment during the acute stage had been by large doses of iodide of potassium with leaches and cathartics when the inflammation was excessive.

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THE BACILLUS COLI COMMUNIS.

In a presidential address before the Medical and Chirurgical Faculty of Maryland,[1] on November 17th, Dr. W. H. Welch gave an outline of his recent study of this bacillus. The differences between the bacillus coli communis and the typhoid bacillus are briefly as follows:

The typhoid bacillus is actively motile, the colon bacillus only feebly motile; the typhoid bacillus never coagulates milk, the colon bacillus coagulates it in two to seven days; the typhoid bacillus does not cause fermentation of lactose, or if at all, only in very feeble degree, while the colon bacillus actively ferments lactose. There are also differences in the appearances of the growth of the two bacilli on gelatin, agar and potato, but these are less precise and constant than the points mentioned.

The author's investigations have proved that lesions of the mucous membrane of the intestine open the way for the invasion of the colon bacillus into the blood and lymphatic vessels, and thence into various organs and parts of the body. They were found with especial frequency in the lungs and kidneys, but often also in the liver, mesenteric glands, and spleen. In a number of cases colon bacilli were demonstrated by culture methods in various organs of the body without any noteworthy lesions of the organs containing them or any lesion that could reasonably be referred to their presence. There is, therefore, no evidence that in these cases the bacilli do any harm, although it cannot be positively stated that their presence is innocuous. It is well known that human blood-serum outside of the body exerts a powerful germicidal influence upon the colon bacillus.

The author has suspected that the colon bacillus may be the cause of lobular pneumonia, as in several cases this organism has been found in large number and in pure culture in congested, œdematous, and inflamed areas in the lungs. It has also been frequently associated with fatty degeneration of the kidneys, but neither in this nor in the pulmonary affection is there any conclusive evidence that the presence of the bacilli has done the harm.

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[1] Medical News, December 12, 1891.

In cases of peritonitis due to perforation of the intestine the colon bacillus is usually found, but not always, in large number in the exudate, sometimes in pure culture. It is a mistake, however, to say, as Malvoz has recently done, that all cases of peritonitis due to intestinal lesion are referable to the colon bacillus. Often enough in this class of cases the staphylococcus pyogenes aureus or the streptococcus pyogenes is present — it may be predominantly so — in the peritoneum.

Typhoid ulceration of the intestine opens the way for the invasion of the colon bacillus, which may be found in different organs, mixed with the typhoid bacillus. On account of the resemblance between these two species of bacilli a mistake has probably often been made in identifying the colon with the typhoid bacillus. The preservation of all its properties in these cases shows that the colon bacillus is not changed into the typhoid bacillus when it invades the organs in typhoid fever.

Only in two cases has the author found the colon bacillus in organs outside of the intestine without any demonstrated lesion of the alimentary canal. Although careful search was made, it is not improbable that some lesion was present.

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REPORT OF THE SURGEON-GENERAL OF THE ARMY FOR THE YEAR ENDING JUNE 30, 1891.

THE army is coming nearer to our daily lives in the effort of the General Government to bring the regular army and the militia into closer relationship. A community of interest between the citizen soldier and the regular is more and more apparent. There has always been a community of interest between the civilian physician and his brother in the army. Educated in the same schools and trained in the same hospitals, the fact that one wears a uniform while on duty does not separate them any more than the same distance would do were they both civilians.

The variety of hygienic and scientific problems that the military surgeon is engaged upon at the present time is as great as that which interests his military brother of the line or his medical brother in civil life, and the Surgeon-General's Report gives some idea of the multifarious duties and almost universal knowledge required of the army surgeon.

The closer relationship which is being fostered between the army and the State Militia is well illustrated in its medical aspects. During the year included in the report, medical officers accompanied detachments of United States troops which were encamped with the militia of Pennsylvania, Iowa and Michigan. The extracts from their reports are extremely instructive as army surgeons prove keen critics of the shortcomings of their militia brethren, while very ready to recognize merit. It is evident that the vicious custom of allowing colonels to appoint their own surgeons without examination is still preserved in some States. This custom was the source of great evil in the early days of the Rebellion, and ought not to be tolerated in any force which is liable to be called upon for active service. The regular medical officers used their opportunities to impress upon the medical officers of the National Guard, with whom they were brought in contact, the importance of their position and the fact that their duties have a much wider range than mere prescribing for such individual disorders as may by chance present themselves. The work of the hospital corps and company bearers was demonstrated. In general, it may be said that the presence of an army surgeon at a State encampment may evidently be a powerful stimulant, not merely to the medical force present, but more or less directly to the entire militia force of the State.

Some of the most interesting material in the report refers to the hospital corps, which had an opportunity to demonstrate its value in active service in the Sioux Campaign. Of it the Surgeon-General writes: "On the battlefield at the action on Wounded Knee Creek two of its members rescued a wounded officer from extreme peril under circumstances which fully entitled them to the certificate of merit which they received as their reward, while the services the remainder rendered were so orderly and well regulated that not only our own wounded men, but wounded Indians were, with great promptness and dispatch, removed and cared for in the field hospitals which were extemporized for their benefit."

These wounded Indians, by the way, were not exactly comfortable patients. The simplest handling was met at first with suspicion and resistance. Their wounds were mostly severe and all capital operations were refused, notwithstanding explanations by missionaries, intrepreters and friends. In cases of extensive injuries to the large bones or joints, septic fever came sooner or later and finally death.

The many references to the hospital corps by different officers under different headings show the great interest felt in this organization and the enthusiastic work which is steadily applied to it. To bring it nearer perfection, companies of instruction are in process of organization at three different forts. Each company is to be fully instructed in first aid to the wounded, management of field hospitals, cookery and such other matters as are necessary to secure the highest state of efficiency for field service.

Col. Joseph R. Smith, medical director of the department of Arizona, suggests that drunkards should be at once dishonorably discharged from the hospital corps and the attempt to discipline them abandoned. This suggestion, which will meet the hearty approval of hospital executive officers everywhere, is in accord with the system of summarily discharging men found, on trial, to be worthless or incorrigable; a system recently adopted in the army and which has proved of great benefit to the service.

Another scheme to prevent the enlistment of men of bad character who have previously deserted or been discharged, is worthy of much greater space than is devoted to it in the report. This is the record on cards of the personal markings of every recruit, that is, the congenital marks, scars, tatooings and other peculiarities. This system differs from the Bertillon system of identifying criminals in that no measurements are used, the record being confined to the surface markings, which are recorded on uniform charts furnished for the purpose. These charts or cards are filed in Washington, where they are kept for consultation. Although this system of records was only begun in April, 1889, thirty-four recruits have since then been recognized as deserters, twenty-six as ex-convicts and sixteen as frauds of a minor grade. It is expected that in process of time this system will be so perfect that it will be impossible for so-called "repeaters" to escape detection.

The "repeater" of to-day was the "bounty-jumper" of the war; and this elaborate system of identification recalls the act of a Boston physician, who, while acting in the capacity of an examiner of recruits, marked one man whom he recognized, with a D with nitrate of silver, in order to attract the attention of any other examiner, and prevent further fraud on the part of the recruit. This act of patriotic intention was the basis of a suit in which the physician was charged with assault or some similar infringement of the personal rights of the bounty-jumper whose trade was temporarily spoiled by the deserter's mark; and another Boston physician, while on the stand as a witness for the defence, boldly marked his bared forearm with silver nitrate to demonstrate to the jury the slight character of the offence.

It is perhaps an open question whether any system of identification would be adequate to the prevention of fraud when recruiting was going on as rapidly as during the Rebellion. Even now the proper indexing of this card-catalogue of humanity must be quite a problem, though no difficulty is mentioned in the report.

There are many other matters of interest in the report; but enough has been said to show that an army surgeon has many interests outside of the study of individual cases of disease and injury.

THE ASSOCIATION OF MILITARY SURGEONS OF THE NATIONAL GUARD.

A preliminary notice of the second annual meeting of the Association of Military Surgeons of the National Guard of the United States has already been sent out. The meeting is to take place in St. Louis on April 19, 20 and 21, 1892. The object of this Association, as given in the preamble to its constitution, is to promote and better the science of military surgery, and at the forthcoming meeting "all matters pertaining to the health, usefulness and welfare of the civilian soldiers will receive attention." The afternoon of one day will be set apart for an object-lesson from the "Manual of Drill," by hospital corps of the United States Army, detailed for this purpose. The announcement speaks of this drill as "a very important, as well as instructive, feature of this session." It is but another means of affiliating the medical corps of the army and of the National Guard.

If this Association can accomplish the objects for which it is established, it deserves the support, not of militia surgeons alone, but of the profession at large. The army medical standard, as well as that of other government establishments, has always been particularly high, and its influence has been to raise the grade of professional attainments in a country where there has been an unfortunate tendency to lower the standard. On the other hand, in the militia in general the standard has been low. This is a sweeping statement which has numerous brilliant exceptions. If this Association will change all this, and raise the militia standard until a commission is in all the States an evidence of professional attainments, it will do indirectly for the benefit of the profession at large nearly as much as it accomplishes for the militia.

MEDICAL NOTES.

A New Hospital in California.— By the will of the late Mrs. Catherine Garcelon, of Oakland, Cal., the sum of about $600,000 is bequeathed to found a hospital in Oakland. Bowdoin College is to receive about $400,000.

Influenza. — During the past week, the epidemic of influenza has shown no signs of abating, either in this country or in Europe. Beside the countries of northern Europe, the northern part of Italy is suffering severely, especially the cities of Milan and Genoa. It is announced by cable from Berlin that the method of propagation of the specific organism of the disease has been discovered.

The Contagiousness of Influenza. — It is reported by cable that the health authorities of Dover, in England, have accepted the contagiousness of influenza as a fact, and have arrested and fined a number of persons who are suffering from the disease, for frequenting public places while suffering from a contagious disease, in violation of law.

Relief for Russia. — The Governor of Massachusetts has issued an official appeal for contributions in aid of the sufferers from the famine in Russia, in which he says, that official statements show that there is a deficiency of seventy-five million bushels in the grain needed up to the time of the next harvest. Unless help comes speedily, extreme suffering and many deaths by starvation must ensue. The Federal Government and three States have already issued appeals. The Governor has appointed as a committee to take charge of the contributions, Rt. Rev. Phillips Brooks, Rev. Edward Everett Hale, O. W. Peabody, William Lloyd Garrison and Josiah Quincy.

Cholera among Sharks.— A report comes from Bombay that an epidemic of cholera has broken out among shoals of sharks that infest the Indian Ocean. The bodies of seventeen British seamen, who had died of cholera in the harbor of Bombay, on the hospital ship, were sewn up in canvas, taken out to sea, and "buried." It is believed that a shoal of sharks feasted upon the remains of these victims of cholera, and thus became infected.

NEW ENGLAND.

The Mortality of Boston was higher last week than it has been since January, 1890. The number of deaths was 313, making a death-rate of 36 per thousand. Among the causes of death were pneumonia 85, consumption 36, bronchitis 30. Thirty-three were stated as due to influenza, of which 24 were complicated with some other disease. The number of persons who were over sixty years of age was 109.

Boston City Hospital. — The following order was recently passed by the Boston Common Council: "That the Board of Trustees of the City Hospital, through His Honor the Mayor, be requested to consider the advisability of establishing a branch of the City Hospital in Brighton District and also one in East Boston or Charlestown, and report to the next City Council the result of their deliberation."

The Massachusetts School for Idiotic and Feeble-minded Youth, which for over forty years has been situated in South Boston, has been lately transferred to its very convenient new buildings in Waltham, near the Clematis Brook station of the Fitchburg Railroad. The school is the oldest of its kind in America. It was opened in 1848 with three private pupils and ten State charges. During the past year it cared for about three hundred, a large number of whom were beneficiaries of the State.

NEW YORK.

A New Site for Columbia College. — As Columbia College is considerably cramped for room in its present location, it is probable that another site will be selected for it, and a committee has been authorized by the trustees to secure from the New York Hospital a six months' option on a portion of land now occupied by the Bloomingdale Asylum, the department for the insane of the hospital, which is shortly to be removed to White Plains.

The Board of Health.— The Board of Estimate and Apportionment has allowed the sum of $435,138 for the expenses of the Board of Health during the coming year; which is about $15,000 more than was allowed last year. Among the items is $30,000 for enlarging the Reception Hospital at the foot of East 16th Street. The Commissioners of Charities and Correction asked for an appropriation of $2,877,245, but the amount allowed was $2,171,383.

The Presbyterian Hospital.— The new buildings of the Presbyterian Hospital were formally opened with a reception to invited guests, on the 19th of December. They are eight in number, some of them standing on the site of the pavilions destroyed by fire in December, 1889, and are built of brick, trimmed with brown-stone, terra-cotta, and blue-stone. They include a medical pavilion, two surgical pavilions, an isolated pavilion for infectious diseases, a dispensary and an operating theatre, and the entire cost has been over $875,000. The two principal pavilions, which are five stories in height, have been built with flat roofs, in order to provide a roof-garden and solarium for the patients.

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Miscellany.

THE NON-CONTAGIOUSNESS OF LEPROSY.

At a meeting of the New York County Medical Association held December 21st, Dr. L. Duncan Bulkley read a paper on "The Non-Contagiousness of Leprosy," in which he gave the following as his conclusions:

(1) Leprosy is not in any proper sense of the word a contagious disease.

(2) There is not the slightest warrant for public alarm concerning cases of leprosy.

(3) It is not due to climatic or race conditions.

(4) It originates from a bacillus.

(5) There is reason to believe that under certain conditions it can be inoculated.

(6) There is considerable ground for the opinion that it is frequently caused by food and especially fish.

(7) Heredity is a possible factor in its causation.

(8) There is far greater warrant for the seclusion and regulation of syphilis and tuberculosis than of leprosy.

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NEW REGULATIONS OF THE NEW YORK COMMISSION IN LUNACY.

At a meeting of the State Commission in Lunacy held at Albany, December 5th, a number of regulations were adopted, among which are the following:

That no license will hereafter be granted to operate and maintain an institution for the care, custody or treatment of the insane, unless such institution shall be constantly in charge of a well educated resident physician, who shall possess the following qualifications: He must be a graduate of a legally incorporated medical college, and must have had at least five years' actual experience in an institution for the care and treatment of the insane. In existing institutions this order will in all future appointments be held to apply.

That hereafter the approval of the Commission in writing will be required upon the appointment of all assistant physicians in licensed institutions for the care, custody or treatment of the insane. In existing institutions this order will in all future appointments be held to apply.

That no voluntary patient shall be admitted to a licensed institution for the care, custody or treatment of the insane permitted to receive voluntary as well as committed patients, whose mind is so impaired as to render him incapable of forming a rational judgment as to the disposition of his person, or whose will is so weak as to render him incapable of resisting undue influence. (A special form of application, to be accompanied by the certificates of two suitable witnesses, is to be signed by all voluntary patients seeking admission to such institutions.)

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OBITUARY. — BUCKMINSTER BROWN, M.D.

In the death of Dr. Buckminster Brown, this community has lost a man of more than ordinary professional achievement, who held for many years a position of well-earned distinction. To have attained to prominence in the profession of medicine, is in itself a success, but to have succeeded in the race of life, hampered by physical infirmity which would have hindered the work of any one except a person of unusual character, is indicative of great determination, high purpose, and unusual energy of spirit.

Dr. Brown was born in Boston, July 13, 1819. With excellent educational advantages here and abroad, inheriting a place, as it were, in the profession, he enlarged his opportunities and made for himself a name which was known beyond the confines of the community in which he lived. His life and career were necessarily very much apart from the ordinary run of the bustling life of an active city, and it is chiefly to men of his specialty that the true value of his work is fully known. Supplementing his father's initial efforts, Dr. Buckminster Brown was the first to develop in America orthopedic surgery as a specialty; and by him the methods in vogue in England at that time, were carried out with a completeness, a thoroughness, a mastery of detail, a persistency of purpose, which deserved and won unusual success.

At a time when many men were diverted to more brilliant fields of surgery, Dr. Brown persistently carried out the painstaking and thorough methods needed in curing long-continued chronic affections and no case that he attempted suffered from the lack of great perseverance on the part of the attending surgeon.

In his later years his activity was limited by increasing infirmities, but he won, in what may be considered his old age, at a time when most are glad to lay down responsible effort, a triumph which adds reputation not only to his own name but to that of his city, in a cure of a case of double congenital dislocation of the hip-joint, by long and persistent treatment by traction and recumbency. This case demanded for its success not only unusual powers as a practitioner, (and these Dr. Brown possessed to a more than ordinary extent,) but also great persistency, originality of thought, and an amount of courage of conviction which is not ordinarily demanded in everyday surgery. The case is a unique one, and in all probability will remain for some time one to be quoted and admired as a model and an example of success by an unusual method of treatment of a hitherto incurable affection.

Dr. Brown's contributions to medical literature were always carefully considered. He was not a voluminous writer, and the list of his writings is not a large one; but whatever was written was most carefully and thoroughly done, and in a careful, scholarly spirit. He represented the English school of orthopedic surgery, and the excellent qualities of that school at its most active and productive period. Although he did not care to consider himself a specialist, yet his work was almost entirely special, and his career emphasizes the benefit of specialization and special work. In fact, he was one of the first of specialists in point of time; but his attention was also called to work outside of his specialty; and a case which illustrates this is the cure of an iliac aneurism by pressure which was used while the patient walked about. The result was demonstrated by an autopsy which occurred several years later, and was reported by Dr. Beach of this city.[1] The case is one that deserves especial mention in the history of the treatment of aneurism.

Besides his remarkable case of congenital dislocation, Dr. Brown's most brilliant success was in the treatment of club-foot, which, considering the methods which were then in vogue, is a monument to thoroughness, persistency and faithfulness.

Valuable articles were also written by Dr. Brown, on the correction of the deformity and contraction of the hip-joint and extension in the treatment of diseased vertebræ.[2] Whatever Dr. Brown wrote is of value, either as evidence of current surgical practice of the time or as of permanent interest in the annals of orthopedic surgery, a specialty he did so much to advance.

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THERAPEUTIC NOTES.

The Treatment of Pneumonia.[1] — The *Semaine Médicale* summarizes the modes of treatment of several physicians of Paris. Professor Bouchard considers acute pneumonia as a local malady, caused by a micro-organism whose seat is in the pulmonary tissue. As to treatment, he has not yet commenced his researches, but he hopes to be able to find a specific for the pneumococcus. Professor Cornil said that as *chef de clinique* of Bouillaud, he gave two bleedings at the beginning of the malady, but the result was neither less or more successful then than now. He gave as his own treatment scarifications followed by a blister and the administration of an alcoholic potion, with Dover's powder. M. Chauffard was convinced that no remedy has been discovered which would neutralize the toxic of the pneumococcus nor abridge the vitality of the pathogenic agent. M. Dujardin thought that the state of the heart in pneumonia was the chief consideration, consequently he treats the disease, especially in alcoholic subjects, with injections of *caffeine.* He prefers the preparations of kola, or that of coffee or tea to those of alcohol. To calm the nervous manifestations he prescribes chloral, but he never gives opium. As to blisters, he employs them only when the fever has abated. Professor Peter treats the robust by scarifications *loco dolenti*, and the weak and aged by alcoholic stimulants. M. Bucquoy considered sulphate of quinine as very useful in most cases, and prescribed alcohol in pneumonia of the summit and in the aged. M. Muselier follows the same method, but rejects completely blisters. Professor Jaccoud treats specially symptoms. Dr. Huchard recommends injections of caffeine combined with ether, from four to eight injections daily, representing eight grains of caffeine, as he considers the danger to be at the heart.

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[1] Boston Medical and Surgical Journal, October 21, 1875.

[1] Medical Press, November 25th.

[2] Boston Medical and Surgical Journal, 1881, and July 1884.

METEOROLOGICAL RECORD,

For the week ending December 19, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...13	30.01	46	55	37	50	51	50	S.W.	W.	15	10	C.	C.	
M..14	30.12	46	53	40	69	41	55	W.	N.	9	13	O.	O.	
T..15	29.59	34	39	29	84	100	92	E.	E.	15	6	S.	R.	.15
W. 16	29.42	39	45	33	96	57	76	N.W.	W.	10	18	R.	C.	.26
T..17	30.00	16	22	11	53	61	57	W.	N.W.	20	22	C.	C.	
F..18	30.42	23	34	12	68	47	58	W.	W.	13	12	C.	C.	
S..19	30.32	34	42	25	57	64	60	W.	N.W.	9	10	C.	C.	
☞	29.99	34	41	26	68	47	64			13	13			.06

* O., cloudy; C., clear; F., fair; O., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 19, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	800	273	19.63	23.79	4.29	.65	7.15
Chicago . . .	1,099,850	520	230	17.67	17.67	1.90	6.46	4.56
Philadelphia .	1,046,964	625	179	11.36	16.96	2.24	.48	9.60
Brooklyn . .	806,343	391	140	14.50	25.00	2.25	.75	9.06
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	230	62	12.47	21.21	1.72	1.72	6.88
Baltimore . .	434,439	233	80	13.76	17.92	3.87	.86	6.02
Cincinnati . .	296,908	211	59	14.10	19.27	2.35	2.35	8.93
Cleveland . .	262,000	87	39	16.66	15.47	—	3.57	11.90
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	94	45	39.22	2.12	3.18	2.12	24.38
Milwaukee . .	240,000	82	50	25.83	13.53	1.23	3.69	14.76
Washington .	230,392	123	—	11.34	17.01	—	3.24	2.43
Nashville . .	76,168	55	16	10.92	23.66	—	—	1.62
Charleston . .	65,165	42	15	14.28	4.76	—	—	—
Portland . . .	36,425	12	2	—	—	—	—	—
Worcester . .	84,655	34	9	14.70	26.46	5.88	—	—
Lowell . . .	77,696	21	6	19.04	9.52	—	4.76	—
Fall River . .	74,398	33	11	3.03	18.18	—	3.03	—
Cambridge . .	70,028	22	6	22.75	13.65	—	4.55	—
Lynn	55,727	12	3	—	16.66	—	—	—
Lawrence . .	44,654	36	12	8.34	22.24	2.78	—	5.56
Springfield . .	44,179	19	2	15.78	26.30	5.26	5.26	—
New Bedford .	40,733	28	7	—	17.85	—	—	—
Salem	30,801	10	2	—	10.00	—	—	—
Chelsea . . .	27,909	12	3	—	16.66	—	—	—
Haverhill . .	27,412	14	2	—	—	—	—	—
Taunton . . .	25,445	11	5	—	9.09	—	—	—
Gloucester . .	24,651	11	3	9.09	27.27	—	—	9.09
Newton . . .	24,379	9	1	22.22	33.33	—	—	11.11
Malden . . .	23,031	11	1	36.36	9.09	—	—	18.88
Fitchburg . .	22,037	5	1	—	20.00	—	—	—
Waltham . .	18,707	8	1	—	12.50	—	—	—
Pittsfield . .	17,281	—	—	—	—	—	—	—
Quincy . . .	16,723	2	1	—	—	—	—	—
Newburyport .	13,947	4	0	—	—	—	—	—
Medford . . .	11,079	—	—	—	—	—	—	—
Clinton . . .	10,424	—	—	—	—	—	—	—
Hyde Park . .	10,193	—	—	—	—	—	—	—
Peabody . . .	10,158	0	0	—	—	—	—	—

Deaths reported 3810: under five years of age, 1266; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 605, acute lung diseases 736, consumption 372, diphtheria and croup 283, scarlet fever 92, typhoid fever 71, diarrhœal diseases 71, measles 21, whooping-cough 18, cerebro-spinal meningitis 17, erysipelas 14, malarial fever 8.

From diarrhœal diseases Chicago 18, New York 16, Baltimore and Charleston 6 each, Philadelphia, Pittsburgh and Washington 4 each, Brooklyn, Boston, Nashville and Malden 2 each, Milwaukee, Lowell, Cambridge, Springfield and Newton 1 each. From measles New York 17, Brooklyn 2, Cincinnati and Pittsburgh 1 each. From whooping-cough New York 4, Philadelphia 3, Boston, Pittsburgh and Washington 2 each, Brooklyn, Baltimore, Milwaukee, Nashville and Lowell 1 each. From cerebro-spinal meningitis New York 4, Chicago and Worcester 3 each, Milwaukee 2, Philadelphia, Brooklyn, Washington, Nashville and Chelsea 1 each. From erysipelas New and Chicago 4 each, Pittsburgh 2, Brooklyn, Boston, Milwaukee and Cambridge 1 each. From malarial fever New York and Brooklyn 3 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending December 12th, the death-rate was 19.8. Deaths reported 3,580: acute diseases of the respiratory organs (London) 348, whooping-cough 116, measles 92, fever 55, diphtheria 49, diarrhœa 48, scarlet fever 42.

The death-rates ranged from 12.4 in Norwich to 45.1 in Plymouth, Birmingham 18.8, Bradford 17.5, Hull 13.5, Leeds 20.6, Liverpool 25.0, London 18.1, Manchester 19.5, Nottingham 21.6, Sheffield 18.1.

In Edinburgh 45.4, Glasgow 26.3, Dublin 25.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 26, 1891, TO JANUARY 1, 1892.

CAPTAIN SAMUEL A. ROBINSON, assistant surgeon, U. S. A., granted leave of absence for twenty days to take effect on or about January 2, 1892.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — The annual meeting of the Society will be held on Monday, January 11, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. C. P. Strong: "The Relief of Salpingitis by Drainage of the Uterus."

Dr. G. Haven: "Three Cases of Craniotomy," done for different reasons, during the month of September, at the Boston Lying-in Hospital. Election of officers.

G. G. SEARS, M.D., *Secretary.*

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT, SECTION IN OBSTETRICS AND GYNECOLOGY. — A regular meeting will be held at 19 Boylston Palce, on Wednesday, January 13, 1892, at 8 o'clock P. M.

There will be a discussion on "The Pathology, Diagnosis and Treatment of Pelvic Inflammations," which will be opened by Drs. Fitz, Chadwick, Davenport and Cabot.

N. B. — Members of Suffolk District who wish to receive notifications of the meetings of this Section will kindly inform the Secretary to that effect.

GEORGE HAVEN, M.D., *Secretary*, 92 A, PINCKNEY ST.

THE SECOND INTERNATIONAL CONGRESS ON DERMATOLOGY will be held in Vienna from September 5th to 10th, 1892. In connection with the Congress there will be an exhibition of all objects connected with the pathology and therapy of diseases of the skin.

PROF. M. KAPOSI, *President.*

DR. G. RIEHL, *General Secretary.*

RECENT DEATHS.

HENRY O. MAYO, M.D., Captain and Medical Director, United States Navy, retired, died in New York, January 1st, aged seventy-two. He was appointed assistant surgeon in 1846, surgeon in 1859, medical director in 1872, and placed on the retired list in 1875, since which year he has lived in New York.

JAMES AYER, M.D., M.M.S.S., died in Boston, December 31st, aged seventy-six. Dr. Ayer graduated from Bowdoin College in 1834, and from the Bowdoin Medical School in 1839. He came to Boston in 1846. Among the institutions in which he was specially interested were the Discharged Soldiers' Home and the Lying-in Hospital, of which he was a trustee for many years.

ALFRED RICHET, M.D., of Paris, who has been surgeon in the hospitals of Lourcine, St. Antoine, St. Louis and La Pitié, a member of the Academy of Medicine and of the Legion of Honor, died December 31st, aged seventy-five.

BOOKS AND PAMPHLETS RECEIVED.

The Columbia Daily Calendar for 1892. Pope M'f'g Co.

Eighteenth Annual Report of the Maternity Hospital, Philadelphia. 1891.

The Application of Sacral Resection to Gynecological Work. By E. E. Montgomery, M.D., Philadelphia. Reprint. 1891.

A Hint to the Literary Men of the Profession. By Charles Perry Fisher, Librarian of the College of Physicians, of Philadelphia.

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy. Washington: Government Printing Office. 1891.

The Modern Treatment of Hip-Disease. By C. F. Stillman, M.D., late Professor of Orthopedic Surgery in the Chicago Polyclinic. Detroit: George S. Davis. 1891.

The Anatomical and Histological Dissection of the Human Ear, in the Normal and Diseased Condition. By Dr. Adam Politzer. Translated by George Stone. London: Baillière, Tindall & Cox. 1892.

Scope of Orthopedics; The Forms of Club-foot; Tenotomy. The Etiology of Club-foot; The Treatment of Club-foot; The Plaster-of-Paris Bandage. Two Lectures by H. Augustus Wilson, M.D. Reprint. 1891.

Paranoia. A Study of Some of the More Prominent Types, with Contribution of Three Cases. By William P. Spratling, M.D., First Assistant Physician, New Jersey State Asylum for Insane, etc. Reprint. 1891.

The Improvement of Evacuators for Litholapaxy and the Later Developments of the Operation. By Otis K. Newell, M.D., Surgeon to Out-patients at the Massachusetts General Hospital, Boston, Mass. Reprint. 1891.

The Hydriatic Treatment of Typhoid Fever according to Brand, Tripier and Bouveret, and Vogl. By Charles Sihler, M.D., Ph.D., Professor of Histology in the Medical Department, Western Reserve University. Cleveland: C. Sihler. 1892.

Original Articles.

A BACTERIOLOGICAL EXAMINATION OF THE BOSTON MILK-SUPPLY.

BY W. T. SEDGWICK AND JOHN L. BATCHELDER, JR.,
Massachusetts Institute of Technology, Boston.

It is well known that milk, especially as it is found in large cities, is usually swarming with living bacteria. Most of these are probably harmless vegetables, nevertheless they constitute a host of organisms entirely foreign to the milk itself. The so-called "pure" milk ordinarily obtained in Boston, even when it has not been tampered with, frequently contains in a teaspoonful millions of these microscopic vegetables luxuriantly thriving in a soil most favorable for their development. Moreover, although themselves invisible, they do not fail to produce obvious effects. The souring and chemical decomposition of the milk which soon appear are due exclusively to their vital activity, and the milk which was originally sweet, and which in their absence remains forever sweet, becomes, owing to their activity, sour and chemically decomposed. In this condition it has important uses, but it is no longer "fresh" or "sweet" or "normal" milk. Under the worst conditions milk may actually be delivered to the consumer nearly or quite sour; and we have ascertained that in Boston it is regularly and systematically delivered to the great majority of consumers comparatively well advanced towards this condition.

It is with this aspect of the subject only that we shall deal in the present paper. We shall show, in the first place, that the normal milk of the cow contains no ordinary putrefactive bacteria; we shall next discover the source of the swarms of bacteria which infest ordinary city milk; we shall then briefly consider the bearing of these phenomena upon the public health, and the possibility of remedying the present conditions.

It will be observed that we are not now dealing with the specific germs of disease. It is well known that milk is an excellent food for many kinds of bacteria, and this, added to the fact that it is one of the cheapest and most trusted of food-stuffs, makes milk, when infected with pathogenic organisms, a peculiarly dangerous vehicle for the transmission of infectious diseases. Cow's milk, when once infected with the specific organisms of disease is probably a medium far more dangerous than an equal volume of infected water, since, for many bacteria, it is a much more favorable soil. With this aspect of the subject, however, we shall in this paper have nothing to do. We desire simply to show how far the milk in Boston regularly differs in bacteria from the normal; and to discover the causes of this difference. The methods employed for this more general inquiry have not been adapted, or intended, for the discovery of the exceptional cases of contamination of the milk with the specific germs of such diseases as tuberculosis or typhoid fever.

Chemical examinations, both official and unofficial, of the milk-supply of Boston have been, and continue to be, repeatedly made, but no systematic and extensive bacteriological examination has hitherto been reported. It appeared to us therefore, highly important, at least from the scientific standpoint, to inquire what information might be gained by a series of bacteriological examinations systematically conducted. To this end, during the past two years, we have made many hundreds of examinations of Boston milk, of which the principal results are here published for the first time.[1]

In order to discover the bacteriological changes which milk undergoes in its journey from the cow to the consumer we have made a series of examinations of milk as it flows from the cow; of milk as it is carried from the stable; of milk as it is found upon the tables of well-to-do country families; of milk as it arrives in Boston; of milk as it is sold from wagons, in groceries, etc.; and finally, of milk as it exists upon the tables of well-to-do city families. The main object throughout was to discover the source and significance of the bacterial swarms which infest city milk. To this end our experiments began with the cow.

I. NORMAL (UDDER) MILK.

That milk must be regarded as *normal* which is drawn from the teat of a healthy cow. In such normal, or udder, milk, we have found no trace whatever of bacteria. The same result has been obtained by some previous observers, while others have found it difficult or impossible to obtain milk from the cow free from all germs. All observers, however, agree that very few, if any, organisms are present in normal cow's milk, and that the germs sometimes observed have probably been due to defective manipulation. Without special precautions, we, also, have found it extremely difficult to draw milk from the cow's udder *entirely* germ-free, and at first we failed to get it absolutely sterile. By a special method, however, we have succeeded in drawing, with ease, from the cow's udder, absolutely sterile milk. From this fact and the similar observations of others, there need be no question that the normal milk of the cow is free from bacteria. A consideration of the mechanism and physiology of secretion will show that this, for the healthy cow, is entirely reasonable. Normal cows secrete milk; they do not secrete bacteria.

A method by which this fact can be easily established deserves description. If one seeks to draw normal milk, germ-free, by hand, and milks in the ordinary way, into a sterilized bottle, he will usually fail to obtain sterile milk. The reason appears to be that the act of milking shakes the udder and throws down from the skin of the animal a shower of dust and germs which pass into the bottle with the milk. By the use of the silver catheter or so-called "milking-tube" of veterinarians, however, this disturbance is completely avoided. The milk flows, without action of any kind on the part of the observer, in a strong and steady stream, of which a portion may be easily caught by a merely instantaneous exposure to the air.

The precise method of procedure is as follows: A clean cow is selected and the operation should be attempted only in a clean stable. Care being taken to avoid disturbance of the bedding (if any) the skin of the hind quarter and of the udder are washed. The teats are then wiped dry and milking in the ordinary fashion is begun, in order to start the secretion. A pause is then made and while the dust of the stable settles, the milk accumulates in the udder. The catheter, previously sterilized by heat, is drawn from a plugged test tube and cautiously passed through one of the teats into the udder. The milk instantly flows away from the resting udder, through the catheter, in a strong and continuous stream, from which a series of samples can readily be taken. Many of these, in our experiments, proved, if planted at once, perfectly sterile. Others showed a very few colonies which were plainly due to aerial contamination.

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[1] An abstract of this paper was read by J. L. Batchelder, Jr., before the Boston Society of Medical Sciences, March 31, 1891.

We have not sought to determine the presence or absence of tubercle bacilli in normal milk, as this was foreign to our investigation. At the same time it is clear that this method might well be applied in such an investigation. The detection of tubercle bacilli in milk has hitherto depended, not on cultures, but upon the differential staining of cover-glass preparations, and upon the infection of guinea pigs with cow's milk. These experiments have sufficed to show the presence of such bacilli in the milk, but they do not tell us whether the bacilli have come from the udder or not. The mere detection of the germs of tuberculosis in cow's milk does not prove that these have proceeded from the cow's udder. They may have come from the dried saliva or excrement of the cow, and have fallen in during the act of milking. By the method just described, however, it might perhaps be found possible to obtain more valuable results, and even to make test cultures of diseased milk.

II. PURE COUNTRY MILK.

In the previous section we have shown that healthy cows give milk which, examined by the usual methods, is absolutely free from germs. It appears, therefore, that the normal milk of the cow is milk not only undecomposed, but free from the germs of decomposition. "Pure" milk may possibly be defined as milk which has not been watered. It is sometimes so defined. But normal milk cannot be defined in this way, and in the considerations which will follow the high standard of normal milk must be kept in view. Clearly, also, the cow is not the source of the hosts of bacteria regularly observed in Boston milk. We therefore turned to the examination of milk as it is found upon the tables of well-to-do country families; that is, to the study of unquestionably "pure," country milk. Such milk is generally comparatively fresh, and is often served only a few hours after the milking. Nevertheless our results show that such milk is generally rich in bacteria, though the numbers are much smaller than in ordinary city milk. We then made the following experiment: milk was drawn from a clean and well-kept Holstein cow in an unusually decent stable. The normal milk of this cow had already been repeatedly proved to be sterile. Milk drawn by hand from this cow with great care into sterilized bottles, and planted quickly, yielded, as an average of several trials, 530 bacteria per cubic centimetre. When, however, the milkman used the ordinary milk-pail of flaring form, seated himself with more or less disturbance of the bedding, and vigorously shook the udder over the pail during the usual process of milking, we found that the numbers were very much higher, namely, an average of 30,500 per cubic centimetre, at the end of the milking. When such milk is found upon the tables of country families a few hours later, it usually shows still more bacteria, doubtless because those with which it was seeded have had time to multiply. The average of fifteen such samples from the tables of families in Jamaica Plain, Cambridge and Auburndale was 69,143 per cubic centimetre. In these cases, moreover, the conditions of the cows and of the stables were exceptionally good, while the milkmen were much more than ordinarily clean and careful.

It follows from these results that there are two principal sources of the bacteria in milk; namely, contamination during the act of milking, and the natural multiplication of the bacteria thus introduced during the interval between milking and the consumption of the milk. The result of these investigations was to show that even under the most favorable conditions cow's milk as ordinarily drawn becomes, almost necessarily, infested with hosts of bacteria at the very outset. Under worse conditions, with unclean stables and dirty milkmen, to say nothing of half-cleaned pails and cans, it is easy to understand why milk swarms with bacteria: and, if we allow time also, the wonder is, not that it contains so many germs, but rather that it is still potable at all.

When we reflect upon the indescribably filthy condition of many cow stables; upon the fact that the cow's udders and flanks are not infrequently covered with flaking excrement; upon the quality of the men employed to do the milking, etc., etc., it becomes a simple matter to understand how this rich, animal fluid — sterile at the start, but drawn by unclean hands into half-cleaned pails, and meantime sprinkled from above by the dust of the stable, by hairs, dandruff, dirt and particles of excrement from the skin and udder of the cow vigorously shaken by the milker or brushed by his hat — becomes infested with organisms. That these multiply swiftly and enormously in the warm and rich fluid, well aerated by the act of milking, is also a natural consequence of favorable conditions.

III. BOSTON MILK.

If, now, we turn to the condition of city milk as exemplified by that delivered in Boston (and we have no reason to suppose that Boston is worse in this respect than many large cities) we find, as might be anticipated, a marked increase in the numbers of bacteria over those found in country milk. The average number of bacteria found in fifty-seven samples of Boston milk in the spring of 1890 was 2,355,500 per cubic centimetre (roughly equal to a cubic one-third inch or to one small thimbleful). These samples came from different parts of the city. Thus:

Charlestown,	8 samples averaged . . .	4,222,500	per c. c.
Jamaica Plain,	10 " " . . .	3,259,600	" "
Roxbury,	17 " " . . .	1,874,300	" "
South Boston,	9 " " . . .	2,778,000	" "
North End,	6 " " . . .	708,100	" "
Back Bay,	7 " " . . .	1,189,800	" "

These samples were obtained directly from the milk wagons and planted at once. We are indebted to Dr. Charles Harrington, Milk Inspector of Boston, for much courteous assistance in procuring these wagon samples.

From groceries we obtained sixteen more samples, in which the average number of bacteria was 4,577,000 per cubic centimetre. The groceries usually have older milk than that found in the wagons, which readily accounts for the higher numbers of bacteria.

Ten samples collected from well-to-do families upon the Back Bay showed an average of 1,438,000 per cubic centimetre. The lowest number found in Boston milk supplied in the ordinary way was 30,600 per cubic centimetre. With special care, however, milk can be, and is now in a few cases, regularly delivered in Boston with much greater freshness and purity than these figures indicate.

It will be seen at a glance that the milk-supply of Boston is very rich in bacteria. Much of the milk arrives from distant point by rail, and is therefore necessarily more or less stale. Forty-four samples of this so-called "railroad" milk from one dealer showed that the milk, even upon its arrival, contains on the average more than 500,000 bacteria per cubic centimetre. The extremes in this case were 5,664,000 and 2,200. In another set of ten samples the milk on its arrival in Boston averaged 371,000 per cubic centimetre.

Our experiments have been repeated in 1891, and the results prove that the figures for 1890 are not exceptional. There are some indications that, as might perhaps be expected, watered milk contains fewer bacteria than unadulterated milk. "Skim" milk, on the other hand, probably on account of its staleness, is sometimes very rich in organisms, though this is not always the case.

IV. INTERPRETATION OF THE RESULTS.

We have now shown that the normal milk of the cow is free from bacteria. We have also found that the milk-supply of Boston is exceedingly rich in bacteria. We have further discovered that these bacteria are principally introduced during the operation of milking in unclean stables, and that they afterwards multiply enormously in the milk, in which they effect important changes of decomposition. Two principal conditions thus co-operate to cause the extraordinary abundance of bacteria in Boston milk; namely, uncleanness and staleness. The former condition furnishes the seeds of decomposition; the latter the time for their development. Their co-operation produces a fluid widely different from normal cow's milk.

It remains to inquire what is the probable effect of this condition of the milk-supply upon the health of the community. Here we are almost completely in the dark. There can be no question that much of the milk is consumed when cooked, and even when raw without the least apparent injury and with great apparent benefit. But it is probably also true that the use of stale and partially decomposed milk charged with living bacteria, has its effects upon invalids and children, and particularly upon infants, and that these effects are not always beneficial. It is possible that one explanation of the high mortality of children under five years of age, and especially of bottle-fed children, is to be sought for in this direction.

It will not do to argue, because healthy adults drink polluted milk without obvious injury and with evident benefit, that invalids and infants may safely do the same. In order to learn the consequences of a battle, the investigator must examine not merely the survivors; he must consider also the fallen. If it be admitted than infants, children and invalids require normal cow's milk it cannot be denied that they are now rarely, if ever, fortunate enough to get it. Many parents who are fastidious to the last degree concerning their own wine or table-linen, provide for their children, cow's milk which is both stale and filthy. It is safe to say that if our soups or drinking-water were drawn from cows, in remote and obscure stables, by ordinary milkmen, and shipped, adulterated and delivered as our milk is, we should appreciate and resent the pollution. At present, however, so far as mere pollution is concerned, it is probably true that milk is actually improved by the addition of pure water. The public inspection of milk in America is usually directed mainly to the prevention of fraud; rarely, if ever, to the question of pollution, or except in a very general way, to the protection of the public health.

"One point deserves in the future much greater attention. This is the *pollution* of milk. No food material can be so much polluted as milk. If any one will compute how much cow's excrement an infant swallows, and how much excrement an adult consumes in drinking the sewage-polluted water of the Isar, he will find that the latter is by far the better off."

Dr. Sohlet, the author of the foregoing paragraph, has lately urged that milk be examined not only in respect to its solids and fats, but also as to its contents in filth, after a method employed by Professor Renk, of Halle. The latter found that the public milk-supply of Halle was polluted by very considerable amounts of filth which settled to the bottom of the vessel containing the milk, and by microscopical examination proved to be largely cow's excrement. The average of thirty tests showed fifteen milligrams per litre, or fifteen parts per million, of such filth deposited by the milk of Halle. In Leipzig milk, Renk obtained 3.8; in Berlin, 10.3; in Munich, 9.0 milligrams of similar filth deposited per litre. He found the bacteria in the Halle milk-supply to vary from 6,000,000 to 30,000,000 per cubic centimetre, a result agreeing well with its unclean condition. It may be remarked in passing that the sewage of American cities seldom averages more than 1,000,000 bacteria per cubic centimetre.

V. REMEDIAL MEASURES.

It is clear that the improvement of the conditions indicated above must consist in greater cleanliness in milk production and less delay in its delivery. So far as pollution is concerned it is possible to make great improvements by requiring cleaner stables; those which exist at present being often (from the standpoint of mere decency) simply abominable. The cows might also be kept much cleaner and, if necessary, washed above and upon the udder with warm water before milking, or at least cleaned and groomed as horses have long been. The milkers might be compelled to have clean hands, and taught to avoid pollution of the milk. That the milk-pail might be improved, and even kept partly covered, has been demonstrated by at least one invention now actually in use.

If the milk could thus be kept decently clean and nearly free from bacteria — the seeds of decomposition — and then quickly cooled to a low temperature its decay would be very slow, and its "keeping qualities" would be greatly increased. It could afterwards be transported over even long distances without damage, provided only that a very low temperature were constantly maintained. Under existing methods, however, quick delivery is essential, since the milk is richly seeded with filth at the very outset, and only imperfectly chilled during its journey to the consumer. To permit of all these improvements it is possible that a higher price might have to be paid for clean and fresh milk as is now done for fresh-laid eggs.

Finally, it does not seem unreasonable to urge that the whole matter of the public milk-supply deserves at least as careful attention from the public sanitary authorities as does, for example, the public water-supply. If questions of uncleanness and staleness do not seem to justify this conclusion, it is only necessary to add, inasmuch as milk is now believed to be one of the important vehicles for the distribution of tuberculosis, scarlet fever, typhoid fever and other infectious diseases, that the question of its possible infection is always of the highest importance. The time must soon come when our present neglect of the milk-supply problem shall cease, and when we shall no longer be satisfied with chiefly preventing the cheating connected with its dilution by water.

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SOME USES OF THE STOMACH-TUBE.[1]

BY E. M. BUCKINGHAM, M.D.

DURING the past few years it has happened to be my fortune to use the stomach-tube a limited number of times in cases of various kinds; and while the number of cases has been small, much smaller probably than has come to some other members of the Society, yet it has given me some positive ideas on the subject. If, as I believe, the use of the tube is not very common in this neighborhood, possibly a report of the cases may not be without interest.

One of the first things that struck me in the matter was the ease, to the physician at least if not to the patient, with which it is introduced, provided always the tube is held in one vertical plane and in the median line as it passes behind the tongue. I mean that the only curve should be from above downward, and that there should be none from side to side, in which latter case the tube is very apt to catch. I think, too, that milk, while sometimes used as a lubricant, is not so good as something more tenacious, oil for instance. The operation is somewhat facilitated by the patient's swallowing, but the operator can gain time, and save discomfort to the patient, by pushing gently at the same time.

A second point is that it is extremely disagreeable to the patient. One hears of patients who become accustomed to it or who even at first make little objection. I have not seen such, the only exception to this statement being the case of one hysterical woman. On the contrary, the disagreeable nature of the treatment is sufficient in my opinion to cause it to be avoided except where its use is imperative; and this rule will, I think, exclude it in some cases where recovery might be hastened by its use, but where other methods, although slower, promise to be effectual.

A third point is, that, while the tube is commonly introduced with the patient sitting, and the head thrown back in order to straighten the passage from mouth to stomach, yet it is sometimes, at any rate, equally easy to use it with the patient flat on the back and that the patient must be deeply narcotized indeed, for this position to create danger from water flowing toward the mouth in quantity to do harm by entering the glottis.

A few cases of nervous dyspepsia in my care have been helped, as perhaps they might have been equally by electricity or any other course which appealed strongly to the imagination

Lastly, as has been much more abundantly proved by others, cases of catarrh of the stomach, with or without constriction of the pylorus, are capable of much benefit from systematic washing out.

The following cases all occurred at the City Hospital, and would not be reported as yet, but for the slowness with which I have been able to collect them. During a recent continuous service of about seven and a half months divided between out-patient room and wards, although on the alert for opportunities, I have met but two cases in which the advantages of this treatment seemed to me to overbalance its annoyances. The cases are arranged for convenience and not chronologically.

CASE I. A man was brought into the hospital by the police, completely unconscious; pupils equal, and with slow reaction to light; face flushed; no rigidity. The breath had a peculiar odor which no one present was willing to say was alcoholic. Urine obtained by catheter was not albuminous. There was no history, the man being brought in as the police found him in the street. The tube was passed with no difficulty the patient being flat on the back; and the stomach was washed repeatedly with a quart of water at a time. There was no overflow of water. This patient proved to have been drinking enormously, and was discharged the next day. The only point of interest about it was the ease with which it was done.

CASE II. A woman, picked up by the police in Franklin Park totally unconscious, with an empty laudanum bottle by her. Symptoms of extreme opium-poisoning on entrance to hospital. Urine obtained by catheter contained albumen. She was immediately placed by the house-officer on her back with the feet elevated, on account of heart weakness. Artificial respiration and faradaism were applied. Coming into the hospital immediately after, I attempted to wash out the stomach in this position, if possible, and found it difficult to get the tube into the stomach, on account probably of the resistance of gravitation to the flexible tube. After it was inserted water introduced slowly began to run out by the mouth, and the attempt was abandoned until the patient had been placed horizontally, after which the stomach was washed with no more trouble. The woman died some two hours later. In this case the whole interest lies in the difficulties made by the position of the patient.

CASE III. This is somewhat unusual. A man of forty-five was admitted to the hospital on the eighth or ninth day of typhoid. He had a temperature of 104°, which was not much affected by cold sponging, and he was rather weak. He was given an ounce of rum every eight hours. On the second day after admission the temperature rose to 105°, and fell suddenly during the night. At my next morning visit the nurse had just reported that he had ceased to answer questions and could not swallow. This was a sudden collapse in a man who had not been much stimulated. There was little hope of treatment by the rectum, and I introduced a tube into the stomach and poured in about a tumblerful of rum and carbonated water in equal parts. In the course of fifteen minutes he had revived and was able to swallow; most of this mixture was retained, although a little was vomited. He was stimulated heavily for a few days, and finally recovered. I am by no means sure that the result was better than would have followed subcutaneous stimulation.

CASE IV. This case, and perhaps the next one, belong to a different class. A woman was discharged from the hospital partly relieved from an attack of great debility and hysteria brought on by overwork and sorrow. A week later she returned, salivated by persistent use of calomel as a cathartic. Her appetite had been ravenous, but now, because of her sore mouth, she was unable to eat, although hungry. After recovery from mercurial stomatitis, she continued unable to eat because of pain in the epigastrium; which pain I believed to be hysterical, but she believed it to be due to extension downward of inflammation from the mouth. Her stomach was washed out once at the suggestion of the house physician Dr. Robinson, and the good effect was immediate. He tells me that she wanted it done, and that it did not appear to be disagreeable. I was not a personal witness, but can readily believe that he was right. This is the only case of the series, however, in which patients have not made more or less objection.

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[1] Read before the Suffolk District Medical Society, October 31, 1891.

Case V. American woman of forty. Two hours after eating, gnawing pain in stomach and occasional nausea, which had continued for four years; during which time she had menstruated too freely and too often; she having a uterine tumor which was believed to be fibroid. She had had a similar gastric trouble thirteen years before. There was a strong family history of cancer, and she was anxious about herself. She had entered the out-patient room during the service of my colleague Dr. Withington, and after other treatment he had washed out the stomach, for the sake of the local stimulating effect. The effect had been good, and I continued it at intervals of a week for about four months. She disliked it, but showed courage in persevering, and reported herself as continually getting better. A part of her strength being lost with each menstruation, she was twice sent into the hospital at such times for observation. Dr. Mason, in whose service she first entered, caused the stomach to be washed every day for a week, and afterward less often. She remained in his service for about a month, remaining in bed during menstruation, without serious flowing, and gained in every way, although the stomach continued to have bad days. The following month she again entered the hospital. A little later she became discouraged, pain returned, and she passed out of sight. After an interval of a year and a half I learned that she had been very sick since leaving the hospital, was said to have got entirely well in less than a year, and had moved, no one knew where. The benefit of washing in this case seems to me to have been entirely in its effect on the imagination.

The remaining cases are of organic disease of the stomach.

Case VI. Man of thirty-six. Had been a drinker. For six months had complained of his stomach — eructation, vomiting and tenderness. Had got relief from beer and from charcoal. Percussion showed a large area of stomach resonance. The stomach was washed out twice, each time with marked relief to symptoms. There was no undigested food and little mucus in the effluent. My term of service ending, he passed from my obervation; but I know that he died within a few months, of cancer of the stomach, which diagnosis was verified by autopsy.

Case VII. Probably cancer of pylorus, but no autopsy. Vomited after meals for a year, dejection every two or three weeks before entering hospital. Mass in region of pylorus about four inches in diameter. Soon after entering, had vomited about two quarts of light-brown fluid containing undigested food. Being fed entirely by rectal enemata and still suffering from intense nausea, I washed out the stomach, to his great relief, removing from one to two quarts containing much undigested food that must have been taken at least three days before. On the following day the stomach was again washed, getting away more undigested food with a dark sediment, and he became very comfortable. From this time to his death, in about two weeks, there was no complaint except of weakness. He became unwilling, however, to take any food by the mouth lest it should again necessitate the use of the stomach-tube, the advantage of which he appreciated, but to which he had a great repugnance notwithstanding.

Case VIII. A heavy drinker, with frequent vomiting, the ejected matter consisting largely of mucus. This patient vomited out the tube before it was quite inserted, and again while water was running through it. It was introduced a third time and the stomach thoroughly washed, the patient frequently retching during the process. He never presented himself for a second treatment.

Case IX. Frequent vomiting of much mucus apparently dependent on improper food. Washed; getting rid of much mucus. No second visit.

Case X. Man of twenty-eight. Emaciated, debilitated, vomiting mucus for six weeks. Owing to his occupation he could not attend to himself regularly, nor could he enter the wards. In addition to other treatment he was washed three times in twenty days, but he got no better, and ceased to attend. Probably this case is of no value, owing to irregularity of treatment.

Case XI. Is the last and most satisfactory of the series, — a man of thirty-nine, of good habits, a tailor, whose sickness began with severe diarrhœa and gastric disturbance. These were not treated, he remaining at what he called unusually hard work. He recovered from diarrhœa, became somewhat constipated, and suffered from pain after eating, anorexia and nausea. After a while he gave up work, and for fifteen months spent most of the day on the bed because of weakness. He had had many physicians, the last of whom, a perfectly competent man, had treated him for some months without benefit. His present condition was much emaciated, flatulent, and with stomach resonance extending nearly or quite to the umbilicus. For two months the stomach was washed with a weak, hot solution of sodium bicarbonate in water as late after breakfast as possible, and at first three times a week. The first few washes brought away undigested food and much mucus, nearly clogging the tube. These diminished with every washing, undigested food disappearing first. The diet was attended to, as it had been before. During the first week, aromatic sulphuric acid was given after dinner. In the second week this was changed to sodium bicarbonate thirty grains in hot water on rising, a means of getting rid of an over-supply of mucus which is sometimes efficient by itself. In the third week, the stomach being now cleaner, this was changed to tincture of nux vomica after meals. At the beginning of the fourth week the effluent water was nearly clear, and after this, washing was done less frequently. Appetite improved; and in the second month he began rowing for exercise; soon worked half-time at his trade; and in two months was discharged well.

Three years later he told me that he had been well ever since. Here was a sequence of fifteen months' sickness, two months' treatment with steady gain that did not begin before treatment, and three years of health. Recovery was due to washing, not to collateral treatment, for he had been through much of that before.

Clinical Department.

TUBAL PREGNANCY: A CASE.[1]

BY G. H. WASHBURN, M.D.

MRS. G. is a pale, slender, rather delicate woman of thirty-five years. She has been married seventeen years, and has never been strong since the birth of her first child. For the past nine years she has been afflicted with chronic bronchitis, lasting the whole winter, anyway, and sometimes longer.

She has had four children, sixteen, fourteen, twelve and nine years ago respectively. She describes the labors as all quite easy. She was attended in every case by a midwife. All her children were thin, and their heads not specially large.

Her first labor lasted about three hours — from the commencement of the pains to the birth of the child.

Her second pregnancy was characterized by considerable pain and vomiting, etc., and at about the fourth month she had to go to bed. It was four or five weeks before she was able to get up again. The labor lasted only about two hours.

The third pregnancy was not so uncomfortable as the second. The labor lasted scarcely two hours, and the child was born before the midwife could get there.

Her fourth labor was the hardest, lasting about six or seven hours.

She has had one abortion, occurring five years ago. This was somewhat peculiar. She went along for about six weeks with all her usual feelings and discomforts accompanying pregnancy. Then, very curiously, these ceased, but there was no return of the catamenial flow. There were, however, little driblets of flow off and on at irregular intervals, and considerable leucorrhœa. After six months of this she went to a physician who "scraped the womb," and got out considerable bad smelling débris. After that her menstruation returned and was regular until the present pregnancy.

Menstruation commenced when she was thirteen or fourteen years old; it has appeared regularly every twenty-eight days until the past year, when it has been every twenty-six days. The flow lasts six or seven days, during the first three of which she uses about three napkins daily, the rest of the time one or two a day. There is some pain for two days before, and for the first two days of the flow.

There is some *leucorrhœa*, thick, viscid and yellowish, non-irritating. This would be discharged in gushes, but the amount was small — only about a couple of drachms — and there was no pain immediately preceding the discharge.

The patient has never felt well since the birth of her first child. There has been pain in the lower part of the back, bearing-down pains and other discomforts. The bearing-down pains were only occasional at first, coming perhaps after some over-exertion or long walk. They have been increasing, however, and lately have been worse and more persistent.

Two years ago, without any cause that she can recall, she began to have a pain in the right groin; for the past year this has been constant, and occasionally it has extended across to the other side. Her pain and discomfort is worst when she is on her feet.

There has also been a spot in the right inguinal region which, for the past two years has been very tender on pressure. It has felt specially sore and sensitive after going to bed, so that even the pressure of the bed clothing upon it has been painful. This small sensitive area has been much more comfortable during the catamenial flow.

Bowels have been quite regular.

Micturition about normal.

Urine normal.

Sleep has often been disturbed by pain. She has generally wakened in the morning feeling tired instead of refreshed.

Appetite and digestion have been good.

With the exception of some frontal headache her general health has been quite good the past summer.

I saw the patient the last of September, having been called in consultation by Dr. Gillespie. Her last menstruation had ended seven weeks previously. Twice since that, however, she had had a little show of blood, the last time being about September 1st. The middle of August she had begun to have nausea and vomiting. This soon became almost constant. She could retain nothing on her stomach except some broth, and at times that would come up too. When she took nothing a clear, frothy, acrid fluid would come up by mouthfuls. Her sleep was disturbed by this continual regurgitation. Her strength, color and flesh were rapidly wasting, and she was unable to leave her bed. Dr. Gillespie had tried all the usual and unusual remedies in a vain effort to relieve the vomiting.

Examination showed a uterus considerably enlarged, especially in its length, and seemingly farther advanced in pregnancy than the date of the last menstruation would warrant one in believing. The uterus was retroverted (about the second degree) and apparently tipped to the right also. There was a large tear of the cervix and perineum. The lips of the cervix were everted and much eroded. Pressure in the right inguinal region gave some pain. The supposition was that the malposition was the cause of the vomiting. The uterus was replaced, in the knee-chest position, and held up by a packing. Seen two days later, there was not a particle of relief to the vomiting. However, owing to the extensive tear of the perineum the packing had slipped somewhat, allowing some descent of the uterus. Then a pessary was adjusted which held the uterus up in very good place. Still there was not the slightest letting up of the vomiting, and the steady failure of strength continued.

The cervix was now painted with Churchill's tincture of iodine. The effect was to cause marked improvement in the local condition, but none whatever in the vomiting.

As all these expedients, medicinal and mechanical, had failed utterly to produce the slightest amelioration in the patient's condition, as she was very weak and rapidly failing, and as, moreover, the damp weather was impending, when she might look for the advent of her annual bronchitis, it was deemed best to induce an abortion. For this purpose a large bougie was introduced four inches into the uterus and fastened there, due antiseptic precautions having been taken. For a few hours after its introduction it caused some pain or pains in the right side and some discomfort in the back. For the remainder of forty-eight hours it did not seem to have any effect, locally or on the vomiting.

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[1] Read, by invitation, before the Obstetrical Society of Boston, November 14, 1891.

It was now determined to curette the uterus. The patient did not wish to take ether — she was a plucky woman — and as the uterus did not seem very sensitive, we went ahead without it. The os dilated readily with a Goodell-Ellinger dilator. A broad, dull curette was used. The uterus was found about four inches and a half deep, but at first appearance there was nothing in it; soon, however, a resistant mass was felt up in the right corner; scraping brought away only a few bits of tissue. An effort was now made to bring down something with the placenta forceps. Presently something was grasped by the forceps. Steady but gentle traction was followed by a sudden gush of several ounces of clear fluid, but no tissue was brought down. There was not much bleeding.

It was now deemed best to discontinue any farther manipulation. A strip of iodoform gauze was introduced into the uterus and packed lightly into the vagina. Instructions were given to remove this the next day.

The night following the removal of the gauze severe, cramp-like pains came on, increasing in intensity. These lasted for about five hours, then ceased quite suddenly. They did not call any one till morning when Dr. Gillespie was summoned. He found the legs of a small fœtus protruding from the os uteri. Passing his finger into the uterus as far as possible he found a long mass extending up into the right cornu. Grasping the fœtus and its envelope he drew down a cigar-shaped mass about four inches long, and about two inches thick in its largest diameter, the surface a little convoluted, the fœtal sac hanging from the larger end.

Placenta as seen from behind, as it came from the right tube. Specimen is a little shrivelled by being in alcohol. *A* shows the cavity of the sac, held open by two small splinters. The whole placenta was in the tube, and the sac protruded somewhat into the cavity of the uterus.

I did not see the patient till that afternoon. Vomiting and even nausea had entirely ceased and have not returned since.

Convalescence has progressed satisfactorily without rise of temperature or other untoward symptom.

Menstruation appeared on the 5th of November lasting until the 11th. There have been two gushes of blood, but the flow altogether has amounted to only twelve napkins.

Examination on November 13th, just four weeks from date of expulsion of fœtus and membranes, shows the following condition: Uterus retroverted, second degree or a little more, cavity not measured, but bimanually shows that involution has been progressing satisfactorily. The left tube and ovary feel normal. The right ovary not felt, but the tube seems about the size of the little finger and twisted like a knuckle of intestine, somewhat tender on pressure. She has been gaining in strength, and is now about her household duties.

To review the case briefly:

There were no attacks of severe pain, in fact there was no more pain experienced than had been present for the past two years. There were no attacks of bleeding, unless you would call such the two times when there was a slight show of blood.

The important fact which was noted in the first examination was not given sufficient weight as showing a tubal pregnancy. I refer to the apparently lengthened-out shape of the uterus, out of proportion to its diameter at that stage of pregnancy, the enlargement, moreover, extending to the right.

There was present persistent vomiting, unrelieved by medicinal or mechanical means, reducing the strength of the patient so as to demand operative interference.

The introduction of the bougie was unattended by results.

Not only did the curette fail to bring away much of any tissue, but the placenta forceps did not grasp anything until they were passed well up into the right cornu of the uterus.

Evidently the whole placenta was in the tube, but a part of the sac protruded into the uterine cavity. The specimen proves the correctness of this supposition.

The traction and opening of the sac, and the stimulating of contractions by the introduction of the iodoform gauze into the uterus, loosened the placenta and allowed the uterine contractions to force it down.

Finally, a large tube, the enlargement most apparent at the uterine attachment, remains to show the site of the placenta.

It is interesting to note the immediate cessation of the vomiting as soon as the uterus was emptied.

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A CASE OF PROBABLE TUBAL PREGNANCY.[1]

BY EDWARD REYNOLDS, M.D.

On the 6th of last August, I was called to the country to take charge of the case of Mrs. X., secundipara, with the following previous history.

In her first pregnancy, she was afflicted with extremely severe vomiting. Becoming a patient of Drs. W. H. Baker and F. H. Davenport, she was discovered to have a retroversion of the uterus, which was relieved with much difficulty by prolonged packing of the vagina. After the relief of the displacement, the vomiting gradually subsided, and she went to term without further accidents, and was safely delivered after an easy labor.

During the first weeks of her second pregnancy, her social duties subjected her to considerable fatigue: and when a little less than two months advanced, she was again troubled by quite severe nausea and vomiting, which became steadily worse until I saw her, at which time she was a little more than three months advanced. She had then been confined to her bed for nearly a fortnight, had failed to retain any considerable amount of food for more than ten days, and had been vomiting excessively for five or six days, during which time she had retained upon her stomach no food whatsoever, and had been nourished solely by enemata. The rectum was becoming intolerant. She was already very weak; the pulse was about 110 or 112. Any attempt to move in bed, any noise or jar in the room, in fact, any external stimulus, caused attacks of vomiting, which were seldom fifteen minutes apart. No local examination had been made. I found the uterus retroflexed and retroverted, the fundus upon a level with the cervix, and not readily to be raised. Under ether, it proved to be impacted between the utro-sacral ligaments, but it was not adherent and was readily raised into position by taxis.

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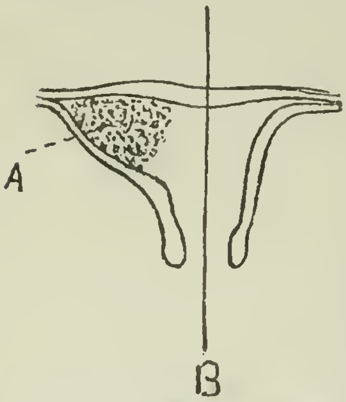
[1] Read before the Obstetrical Society of Boston, November 14, 1891.

The uterus seemed to me to be slightly irregular in shape, the right side being much more prominent than the left, and the right cornu seeming to extend into the broad ligament, in a way which at once suggested the possibility of an interstitial pregnancy, or of pregnancy in one horn of an asymmetrically developed uterus. I am bound to say, however, that although this possibility was suggested to me at the time, I felt that the results of examination were not sufficient for the formation of the diagnosis,

The uterus was easily retained in position by the insertion of a pessary, and after the recovery from ether there was no vomiting for several hours. It then recurred, though in a somewhat less severe form than before. I could detect no errosions upon the cervix uteri.

The patient was removed from an extremely noisy room in the hotel to one in which comparative quiet could be obtained, and the next day was spent in the administration of enemata. The vomiting was still distressing, though decidedly less than when I first saw her.



A, Site of Placenta.
B, Median Line of Uterus.

During the next night, she was attacked by sharp, colicky pains in the right iliac and inguinal regions, of a character which she described as closely similar to labor. The attack subsided spontaneously after a few hours, and was not followed by any relief of the nausea. On the following morning, her pulse ranged from 120 to 130 beats per minute, and her exhaustion was extreme.

In the belief that any further attempt to preserve the existence of the fœtus would almost certainly result in the loss of both patients, I decided upon the immediate induction of an abortion. The os was found, as upon the preceding day, soft and slightly patulous, and was easily dilated with branching steel dilators to a size which admitted the index finger. The intact membranes presented at a level slightly above that of the internal os, with which they were not in contact; and behind them could be felt the head of the fœtus.

Feeling anxious, on account of the uncertain condition of the right broad ligament, to avoid all unnecessary manipulations, I passed into the uterus the blades of a pair of ovum forceps, and was fortunate enough to succeed in extracting by their use a complete, though badly lacerated ovum. The placenta was fully formed, the size and appearance of the fœtus corresponded to a pregnancy of a little more than three months. On again passing the finger into the uterus, I found a condition which I have endeavored to represent in the diagram which I pass around. The evacuation of the uterus was followed by immediate relief of vomiting; the recovery was prompt and uneventful.

The history and results of the intra-uterine examination seemed to me to render it probable that the case was originally one of interstitial pregnancy, which was converted into an approximately normal form by the efforts of nature, during the night which preceded the delivery; and, although I do not consider the diagnosis as by any means established, I think that the rarity of such a condition renders the case worth reporting, and especially in connection with the very interesting and well established instance which Dr. Washburn has detailed to us.

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A CASE OF TUBAL PREGNANCY.[1]

BY F. B. HARRINGTON, M.D.

Mrs. M. J., thirty-three years old, widow, never before pregnant, passed the time of her period by two weeks, when flowing came on with considerable pelvic pain unlike any previous menstrual distress. The discharge was slight but continuous. The pain was at the right side of the pelvis. The flow continued with increasing pain for three weeks when I first saw her. The abdomen was tender and slightly distended. Vaginal examination showed a mass on the right side of the pelvis resembling a dilated tube. There was tenderness and thickening about the mass. The patient was put to bed, and was given opiates and douches. The bloody discharge ceased in about a week, but soon returned again in slight amount. The pain gradually diminished. The bloody discharge ceased entirely in about six weeks from its first appearance. The tumor at the right side of the uterus had increased in size until it was nearly as large as a large lemon. It was still tender to the touch and gave the patient a feeling of discomfort. After a two months rest the patient was much improved in general health, but the tumor remained a source of great discomfort to her.

Removal was advised. The mass was found to be the dilated right Fallopian tube which appeared to contain fœtal remains with a considerable amount of bloody fluid. The fœtus had probably died at from five to six weeks.

The following is Dr. Whitney's report of the specimen:

"*Tube and Ovary.* — The portion of tube measured about twelve centimetres, and walls were thickened. About eight centimetres from fimbriated end was a nodular enlargement chiefly opposite the side of the ligament. This measured about nine centimetres in circumference. The surface of the tube was covered with rough fibrous adhesions. The cavity was dilated and shaggy, and the enlargement filled with a villous-looking mass, and from this a thin membranous sac was continued to the fimbriated end, and projected slightly beyond. In this part was a hard reddish nodule the size of a pea which on section showed a small differentiated mass recalling the outline of a very young embryo. Microscopic examination showed round cells with an embryonic arrangement, and at one end was an accumulation of pigment. Microscopic examination of the villous mass showed small finger-like projections similar to those of the chorion.

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[1] Read before the Obstetrical Society of Boston, November 14, 1891.

"*The Ovary* was small and contained a few retention cysts, but no evident corpus luteum. It was situated opposite the tube about eight centimetres from the fimbriated end."

The patient made a good recovery.

Medical Progress.

RECENT PROGRESS IN DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D.

GASTRIC DIGESTION IN SMALL CHILDREN, AND IRRIGATION OF THE STOMACH.[1]

The following propositions include the substance of the author's paper:

(1) The presence of completely coagulated casein in the stomach does not warrant one in speaking of the excessively acid contents of the stomach, for a precipitation of the casein from the solution can only happen in consequence of the influence of labferment and this acts in the presence of an alkaline reaction.

(2) The change of the casein, which has begun to coagulate, to the state of solution with subsequent peptonization is due to the simultaneous action of acid and pepsin, and the stomach takes up the albumen the more successfully and completely the more the quantity and composition of the digestive secretions approach the normal.

(3) Lactic acid must be regarded as a normal constituent of the gastric juice, at least in very young children and in those with whom the diet is exclusively one of milk, and its formation is encouraged by the milk-sugar which is abundant in the milk. This constant presence of lactic acid has its effect alike upon the digestive process and upon the action of microbes.

(4) Hydrochloric acid plays the principal part in digestion, but its determination is not always easy, because the casein of the milk has the property of holding it until digestion begins. Hydrochloric acid may usually be found in small quantities in the stomachs of very small children. As digestion increases in activity, the quantity of hydrochloric acid also increases.

(5) The quantity of acid in the gastric juice of children is relatively very much smaller than in adults, and is conversely as to the quantity of food taken into the stomach.

(6) The average time during which food stays in the stomach of small children is two hours.

(7) Slight mechanical, thermic or chemical irritation of the gastric mucous membrane will increase the acidity of the secreted juice and favor a rapid emptying of the stomach. Alcohol stays digestion, but counteracts fermentation.

(8) The part in digestion which is played by the stomach of the child is an important one, even though it does not appropriate all the albumen which comes into it.

(9) The anti-microbic properties of the gastric juice are undoubted, and due to the presence of free acid, especially hydrochloric acid. In consequence of the slight acidity of the gastric juice in the stomach of children, it cannot act as forcibly to retard fermentation as the same secretion in the adult.

(10) It has not yet been determined what significance certain micro-organisms have upon digestion.

(11) Functional disturbances in the stomach of children are due to changes in the quality and quantity of the gastric juice, the regular exchange in its ingredients being disturbed, or the parts being subjected to physical or chemical changes which are not yet understood.

(12) The quantity of gastric juice in the stomach of children may be lessened without necessarily causing an increase of lactic acid, or the appearance of acetic or butyric acids.

(13) When the normal secretion of the stomach is deficient, acids are developed which are not suitable for normal digestion.

(14) The presence of too much mucus in the stomach may paralyze the digestive activity of the gastric juice, though the latter may be normal as to quantity and as to composition.

(15) If too much food enters the stomach, or if it remains there too long, an insufficient quantity of gastric juice will be secreted for its digestion.

(16) The majority of gastric dyspepsias in children are caused by the deficiency of hydrochloric acid in the gastric juice. Functional disturbance is rarely caused by excessive secretion of gastric juice.

(17) Diseases of the stomach with definite anatomical peculiarities, manifest themselves by the presence of an abundance of mucus, serum and inflammatory elements. The severer the disease and the longer it lasts, the more conspicuous will be these elements.

(18) With inflammation of the gastric mucous membrane, digestion is reduced to a minimum, even if the gastric juice remains normal in quantity and quality.

(19) Disturbed digestion is accompanied by the appearance of an increased number of fermentation-phenomena, with the formation of acids foreign to the stomach and its work, as well as the breaking up of albumen and the formation of decomposition-products. The substances which are submitted to fermentation are the fats and the excess of mucus, which ordinarily do not undergo such changes.

(20) A diminution or failure in the presence of hydrochloric acid in the stomach, signifies the formation of pathogenic elements in the soil favorable to such development, the anti-microbic power of a sufficient quantity of hydrochloric acid being wanting.

(21) It is quite possible that certain forms of micro-organisms or their products, are responsible for the different diseases in the stomachs of children. The means for treating the abnormal condition of the stomach, which has been found extremely efficient in numberless cases, is irrigation.

THE ETIOLOGY OF ACUTE DIGESTIVE DISORDERS IN INFANTS.[2]

Investigation in Germany was first directed to the great mortality of infants during the summer months by the published report in America concerning the "Summer Diseases of the Children of New York." Bedra also called attention to the fact that the contents of the intestines in infants who suffer from digestive disorders are similar to organic matter which has undergone fermentation or putrefaction, and that probably these diseases are due to processes of decomposition. At that time, however, the process of fermentation was not thoroughly understood. Eichstedt called attention to the similarity of the dyspeptic fæcal evacuations of infants with fermenting substances. Attention was next called to the high atmospheric temperature and depression of the surface (ground) water during the months when summer complaint prevails.

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[1] Troitzky: Jahrb. f. Kinderh., xxxii, 4, Archiv. Pediat., vol. viii, November, 1891.

[2] Seiffert: (Jahrb of Kinderh., xxxii, 4); Arch. Pediat., vol. viii, November, 1891.

These facts, together with the yearly occurrence of the disease in an epidemic form, rendered it possible that the vitalistic fermentation theory of Pasteur might throw light upon the pathology of the condition.

Then Baginsky showed that with the increase in the temperature the mortality among infants from diarrhœa increased, especially in neighborhoods where the hygiene of the home was bad. Thus the disease might arise from miasmatic influences proceeding from fermenting substances, or from direct decomposition of milk in consequence of the action of spores upon it.

Meissner agreed with Baginsky's view, especially observing that the disease occurred when children had been fed from dirty bottles, and that breast-fed children seldom suffered with it. Many other observations followed the foregoing, the opinion steadily gaining ground that the disease was due to fermentation.

Le Sage has divided the digestive disorders into the following classes;

(1) That in which the cause consists in fermentation of the contents of the stomach.

(2) The lienteric, which is due to deficient digestion of the milk.

(3) Diarrhœa, caused by reflex processes in teething and in taking cold.

(4) Infectious diseases of the intestines, which may be due to poisons resulting from the decomposition of the food by micro-organisms, or to general infection, with a specific parasitic bacillus, analogous to the process in cholera.

(5) A bilious green diarrhœa.

Escherich distinguishes three forms of digestive disorder caused by the use of decomposed milk:

(1) Isolated fermentation of the stomach, causing retching, acid vomiting and dilatation of the stomach.

(2) Acid diarrhœa, caused by fermentation in the large intestine, which is carried on without the presence of oxygen.

(3) A colitis with feculent diarrhœa, caused by fermentation in the large intestine.

Clinical experience, as shown in the successful treatment of gastric disorders by irrigation of the stomach, and the antiseptic treatment of the entire alimentary canal, force the conviction that these disorders which are under discussion are the result of decomposition processes, which are caused by bacterial agencies. Starting with the hypothesis that the contents of the alimentary canal are the substratum from which the intoxication which gives rise to gastro-intestinal disease proceeds, the following questions are submitted:

(1) Do the contents of the stomach in dyspepsia in young children have a relatively greater quantity of micro-organisms than the contents of the stomach of healthy children?

(2) Is there a relation which can be determined between the relative quantity of germs in the stomach of sick infants, and the intensity of the disease from which they are suffering?

(3) What are the relations between the relative quantity of germs in the contents of the stomach and the intensity of the disease on the one hand, and climatic factors, which influence the destruction of the milk, the factor of temperature particularly, on the other hand?

To answer the foregoing questions, a quantitative bacteriological analysis was necessary, of contents taken from the stomach of a living child.

Investigations of this character on an extensive scale were made by the author, and from these it was concluded that in the acute dyspepsias of infants one has to deal with spores, which are antagonistic to the acid of the contents of the stomach, are introduced with the nutriment, and develop luxuriantly at the temperature of the body. The phenomena of severe dyspepsias, and especially those of cholera infantum, are the phenomena of acute intoxication; hence, it is reasonable to seek for the cause of the disease in the poisons generated by the saprophytes of the contents of the stomach.

These diseases are most destructive at the time when high temperature, through the action of micro-organisms, works destructive changes in food-substances, and almost disappear when the weather becomes cool. There are also cases which have the character and etiology of general infectious diseases.

These diseases are not epidemic or endemic in the same sense as the continued fever, lacking the characteristic developments and history which such general infectious diseases have. For the further elucidation of the etiology of acute dyspepsias, the chemical changes which are caused in the milk by the bacteria found in the stomach, must be studied, especially by experiments upon animals. Subcutaneous or intravenous injections of the bacteria should be made upon suitable animals.

DILATATION OF THE STOMACH IN CHILDREN.[8]

The high mortality in infants and children from disorders of the digestive apparatus has long furnished a difficult problem in therapeutics to pediatrists, and the stomach is the organ which has demanded most earnest study. The therapeutical portion of the subject has been studied with especial earnestness since the French drew attention to the frequency with which dilatation of the stomach occurs in children.

Dilatation of the stomach may enlarge the organ regularly or irregularly. The hour-glass form is a common example of irregular dilatation. It must necessarily produce thinning of the walls of the stomach, and if the condition is prolonged, fatty degeneration and atrophy of the muscular elements of the stomach must take place. The mucosa is anæmic or hyperæmic, according to the catarrhal condition which exists.

The causes of gastric dilatation are divided into two categories:

(1) Those which are due to mechanical obstacles: (*a*) congenital stenosis of the pylorus; (*b*) overfeeding and overwork.

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[3] Henschel: Arch. f. Kinderch., xiii, 1 and 2; Arch. Ped., vol. viii, November, 1891.

(2) Those which result from muscular atony, and are caused by, (*a*) irregular conditions of the constitution; (*b*) abnormal fermentation in the stomach; this cause far exceeds all the others in frequency.

If dilatation is due to congenital stenosis of the pylorus, vomiting and pain will be present almost from the taking of the first food into the stomach; constipation and flatulence will also be present: anæmia, emaciation and death will soon follow. Those cases of gastric dilatation which arise from constitutional disorders or from overloading manifest themselves more slowly, occasional attacks of vomiting being present, then loss of appetite, until at length the smallest quantities of food are refused. The abdomen is swollen and the bowels are constipated, the tongue is coated, but the temperature remains normal. Occasional attacks of gastric catarrh further weaken the patient, who finally dies exhausted.

If dilatation is due to fermentation, the course is more rapid; gastric catarrh is a more prominent symptom, and with it are associated severe nervous symptoms, chills, depression of the eyeballs, apathy, convulsions, collapse, cyanosis, dyspnœa. The most important symptom in making a diagnosis is, of course, the tympanitic note, which is obtained by percussion. Another is the succussion sound which is produced by the rolling about of the fluid in the stomach as the child is shaken from side to side; but this and other similar signs are not available; if the child is suffering with diarrhœa, the fluid will also roll about in the intestines. The prognosis of this condition depends very much upon the condition of the child in general. It is absolutely bad if there is stenosis of the pylorus. The danger of the situation is increased by the fact that the resisting power of the system is lessened as the child is unable to take nourishment. He becomes more susceptible to intercurrent diseases, and yields to them more readily than when digestion is intact.

One of the most useful means ever devised for the relief of gastric dilatation consists in the irrigation of the organ. The soft sound is safer to introduce into the stomach for an irrigating tube than the hard one. It must not be passed too low lest the end be so bent that the return flow of fluids would be prevented. One may use for irrigation, simply warm water or solutions of resorcin, benzoate of soda, or boric acid. If the dilatation is of long duration, irrigation may be required twice daily. As to diet, Epstein recommends for the first few days albumen water, black tea, oatmeal gruel and milk in small quantities and at frequent intervals. For nursing children, he advises to refrain from weaning as long as possible.

Prophylaxis is, however, the best treatment; it is easier to avoid producing gastric dilatation than to cure it when produced.

TYPHOID FEVER IN AN INFANT.[4]

Typhoid fever being an extremely rare disease in young children, the author has reported the present case at considerable length. The patient was a boy eight months of age, bottle-fed, small, thin, and delicate looking, but well until the onset of this attack. He was first seen on October 2d, the third day of the illness. The temperature was 102.5° F.; the pulse 140. Believing the case to be one of entero-colitis, castor-oil was given, and the diet carefully regulated.

During the next week the temperature ranged from 102.5° F., in the morning, to 104° F., in the evening, the remission usually beginning after midnight. The spleen became enlarged, and could be felt as a smooth, firm mass two inches below the ribs. The liver could also be felt an inch below the costal cartilage. An eruption soon appeared upon the abdomen, chest, and back, consisting of numerous small, isolated, bright rose-spots, about the size of a pin's head, or a little larger. The diagnosis of typhoid fever was based upon the appearance of the eruption, persistent high temperature, tympanitis, enlargement of liver and spleen, and gastro-intestinal derangement evinced by vomiting, pain, and looseness of the bowels.

During the second week, the temperature ranged from 102° to 103.5° F. Slight bronchitis developed, the eyes were sensitive to the light, and there was evidently pain in the head.

At the end of the third week the temperature had become intermittent, the morning temperature reaching normal on October 17th.

The diet was milk, rice-water, and raw-meat juice. The treatment was symptomatic. Twelve drops of brandy were given every two hours throughout, and tepid sponging and cold to the head were systematically carried out. A full dose of quinine was given if the afternoon temperature reached 103° F. No complications or sequlæ followed, and the child made a good recovery.

THE OPERATIVE TREATMENT OF CHRONIC HYDROCEPHALUS.[5]

An operation for chronic hydrocephalus presents no technically insuperable difficulties; but it is important to consider in what cases it is allowable, and what will be obtained by the operation in favorable cases. The results of operations which have heretofore been made are not encouraging. Incision and drainage of the hydrocephalus sac have given no better results than earlier methods. The propriety of such operations might, therefore, be questioned. Of course, not every case of chronic hydrocephalus is suitable for operation. Every intracranial effusion of fluid of moderate extent must be let alone, also those cases of congenital hydrocephalus in which a rudimentary development of the brain is suspected, all these cases being complicated also with spina bifida or some other serious lesion.

Those cases are to be taken into consideration in which, in spite of hydrocephalus, the children are psychically and physically well developed, or at least were so until the enlargement of the cranium began. Such children should show a steady though slow deterioration as the result of cerebral irritation or pressure conditions. Any operative procedure will be the less dreaded in such cases when one realizes the gloomy prognosis without such a possible source of relief. Such children become weak-minded or idiotic. They do not learn to talk at all, or that which is learned is quickly lost. If the pressure conditions continue only a few cases are there which escape total blindness. In an advanced condition of hydrocephalus complicated movements of co-ordination are impossible; walking, standing and sitting may be impossible.

If such a child learns to walk, the gait is wavering and uncertain. Pauses, contractions, partial and general chronic spasms are ordinary occurrences. All these symptoms are more or less conditioned upon the accumulation of the ventricular fluid, and the increase of endocranial tension. The circulation in the cranial cavity is weakened by the pressure, is also retarded, and may be stopped. Thence will arise functional disturbances, and then pathological changes in the brain substance. If the pressure is removed by arrest of the secretion and ossification of the cranium, restoration to a certain extent is possible. Atrophy of the brain is present with most of those who recover, and they remain idiots for life.

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[4] England: Montreal Medical Journal, February, 1891; Archiv. Pediat., May, 1891.

[5] Jahrb. f. Kinderh., xxxi, 1 and 2; Archiv. Pediat., April, 1891.

In the case upon which the author operated, great improvement took place after each withdrawal of fluid. The comatose condition passed away, the pupils reacted to light, the pulse became fuller and stronger, the breathing regular, and the desire for nutriment returned. The entire condition of the patient was satisfactory until the appearance of pus-corpuscles in the cerebro-spinal fluid removed the hopes of success which had been raised. If suppuration could be avoided, the author thinks that incision and drainage are better treatment for such cases than any other method which has been proposed.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

JAMES J. MINOT, M.D., SECRETARY.

Stated Meeting, Saturday, October 31, 1891, Dr. E. N. Whittier in the chair.

Dr. F. W. Johnson reported a case of

PREGNANCY AND LABOR AT FULL TERM FOLLOWING AN ALEXANDER-ADAMS OPERATION.[1]

Dr. E. M. Buckingham read a paper on

SOME OF THE USES OF THE STOMACH-TUBE.[2]

Dr. T. A. DeBlois: I have had the pleasure of seeing Dr. Buckingham operate with the stomach-tube occasionally, and, of course, as regards the indications for the operation, no one doubts the usefulness of the stomach-tube in cases of chronic gastric catarrh. It is in regard to the use of the soft tube rather than the hard one I would like to speak. To me as an outsider looking at the operation, the swallowing of the soft tube was much like a young bird swallowing a large worm. The bird seemed to enjoy it, but the patient did not. I have used the stomach-tube a good deal in other gastric troubles. I carried one round for a year without having occasion to use it except for a case of poisoning, and then did not have it with me.

I came to use the stomach-tube to dilate strictures of the œsophagus, and I have found that small rectal bougies made excellent dilators of the œsophagus. I want to bring up one point, and that is the ease with which the stiff tube can be passed. If the head is pretty well back and the left hand on the epiglottis, you can pass it quickly and easily. I think the limber tube is slow to pass. Of course, after the tube is in, one tube is as good as another. Perhaps the stiff one is a little better, because it cannot be constricted by any spasm of the œsophagus

Dr. T. M. Rotch: The subject of stomach washing is an important one, and although it is one of the recognized forms of treatment for chronic gastric catarrh and vomiting, it is not employed in this community to the extent that it is in other parts of the country. When I had charge of the City Hospital out-patients, I had a case which resembled the last one reported by Dr. Buckingham. A young man had for many years suffered from chronic gastric catarrh, with its attending symptoms, and was much relieved in a month or six weeks by the simple process of washing out the stomach with warm water.

We should also perhaps speak of the washing out of the stomach in general, for instance, at what ages you can begin. The stomach can be washed probably at any age without danger to the individual. Dr. Seibert, of New York, performed the operation on his own child when it was but thirty-six hours old. The child was seized with obstinate vomiting, threatening its life, and one or two washings out with sterilized water stopped the vomiting.

The washing of the stomach in adults was done as long ago as 1869 or 1870, by Kussmaul. Stomach washing in children was begun some years later, about 1880, by Epstein of Prague; and considering the small number of cases in this community where the stomach has been washed by physicians, it is extraordinary to note the number of cases that have been so treated abroad. We here treat with drugs, and it is well known with what little success, in the vomiting of children and in the different forms of catarrh. I am not especially advocating at present the washing out of the stomach, but I do think it is well to bring to the notice of the Society the fact that we are a little too conservative about trying some of these methods for preventing what may lead to even death in young infants, and that we really have not given gavage a fair trial.

Dr. Seibert, of New York, has done a great deal of good work in this direction, as has Dr. Bocker, of Baltimore, at the Wilson Sanitarium; and certainly their reports show that it is a most efficient method for dealing with vomiting and with catarrhal conditions. At the same time I think we should recognize that it is not merely by washing out the stomach that we can effect a cure in these cases. Some physicians hold that all that is necessary is to distend the stomach with water and the catarrhal condition will pass away. That is a little shortsighted. We know that the water in all probability does not enter the small intestine, and that the duodenum may be the nidus where the disease lurks, so to speak, in these catarrhal conditions. Where we have obstinate cases of this class, we are right in saying that stomach washing is part of the treatment, and I know of very few cases where it has been followed by dangerous symptoms. The idea is that in these catarrhal conditions you cannot put a disinfectant in the stomach which will kill the germs. In the first place in all probability the disinfectant will not reach the whole of the stomach. The upper part of the greater curvature will not be reached by the medicines you give. The medicine is either absorbed or passes through the pylorus. If you wash out the stomach, you wash out what is in the folds of the stomach in all probability, and the curds which are formed and which keep up a catarrhal or dyspeptic condition will be removed. Dr. Jacobi, of New York, has expressed an opinion of this kind, if I remember rightly, and Dr. Koplik has reported a number of interesting cases.

The technique of the operation with young infants is the use of the soft catheter about nine inches long, or you can increase the length of the catheter with a glass tube. It is said to be very easy to insert the catheter. We must be careful not to distend the stomach too forcibly. An infant's stomach is very easily distended; hence instead of using the fountain syringe we had perhaps better substitute the method, which Epstein originally used, and I believe, continues to use — a simple funnel attached to the catheter.

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[1] To be published later.

[2] See page 28 of the Journal.

Dr. G. Liebmann: The last two or three years I have had considerable experience with the stomach-tube, and especially in catarrh of the stomach. I must say that I think the effect of washing out in ordinary chronic catarrh of the stomach is not exactly what I anticipated. I find that I can bring about an improvement occasionally the first two or three times washing out the stomach, but then the improvement stops, and the results will not go on. I think in such cases the moral effect is as much as the absolute washing out. On the other hand, in dilatation of the stomach I think it is the supreme remedy. With regard to the introduction of the soft tube, I would state that some time ago I exhibited here a stilet or mandrin made of rattan, which I use continually in cases where the patients are nervous. I find I get along much better than before. It is not exactly new treatment. The men in Europe have been using it lately, especially Leube. It is a great adjuvant in the hands of the physician. Before I used this mandrin, I failed in some cases, having to to depend on the co-operation of the patient. If he does not swallow, we cannot push the soft tube through the pharynx into the œsophagus, and have to give up the passage. The use of the mandrin does away with this difficulty.

I think the greatest triumph of the stomach-tube lies not exactly in the therapy alone but in the diagnosis. If we use the old-fashioned methods of examination of the stomach alone, we are in the dark, whereas, if we examine the contents of the stomach, we know what we are about.

Dr. Charles P. Putnam: I have used the stomach-pump for washing and feeding in a child about eight months old, and can testify to the great ease with which it is done and the good result of the treatment. Dr. Rotch has described the method. The child had been unable to retain food and was extremely restless, but after the washing, it slept for a long time, and after a time was able to retain food swallowed in the ordinary way.

Dr. Buckingham: There is a use of the tube that has not been mentioned to-night. Some new-born babies are too weak either to take the breast or the bottle, or even to swallow. In a certain number of such cases a soft catheter has been introduced, and the child fed through this until it has gained strength.

With reference to the use of the tube being disagreeable, I certainly meant to dwell upon that and am glad to hear from Dr. DeBlois that the stiff tube is less objectionable in that respect. The soft tube, however, is introduced without the slightest trouble to the introducer, the trouble is all for the patient. I must take exception also to Dr. DeBlois's statement that the tube is got in entirely by means of the patient's swallowing. By gentle pressure it is easy to help him very much of course, if the tube was perfectly flexible this would not be true, but the tubes as made are not absolutely flexible because of the thickness of their walls.

Dr. Charles P. Putnam: I once saw a case of diphtheritic paralysis where the child was being starved to death because unable to swallow any food, and it was without the least difficulty that a large catheter was introduced and food given. The child recovered. The age at which it is said to be difficult is between two and the time when the child can be reasoned with. Up to two years it is easy to introduce the tube, and in the case I mention, it went in without any difficulty at all and without apparent discomfort.

Dr. E. W. Cushing presented a specimen of

DOUBLE PYOSALPINX.

with the following history. A young woman of twenty-three years, married one year, healthy until married, but soon after that time seized with pelvic inflammation, which frequently recurred.

Has been confined to bed for several months. Lately has been very ill and at last came under the care of Dr. Ruddick, who, recognizing the gravity of the case, at once called me in consultation, with reference to operation. On examination, the uterus was retroverted and held down by "adhesion." Bimanual examination showed tenderness on each side of uterus and indistinct masses high up on each side of pelvis. Bowels very constipated, partially owing to free use of opium (no motion for last two weeks). Patient was taken to Charity Club Hospital; bowels moved, opium stopped. Three days later, abdominal section. Omentum adherent; intestines glued together; large pus tube, with abscess sac as big as the fist, in place of ovary on each side, high up and crowding uterus backward; pus very foul. Removal; irrigation; drainage; satisfactory convalescence.

Dr. Cushing called attention to the danger of breaking up supposed "adhesions," which are thought to hold the uterus down, without knowing accurately what the condition is and what the manipulations are doing.

Dr. Hare: I have here a cyst removed by Dr. Baker yesterday morning. It is a suppurating dermoid discharging through the bladder for three years. The woman noticed the enlargement about four years ago.

The following committee of five were elected by ballot, to prepare a list of candidates for officers of the Society; Dr. D. W. Cheever, Dr. F. Minot, Dr. F. W. Draper, Dr. T. M. Rotch, and Dr. Morton Prince. The secretaries of the various Sections of the Society were appointed by the President for the ensuing year.

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THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, November 14, 1891.

Dr. G. H. Washburn reported, by invitation,

A CASE OF TUBAL PREGNANCY,[1]

and showed specimen.

Dr. F. B. Harrington reported

A CASE OF TUBAL PREGNANCY,[2]

and showed specimen.

Dr. Edward Reynolds reported

A CASE OF PROBABLE TUBAL PREGNANCY.[3]

Dr. J. G. Blake said that it was strange that so few cases of extra-uterine pregnancy occurred in Boston, when one considers the large number that are reported from other cities, from Philadelphia, for example.

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[1] See page 30 of the Journal.
[2] See page 32 of the Journal.
[3] See page 31 of the Journal.

Dr. C. P. Strong said that in Dr. Harrington's case under ether, there was felt what seemed to be a dilated tube. If the patient had simply rested it is probable that the ovum, which was dead, would have been expelled into the uterus and she would have recovered without laparotomy, but being a working woman, she could not afford to keep quiet for so long. This recovery, without laparotomy, is probably the history of a good many cases in places where many enthusiastic laparotomists are not to be found, and may explain the difference in the number of cases reported from different cities.

The cases of both Dr. Washburn and Dr. Reynolds suggested to his mind uteri bicornate. The histories would point to this rather than to tubal pregnancy, for in the latter form there would be more pain.

Dr. Reynolds said that in his case he had made no definite diagnosis of tubal pregnancy.

Dr. F. H. Davenport said, in reply to a question of Dr. Reynolds, that he had detected no abnormality of the uterus, although he had examined the patient in the non-pregnant state.

Dr. W. H. Baker said that in former times cases like those reported would not have been recognized, for it was not known that the ovum could be extruded from the tube into the uterus.

Dr. Goodell, of Philadelphia, was one of the first to call attention to this point. He himself had seen one case where the ovum was expelled into the uterus, and the pregnancy went to full term.

In one case under his observation where hæmorrhage occurred, the uterus was thoroughly curetted. The right side of the uterus was found enlarged at the time, but two weeks later, the flowing continuing, examination showed the uterus of normal size and filled with an ovum. There are many cases of extra-uterine pregnancy, however, where there are no marked symptoms until sudden pain and collapse occurs from rupture. In such cases one would not hesitate to open the abdomen at once. In one such case he operated, removed a basinful of clots and also the right tube, which was ruptured and bleeding. This case, unfortunately, died in eight or nine days. Cases suspected to be tubal pregnancies demand careful watching, and Dr. Baker believes that galvanism is most important. In two cases he had used galvanism in strong current, with good effect.

Dr. Washburn said that four weeks after the expulsion of the ovum he had examined his patient and found an enlarged tube coming out of an enlarged horn of the uterus.

Dr. Haven said that in a case operated on by him two years ago, and already reported to this Society, the severe pain was what demanded the operation, the characteristic pain of tubal pregnancy.

Dr. Green said it is strange we see so few cases here in Boston compared with the number of cases reported elsewhere. He has particularly borne these cases in mind, and has never yet found a case, nor has he found that he has overlooked any. Some surgeons in Philadelphia have reported as many as six cases of tubal pregnancy in a year.

Dr. Baker said he had seen twelve cases in the past nine years.

Dr. Strong had seen four cases, and he believed that it was generally possible to make a diagnosis from the symptoms. In one case, however, all the classical symptoms of extra-uterine pregnancy were present, namely, cessation of true menstruation with a bloody discharge, sudden severe pain and collapse. A mass was felt on the left side of the pelvis; she was operated on in the Massachusetts General Hospital, and a small ovarian tumor was found, and not, as was expected, a case of tubal pregnancy.

Dr. Kaan spoke of a case which suggested tubal pregnancy, which in a short time became uterine, and he wondered whether these cases were not often found and operated on at once — a fact which would account for the large number of cases reported by some operators.

Dr. Blake reported some more

GYNECOLOGICAL CASES FROM THE BOSTON CITY HOSPITAL,

and showed specimens of fibroids.

Dr. Baker said he saw once in a while a subserous fibroid that departed from the usual custom, and gave pain by pressing either on the rectum or the bladder.

Dr. Haven said that in one of his cases the distress from a small fibroid pressing on the bladder was so great that laparotomy was required.

Dr. Strong believed that removal of fibroids by laparotomy would be done more and more in the future, as it entails so much less danger than the operation of hysterectomy. He had recently removed a fibroid weighing six and one-half pounds.

Dr. Harrington said that the danger in the removal of large fibroids with thick pedicles was that of hæmorrhage and shock, and he thought that curetting, even if it was required every few weeks, was preferable.

Dr. Baker showed specimens of cystic ovaries from a patient of twenty-eight years. She had suffered pain, painful micturition and constipation. On opening one of the cysts a bloody fluid poured out, and the patient became collapsed, but promptly recovered on flushing the abdomen with warm water. The same thing occurred in opening the other ovary, and it seemed as if the patient would die, but flushing with warm water again revived her, and the patient is now doing perfectly well. He wondered whether the collapse could have been due to the irritating effect of the fluid in the peritoneal cavity.

Dr. Reynolds suggested that the sudden relief of the tension in the ovaries might have caused the collapse.

Dr. Harrington did not think that either explanation was the correct one, or it would have been seen in other cases.

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THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON GENERAL MEDICINE.

Stated Meeting, December 15, 1891, Francis Delafield, M.D., chairman.

Dr. H. P. Loomis read a paper entitled

A STUDY OF THE PROCESSES WHICH RESULTS IN THE ARREST OR CURE OF PULMONARY PHTHISIS.

He stated that he had made a series of observations extending over the past two years for the purpose of determining the following points:

(1) In what proportion of cases met with on the autopsy table are found the evidences of cured pulmonary tuberculosis?

(2) What are the gross and microscopical appearances presented by the lungs in these cases, and by what histological changes was the cure effected?

(3) After the lungs are healed, are tubercle still present in them?

(4) How often are the evidences of localized or general adhesive pleurisy found, and what effect have such pleuritic changes had on the pulmonary structure?

Of 1,146 autopsies at Bellevue Hospital, 383 were made on persons who either died from tuberculosis or showed in their organs an active or chronic tubercular process. In the other 763 autopsies made on non-tubercular subjects, 276, or 36 per cent., showed lungs which were bound by organized adhesions, either general or local, to the chest wall; these organs being otherwise free from disease, 71, or over nine per cent. presented changes in the lung which he regarded as characteristic of healed pulmonary tuberculosis.

The post-mortem appearances in cases which might be regarded as cured, necessarily varied with the extent of the tuberculosis and the stage to which it had advanced before its arrest. On the basis of their gross appearances he grouped his cases under the following heads:

(1) That class in which the apex of the lung is found adherent to the costal pleura, with a puckered and depressed condition of its surface. Sixty of the 71 cases mentioned showed this condition. On cutting into the lung one or more dense fibro-cartilaginous nodules, varying in size from a cherry to a walnut, were seen beneath the depressed surface, or, if they were situated in the central portion of the upper lobe, they were generally connected with the surface by easily recognizable, dense bands of new connective tissue. In the centre of these nodules a chalky mass was often found, and this was frequently studded with sharp spiculæ as hard as bone. In a few cases the indurated portions of the lungs were not nodular, but diffuse and connected with the pleura. Connected with the thickened pleura were white septa running through the lungs, composed of a condensed cellular substance intermingled with fibrous tissue. Often all traces of alveoli had disappeared.

(2) Healed cavities. Six of the cases showed this condition, and they divided themselves into two forms: (*a*) Where the cavity was empty and communicated with a bronchus; the cavity being situated in the central portion of the lung, closed on all sides, and lined with a thick, dense fibrous or fibro-cartilaginous membrane sometimes half an inch in thickness. (*b*) Where the cavity was contracted to such an extent by the growth of fibrous tissue (often over an inch in thickness) that it was almost obliterated, and appeared as a linear cicatrix. The adjoining pulmonary tissue was generally found to be the seat of emphysema and to contain patches of interstitial pneumonia. These internal cicatrices were almost always accompanied by puckering of the corresponding surface of the lung with depression of the chest wall.

(3) Two cases came under his observation in which there had been a complete transformation of the whole of an upper lobe into a compact, homogeneous mass of fibrous tissue, without a vestige of pulmonary substance being left.

An examination of microscopical sections presenting the evidences of arrested and healed tubercular processes led Dr. Loomis to the following conclusions:

All fibrous developments result in induration, but it is not easy to determine how or why the tubercular processes were arrested, or how the final result is brought about. At the edge of the pulmonary tissue destroyed by the tubercular process, in many sections, new connective tissue could be seen just forming. This seemed to be derived from three sources:

(1) The intralobular connective tissue had been infiltrated with round cells which were being changed into new connective tissue cells. In some the intralobular septa had been increased ten-fold, and presented an effective barrier to the advance of the tubercular process. The new connective tissue was highly vascularized.

(2) New connective tissue was seen forming in the alveolar walls.

(3) The connective tissue around the vessels and bronchi had become greatly increased. The latter were often almost obliterated by the contractions of the new connective tissue, but the lumen of the pulmonary vessels was but slightly interfered with.

In some sections adhesions of the pleura seemed to be the first step in the development of new connective tissue in the lung substance, and the new fibrous tissues from the pleura and the intralobular septa offered, he thought, a dense barrier to the advance of the tuberculosis, while the incipient softening was not attended, as is usual, by the continued deposition of tubercle. The new connective tissue, by its contractions, encapsulated the tubercular area, compressed and rendered inert the cheesy masses, and limited the advance of cavities, reduced them in size, and finally caused them to cicatrize and entirely disappear. One fact especially impressed him, and that was the hyperæmic condition of the tissue surrounding the tubercular areas, where the same connective tissue was forming. Throughout the fibrous tissue new capillary vessels were everywhere seen. An unobstructed circulation and an intense hyperæmia were conditions so constantly present where recent fibroid processes were active, that they seemed to be essential to the cure of phthisis.

From fifteen lungs showing the characteristic lesions of healed phthisis, a number of microscopical sections were cut, and these were stained for tubercle bacilli; but in none were any bacilli found.

Inoculation experiments were conducted upon rabbits with the object of ascertaining whether the circumscribed fibrous nodules containing chalky or cheesy deposits, and found generally at the apex of the lungs, contained tubercle bacilli. The settlement of this point, he thought, was important, as this was the only means we had of determining whether phthisis is ever absolutely cured. Even a few bacilli remaining in an apparently healed area must of necessity always be a source of danger to the individual. These inoculation experiments showed that while in the majority of cases no tubercle bacilli could be demonstrated in the healed pulmonary areas, still the fact that they are found in certain instances where the disease had remained latent for an indefinite period, while the nodules presented the same appearance as in the other cases, emphasized the difficulty of determining just when all dangers from all phthisical processes have ceased. Dr. Loomis thought that we might here, perhaps, have an explanation of the sudden development of phthisis in those cases where a localized and perhaps forgotten tuberculosis from which apparent recovery has been made, suddenly redevelops.

In giving his conclusions, he said his microscopical examinations seemed to establish that fibrosis is the only method by which tuberculosis of the lungs can be recovered from. The gross description of the lungs which he had given he said was the natural grouping of those which had come under his observation. There was one suggestive fact discovered in his examinations, namely, that whenever the nodular mass or masses presenting the anatomical characteristics of healed phthisis were situated in the substance of a lobe, one or more broad and easily recognized bands of new connective tissue passed from the nodule to the pleura through the apparently healthy pulmonary tissue. At the place where the bands reached the surface of the lung evidences of a localized pleurisy were found, generally with adhesion of the two surfaces of the pleura. The appearance of these bands, so often repeated, suggested that some constant and determinable influences were at work, and he believed that in the study of the lymphatics and the distribution of pigment in the lungs, rested the explanation of their presence.

His examination of the lungs of cured phthisis convinced him that it is not the tubercle which undergoes evolution, but the normal connective tissues of the lungs which surrounds it, and of this connective tissue, it is the interlobular, assisted by that of the pleura, which first increases and is able to resist the advance of the destructive processes. If by any means the vessels in this tissue could be kept open and the capillaries filled with blood, fibrous processes would be established as the result of the irritation and the active congestion. If there was any virtue in Koch's tuberculin, high elevation, or certain indirect methods such as the pneumatic cabinet, might it not be due to the localized congestion which they excited? A microscopical examination of the lungs removed from three patients who had been treated for a long time by ininjections of Koch's tuberculin, showed a most intense active hyperæmia of all the vessels in and around the old fibroid areas at the apex of the lungs, while in these situations an unusual formation of new connective tissue was taking place. When once formed the fibrous growth acted as a bulwark to prevent the extension of the tubercle bacillus. In this way such tuberculous exudation as had occurred would be rendered abortive, and even large ulcerations would be healed and cicatrized by the newly-formed connective tissue. It was a well-known pathological fact that loss of the parenchymatous elements of a tissue or organ is followed by a new growth of connective tissue to take their place. It was necessary that the new growth should be pathological in intensity to be effective where there was much destruction of tissue.

Might not this rule be applied to the lungs to explain the conservative changes which take place in them? In phthisis the pulmonary parenchyma, being of a higher grade of vitality than the connective tissue, is acted upon and destroyed first by the tubercle bacilli. The surrounding connective tissue is stimulated to increased activity by the irritation which is produced, just as occurs in other places in the body, on the application of an irritant. Again, the parenchyma of the lungs being destroyed, the connective tissues must increase to fill the vacancy produced.

Dr. J. West Roosevelt said that from a clinical standpoint it was very important to remember that healed phthisis is not (clinically speaking) phthisis. It was not the kind of phthisis which came under our notice in practice. Doubtless we all saw cases of phthisis which we did not diagnosticate, and there was no reason why we should do so. In incipient phthisis it was well-known how very difficult it often was to make a diagnosis, and there were in all probability many cases of phthisis which recovered without coming under the physician's care at all.

Dr. Loomis had referred to the great frequency with which pleuritic adhesions were found in the cases examined by him after death (36 per cent.). Clinically, nothing like this percentage was noticed. He hoped that the Doctor would succeed in throwing some light on the dark subject of the lymphatics of the lung, as hitherto it had seemed utterly hopeless to try to understand the pulmonary lymph currents. He did not understand why Dr. Loomis held that pleuritic fibrous adhesions should be considered as secondary to phthisis. It seemed to him that they were merely a part of the phthisical process.

The Chairman, Dr. Delafield, said that in his paper Dr. Loomis had given an exact and complete description of the conditions which any one accustomed to making autopsies constantly meets with. For some time he had believed that the reasons for the apparent discrepancies which so often exist between the clinical history and the post-mortem appearances was this, that we have got so much in the habit of regarding all tuberculous inflammations as very serious, if not absolutely fatal, whereas, it was unquestionably true that a tuberculous inflammation, if it occupied only a small area in the body, could be a very little matter; provided it remained confined to a small part. He was convinced that a large number of persons have a very small tuberculous inflammation of a small part of the lung which never even makes them sick. The inflammation runs its course, and they recover from it. Afterwards, when they die from some other cause, the evidences of the previous tuberculous trouble are found at the autopsy.

When larger areas were involved, the inflammation might run its course also, but so much of the lung would have been implicated that such persons could hardly be called very healthy. There would be no longer an active inflammatory process, but the lung would always remain more or less damaged.

As regards the healing of tuberculous lungs by the formation of fibrous tissue, this was a question of very great importance. The presence in the lung of tubercle bacilli was of itself of no consequence. But the bacilli were of consequence when they had excited an inflammatory process. This process either went on to death or underwent healing. These things might happen:

(1) We may have a simple exudative inflammation, with the formation of its characteristic products; and all this exudation may be absorbed and disappear from the lung.

(2) We may have the formation of new connective tissue; and such tissue has very little tendency to disappear. On the other hand, it has a tendency to become changed into a denser connective tissue.

This did not seem to him to be a barrier to further tuberculous trouble, as Dr. Loomis had contended. The only thing that could happen was that it could be changed to new connective tissue, and it was not, in his opinion, a source of protection against tuberculosis. The paper was a genuine "dead house paper," and it contained an accurate description of a very real thing. The only question was as to how that real thing was to be interpreted.

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Recent Literature.

A Practical Treatise on the Diseases of Women. By T. Gaillard Thomas, M.D. Sixth edition. Enlarged and thoroughly revised by Paul F. Mundé, M.D. Philadelphia: Lea Brothers & Co. 1891.

The profession has sadly felt the want of a text-book on the diseases of women, which should be comprehensive, and at the same time not diffuse, systematically arranged so as to be easily grasped by the student of limited experience, and which should embrace the wonderful advances which have been made within the last two decades. Fifteen or twenty years ago, Thomas's work fulfilled these conditions, and the announcement that a new edition was about to be issued, revised by so competent a writer as Dr. Mundé, was hailed with delight.

The examination of the work does not in the main disappoint the expectations which were entertained. Dr. Mundé brings to his work a most practical knowledge of the subjects of which he treats, and an exceptional acquaintance with the world's literature of this important branch of medicine. The result is, what is perhaps on the whole, the best practical treatise on the subject in the English language. The original work is preserved as a basis, but amplified and enriched with the results of modern research. Much has been interspersed with the old material, and several new chapters added.

The difficulties inherent in the task of revising another man's work have been in the main successfully overcome. The only criticism we have to make is that in the new form it has, perhaps, lost a little of its value as a text-book. A text-book on any subject should be simple, definite and not too diffuse.

Where differences of opinion have arisen between the author and the revisor, both views have been fully stated. That adds to the value of the book as one of reference for practitioners who are competent to decide between conflicting claims, but may be of disadvantage to the student who should be taught definite facts and opinions.

In spite, however, of this possible objection, it is, as we have said, the best text-book we know, and will be of especial value to the general practitioner as well as to the specialist.

The illustrations are very satisfactory. Many of them are new, and are particularly clear and attractive. The book will undoubtedly meet with a favorable reception from the profession.

The Comparative Anatomy of the Domesticated Animals. By A. Chauveau, M.D., LL.D. Revised and enlarged, with the Co-operation of S. Arloing. Second English Edition, translated and edited by George Fleming, C.B., LL.D., etc. With 585 illustrations. New York: D. Appleton & Co. 1891.

It is some eighteen years since we reviewed the first English edition of this classical work. We are told in the preface of the volume before us that it has since been several times reprinted. The present edition is a translation of the last French one, which appeared in 1890. The work is a very valuable one. The anatomy of the horse is the basis of the book, but there are frequent comparisons, not only with the structure of man, but with that of other animals. The list of these has been increased, the anatomy of the ass, mule, camel, and rabbit having been added. Moreover, recent progress has been noted. The section on the brain is much enlarged. We cannot give it unqualified praise, for we do not believe that the interpretation of the convolutions would be accepted as satisfactory by the best cerebral anatomists. We find nothing about cerebral localization, nor any hint at a relation between the formation of the brain and the peculiarities of faculties in different animals. In spite of shortcomings of this kind, we are very glad to welcome this new edition of an old friend. T. D.

The Diagnosis and Treatment of Extra-Uterine Pregnancy. By John Strahan, M.D., etc. 8vo, pp. 125. Philadelphia: P. Blakiston, Son & Co. 1889.

This is the Jenks Prize Essay of the College of Physicians of Philadelphia for the year 1889, the first award under the deed of trust. It is an essay of remarkable excellence. The style is clear; the difficulties of accurate diagnosis are carefully considered; and the treatment is systematically laid down for the various phases in which extra-uterine fœtation presents itself. It is a scholarly work and will prove eminently useful to all who seek to fit themselves to deal with this most important and difficult subject in obstetric surgery.

A Treatise on Practical Anatomy for Students of Anatomy and Surgery. By Henry C. Bœnning, M.D., Lecturer on Anatomy and Surgery in the Philadelphia School of Anatomy, etc. Illustrated with 198 wood-engravings. Philadelphia and London: F. A. Davis, Publisher. 1891.

It is hard to guess what need this work was expected to fill. In parts it is no better than a compendium, and in others it gives glimpses of real merit. As a whole it is quite unsatisfactory. It certainly cannot pretend to rank as a first-class anatomy. It cannot take the place of any of the great text-books. On the other hand it does not have enough merits of its own to make it a valuable adjunct to them.

The Medical News Visiting List for 1892. Philadelphia: Lea Bros. & Co.

This is a very well-known visiting list. The present edition exhibits all the good points of its predecessors, besides having been revised and, where that was possible, improved.

La Grippe. — "Well, Dennis," said the judge, "so you've had the grip. Heard you had a bad time?" — "'Tis a terrible disease, sir, sure enough," said Dennis, "I thought I would never get over it. Sure I was sick fifteen days after I got well, sir!"

It is estimated that getting born costs the people of the United States $250,000,000 annually; getting married, $300,000,000, and getting buried, $75,000,000. To the economical mind these figures will at once suggest the most advantageous course of conduct.

THE BOSTON

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THE PRESENT INFLUENZA EPIDEMIC.

The reports intimate that the present influenza epidemic has been quite as widespread and quite as disastrous as in the two previous years. Indeed in some localities in New England the epidemic has been even more severe and fatal than during the winter seasons of 1890 and 1891.

Three principal types, as usual, have been prevalent, the thoracic, the gastro-intestinal and the nervous, with a very decided predominance of thoracic cases. Indeed, in the majority of instances, the physician finds his patient suffering from an attack of acute bronchial catarrh. The fever, however, runs higher, the cough and respiratory distress are somewhat more severe, the symptoms of general prostration are greater, and convalescence is much more tedious than in ordinary bronchitis. It has been remarked that what especially differentiates the "grippal" from common bronchitis is the prostration of the forces. This renders the administration of stimulants from the earliest stages necessary, and explains the unfavorable effect which frequently attends the use of antimonials and even veratrum viride.

Another peculiarity of the disease is the proneness which the catarrhal inflammation manifests to spread to the capillary bronchi, and even to invade the lungs, not merely isolated lobules, but whole lobes. It is only in a comparatively small number of cases that the influenza is pneumonic from the onset. After several days of attendance, during which only the signs of general bronchitis are present, the physician, expecting defervescence, is surprised at his morning or evening visit to find a decided increase of the fever (103° to 105° F.) and bronchial breathing and bronchophony at the base of one of the lungs. The cough previously loose becomes dry, paroxysmal, hacking and painful; when expectoration is established, the sputa are nummulated, purulent and may be streaked with blood. Here an examination of the sputum will often reveal the lanceolated micrococcus; true pneumonia has implanted itself on soil prepared by the influenza. It is needless to say that it is in the careless, the feeble and the aged that this complication or sequel of the influenza is generally seen. Naturally the supervention of pneumonia causes no little alarm, but, dangerous as it may be, a considerable proportion of cases so affected recover. After a stationary period of a few days, the area of consolidation steadily diminishes, and convalescence is established.

But in a certain percentage of patients the pneumonia is primary instead of secondary. This form differs somewhat from that of ordinary pneumonia, and from their experience during the present epidemic many practitioners in New England will recognize the description of "grippal pneumonia, *d'emblée*," given by a foreign contemporary: "The initial chill is wanting; the pain in the side is generally of little intensity; the fine, dry crepitation of frank pneumonia is rarely heard, but instead the sub-crepitant râle; the souffle is less rude than in the common form; the sputa viscous and little, if at all, streaked with blood differ scarcely from those of simple bronchitis. In general, the dyspnœa is intense and out of proportion to the extent of the phlegmasia; the pulse is of average frequency, is soft and without resistance. Some patients are delirious and have subsultus tendinum; all are prostrated as in grave fevers. These pneumonias often pass to suppuration and are complicated with albuminuria, with meningitis, with endocarditis. They may also terminate in gangrene." [1]

In a patient that is old and cachectic, the pneumonic inflammation may not pass beyond the stage of intense congestion. The patient dies in a few hours asphyxiated and in cardiac asystole. Of course, when the heart is fatty or feeble from other causes, as uncompensated valvular disease, the probabilities of rather speedy death from congestion, capillary bronchitis, pneumonic consolidation, etc., are preponderant.

It is to be understood that in the present, as in previous epidemics, the majority of cases are hardly more serious than if a given number of persons were simultaneously afflicted with a severe cold; the prostration following these mild cases is however considerable.

Every physician in general practice has had a few cases in which the nervous symptoms predominated. There is a violent headache comparable to migraine; this is an early and obstinate symptom. The patients have a sensation of constriction in the forehead and temple, and they often refer their pains to the back part of the orbits. There are also severe pains in the back and limbs with fatigue, depression, restlessness and insomnia. The rachialgia and feebleness of the limbs, the shooting pains in the members and joints have been (plausibly) referred to a localization of the virus of influenza in the spinal medulla. Sometimes the multiple neuralgias and the excessive enfeeblement of the limbs attending the attack bear a marked resemblance to the so-called infectious polyneuritis, and it is a sufficient fact in this connection that certain authorities (as Remak) have described a polyneuritis (quite typical) of "grippal" origin.

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[1] Ferdinand Widal.

We believe that fewer cases of the gastro-intestinal form of influenza have occurred in this epidemic than in the previous epidemics, yet instances are sufficiently common where, along with predominant manifestations on the part of the respiratory or nervous symptoms, there has been marked disturbance of the digestive organs, as shown by furred tongue and anorexia, nausea, vomiting, pain or a sensation of weight and oppression in the stomach, constipation or diarrhœa, etc.

Prevailing diseases (as cardiac, nephritic diseases, pulmonary tuberculosis) have been provoked to unwonted aggravation by the epidemic influence, and the mortality from these diseases has been greatly enhanced.

There are already some indications that the epidemic is on the wane. The overworked members of the medical fraternity in all parts of the country will welcome some material lightening of their burdens. Not a few physicians have averaged from twenty-five to forty calls a day all through this busy season.

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THE ANNUAL REPORT OF THE NEW YORK COUNTY VISITING COMMITTEE OF THE STATE CHARITIES' AID ASSOCIATION.

The Nineteenth Annual Report of the New York County Visiting Committee of the State Charities' Aid Association for Bellevue Hospital and the Public Institutions of the city, states that during the past year few changes were made in the institutions. Chief among them was the appointment of a trained supervising nurse for the Almshouse and Workhouse Female Hospitals, and the adoption of a system of probation for the nurses under her. It has thus become the acknowledged policy of the Department of Charities and Correction that all the sick under its charge should have trained care, although as yet the male patients fare less well in this respect than the women. Among the other improvements referred to are wards for women under arrest, nearly finished at Bellevue Hospital; the new pavilion for "waiting women," at the Maternity Hospital on Blackwell's Island, and the near completion of a new brick pavilion at the Female Insane Asylum.

During the winter and spring, Bellevue Hospital was overcrowded, and because of the large number of acute cases the work of the nurses was very heavy. The wards are declared to have been in very good order throughout the year, although those under the care of the Mills' Training-school for male nurses, were, as usual, not so neatly kept as those cared for by the female nurses. The food is said to have been good and abundant, and the laundry-work better done than formerly. Much complaint is made of the condition of the City Morgue, which is contiguous to Bellevue, and a removal is urged. The report of the alcoholic ward shows that the number of patients admitted during the year was 2,753 males, and 1,100 females, an increase of 96 in the number of women, and a decrease of 129 in the number of men. These wards were much crowded during the year, and all sorts of makeshifts were used to accommodate the patients.

In regard to the Bellevue Training-school for Nurses, the following statistics are given: During the year there were 1,375 applicants for admission to the school, from which the 30 who were admitted were carefully selected. A class of 20 graduated. There were 1,215 calls for nurses, 26 of them being to fill positions in hospitals. Of these, 12 of the most important were supplied; but only a very small proportion of the calls for private nursing could be filled from graduates of the school. The report closes with a number of recommendations, among the most important of which is one for better accommodation for the city's insane through the enlargement of the settlement at Islip and the erection of decent and substantial buildings in place of the wretched pavilions on Blackwell's Island.

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THE DREXEL INSTITUTE.

The Drexel Institute was lately dedicated in Philadelphia. The buildings and grounds have cost half a million dollars, and it has an endowment producing an income of $50,000 annually. There is the beginning of a library. These are the gifts of Mr. Anthony J. Drexel. In addition, Mr. G. W. Childs has presented a famous collection of rare prints, manuscripts, relics and autographs. There is a system of free scholarships, but admission, as a rule, is to be gained by a small fee.

The training to be given is designed to keep in mind practical results, and the diploma is expected to secure for the young man or young woman graduating, a remunerative position in the actual every-day work of the daily life of the busy world.

There is to be a course of study and practice in art; a scientific department, with laboratories; a department of mechanic arts; a technical department. The provision for all this is most generous, and the aims so admirable — although not unique — that they call forth the best wishes of those wishing well to humanity, wherever they may dwell.

We confess, however, as humanitarians and hygienists and as advocates of preventive medicine, our enthusiasm is most aroused by the announcement that there is to be a department of domestic economy, which will be thoroughly practical. It almost makes us wish that we had been born later and born in Philadelphia. If it fulfils its purposes there will be no longer any excuse for celibacy. The course will extend over two years, girls and young women will be taught cooking in a model kitchen, and meals will be spread in a model dining-room. Will they, upon graduation, refuse to cook except in model kitchens, or to spread meals except in model dining-rooms? Probably they will, but it will matter less, for, in addition, they *may* learn millinery, dress-making, the building, sanitation, decoration and management of the house, household economy, human physiology and hygiene, business forms and accounts, free-hand drawing and elementary economies.

Our heart goes out to this Institute and its founder, and especially to its department of domestic economy. To the graduates of this department we should like to extend freely the right of suffrage — with a proviso that their interests in domestic economy should not thereby be curtailed; and also the right hand of fellowship at the hymeneal altar.

MEDICAL NOTES.

The Duke of Clarence. — It is reported that the Duke of Clarence, eldest son of the Prince of Wales, is seriously ill at Sandringham. He is suffering from a severe attack of influenza, complicated with pneumonia.

Yellow Fever. — Recent reports from Brazil indicate that the epidemic of yellow fever shows little or no signs of abating at Santos. At Rio Janeiro, the conditions are much better. Yellow fever is reported in the Island of Jamaica.

The Influenza, although disappearing in some localities which were early attacked, has recently broken out in a severe form in several cities and towns both in this country and in Europe. In some cases the localities now going through the height of the epidemic are in the vicinity of those which suffered severely some weeks ago.

The Influenza in Berlin. — At a meeting of the Berlin Society for Internal Medicine, held in December, the present epidemic was discussed. The first cases were observed early in November. Observations point to the probability that the disease clings to a locality without excluding the possibility of transmission from one person to another. The present epidemic was marked by severe complications, especially in those who were already suffering from organic lesions of the heart, lungs or kidneys, or who were over forty years of age. Recurrences in the same person are not frequent and are generally mild in their course.

The American Journal of Obstetrics. — Dr. Paul F. Mundé has retired from the editorial management of the journal, a position which he has occupied for eighteen years. It will hereafter be edited by Dr. Brooks H. Wells.

Annals of Ophthalmology and Otology. — Under the above title a new quarterly journal appears this month for the first time. It will contain original articles and reviews of current literature connected with the title-subjects, and also with rhinology and laryngology. It is published in Kansas City, under the editorial management of Dr. James P. Parker.

The Medical Secretary of Public Health. — In accordance with a resolution passed by the American Medical Association at its last meeting, the committee appointed for the purpose have submitted a petition to Congress setting forth the usefulness of the medical profession and praying for the establishment of a Medical Secretary of Public Health, who shall be a cabinet officer, and whose department shall take charge of all matters connected with disease and preventive medicine.

The Marine-Hospital Service. — The President has nominated Dr. Walter W. Wyman supervising surgeon-general. Dr. Wyman had been temporarily appointed to this position during the recess of Congress. Dr. John B. Hamilton, formerly supervising surgeon-general, who resigned to accept a position in Rush Medical College, in Chicago, has been appointed surgeon.

The Health of Florence. — Sir Douglas Galton has just issued a report with regard to the sanitary condition of Florence. During the last year out of 185,000 inhabitants there were 137 deaths from typhoid. The death-rate of the city, which twenty years ago was 36 per thousand has been reduced to 25, which was last year's rate. He thinks that by a thorough revision of the drainage system, Florence can be made one of the most healthy cities of Europe.

Poisonous American Apples. — The *Horticultural Times* of London has demanded of the Board of Trade that the importation of American apples be forbidden, because apple trees in America are sprayed with Paris green, to protect the fruit against the codling moth. It has been shown, however, that but one pound of Paris green is used to one hundred and fifty gallons of water, and that the spraying is done while the apples are very small, and that the amount of poison which could possibly remain on ripe apples is practically nothing.

American Hog Products in France. — According to the new Custom House Law, American ham and bacon can be imported into France through the ports of Dunkirk, Havre, Bordeaux and Marseilles, where consignments will be examined by experts whose services will be paid for by the importer. These experts are to be appointed by the Minister of Agriculture. No American meat will be allowed to pass the Custom House unless it has been examined and certified as sound by the inspectors in question.

The Depopulation of France. — During the year 1890, there were 38,000 more deaths than births reported in France. This very large diminution was in part, due to the influenza. It has been computed that the time required to double the population, according to the rate of increase of the last year, is in England 53 years; in Germany 77 years; in Russia and Italy 99 years; in Austria 139 years; and in France 230 years. In France, not only are there fewer marriages, but the age at which marriages take place has advanced so that now the mean age for men is about thirty years and for women twenty-five years. The average number of children is three.

Physicians for Jewish Colonies.—An advertisement appears in the German journals asking for volunteers among Jewish physicians to take charge of medical affairs in the Jewish colonies which have been established in South America. Applicants must sign a contract for three years' service, they must speak German and have had hospital experience. Those who can speak the Russian Polish dialect are preferred.

BOSTON AND NEW ENGLAND.

The Will of Dr. Buckminster Brown. — By the will of the late Dr. Brown, Harvard College will ultimately receive $40,000, to found a professorship of orthopedic surgery, to be called the "Dr. Buckminster Brown Professorship." The books of the testator, relating to orthopedic surgery are given to Harvard College, the remainder of his medical works are given to the Boston Medical Library Association.

Medical Inspection of the Boston Public Schools.—It was expected that the plan of the Board of Health, to establish medical inspection in the public schools, would go into effect the first of the year, but by a rule governing the use of the special appropriation of $5,000 made for this purpose by the last Common Council, most of the money has already been used for other purposes, and it has been thought advisable to wait until the present city government makes a new appropriation before putting the plan into operation.

Mortality of Boston for the Week.— The total number of deaths last week was the highest since the week ending January 11, 1890, when the last influenza epidemic reached its height. The deaths reported as due to influenza last week were twelve uncomplicated, and 32 associated with other diseases. The deaths reported to the Board of Health for the week were 339, making the death-rate 38.2. Of this number the deaths from consumption were 39, pneumonia 79, heart-disease 30, bronchitis 38. The number who died over sixty years of age was 116.

Deaths in Boston in 1891. — The total number of deaths in Boston last year was 10,571, against 10,181 in 1890. The annual death-rate was 23.02 per thousand, while in 1890 it was 22.70, and in 1889 it was 24. The percentage of deaths from zymotic diseases to total mortality of 1891 was 15.27, which is lower than ever before in the history of the Board of Health. Consumption caused 1,352 deaths last year, which is less by 143 than in 1890. Pneumonia 1,149, as against 1,093 in the preceding year. Bronchitis 551, as against 453 in 1890. This increase is largely due to the influenza in December. Cholera infantum caused 597 deaths in 1891, 498 in 1890. The deaths from diphtheria were 232, which is small in comparison with 401, the number in 1890. The months of July and December had a greater number of deaths than any of the other months of the year; the record for July being 1,005, and that for December 1,133.

The Death-Rate of Lynn. — During the last year, there were 965 deaths in Lynn, a death-rate of about sixteen and a half per thousand. This is the lowest rate recorded in the city for several years. During December seventeen deaths were reported as due to influenza.

Massachusetts Legislature.— The joint standing committees on drainage, charitable institutions and public health are as follows: *Drainage* — (Senate) Clark, Franklin; Drury, Middlesex; Eaton, Norfolk. (House) Lane, Boston; Low, Brockton; Fiske, Ashland; Hale, Framingham; Dodge, Natick; Dole, Newburyport; Breen, Boston; Quinn, Boston. *Public Charitable Institutions* — (Senate) Meade, Essex; Reade, Suffolk; Nutter, Plymouth. (House) Blanchard, Boston; Sawyer, Danvers; Clark, Palmer; Bicknell, Plymouth; Savage, Lowell; Fletcher, Belmont; Gay, Northampton; Heald, Pepperell. *Public Health* — (Senate) Nichols, Worcester; Merritt, Hampden. (House) Blodgett, West Brookfield; Chance, Boston; Carter, Williamsburg; Dodge, Natick; Larkin, Tolland; French, Gloucester; Casey, Boston.

Tuberculosis of Cattle in New Hampshire. — The board of commissoners appointed by the last legislature to exterminate contagious and infectious diseases among cattle have made a report to the governor. They have condemned 111 animals infected with tuberculosis. In several instances the disease was traced to herds of cattle brought from Massachusetts. On January 12th the commissioners issued a circular to the boards of selectmen, as follows: "You are hereby notified that a cattle quarantine against the State of Massachusetts is this day ordered. You are directed to seize and hold in quarantine all cattle not intended for immediate slaughter coming into this State from Massachusetts after this date, and to notify this Board at once of such action. Cattle from Massachusetts intended for immediate slaughter will be subject to quarantine regulations if any contagious or infectious disease is found among them; otherwise they will be allowed to proceed to their destination. All other cattle brought into the State without a permit from this Board, must be held by you, as above directed, until this order is cancelled."

NEW YORK.

Mortality for the Week. — The number of deaths reported in the city for the week ending January 2d, was 969, an increase of 80 over the previous week, and showing an annual death-rate of 26.63 per thousand of the estimated population. Of this number 86 were attributed to influenza and complications.

The Doctor's Weekly, "a newspaper devoted to the interest of the medical profession," was started with the new year by Dr. Ferdinand King, recently editor of *The International Journal of Surgery.*

Tuberculocidin. — The first instalment of tuberculocidin, or Kleb's modified tuberculin, has been received at the St. Mark's Hospital.

Bequests to Public Institutions.— By the will of Mrs. Mary Stuart, widow of the late Robert L. Stuart, several million dollars is given to religious and charitable institutions and societies. Among these are the New York Cancer Hospital, which gets $25,000, the Presbyterian Hospital, the Northwestern Dispensary, the Home for Incurables, the New York Eye and Ear Hospital, the Woman's Hospital, the Manhattan Eye and Ear Hospital, and the Society for the Relief of the Ruptured and Crippled.

Miscellany.

VITAL STATISTICS OF NEW YORK CITY, 1891.

During the year just closed the total number of deaths reported to the New York Bureau of Vital Statistics was 43,634, showing an annual death-rate of 25.96 per thousand of the estimated population. In the year 1890 the number of deaths reported was 40,230, and the annual death-rate 24.66. The total number of births reported was 46,894, against 30,250 in 1890; this large increase being due to the fact that since last spring the Health Department has made special efforts to secure reports from physicians and midwives who were negligent in reporting births.

The comparative number of deaths from certain diseases in the two years is shown in the following table:

	1891.	1890.
Influenza	838	314
Pneumonia	5,817	5,041
Phthisis	5,160	5,523
Bronchitis	1,834	2,037
Bright's disease	2,503	2,420
Disease of the heart	2,287	1,982
Diarrhœal diseases	3,585	3,349
Small-pox	2	2
Measles	664	726
Scarlet fever	1,221	406
Diphtheria	1,363	1,261
Whooping-cough	353	489
Cerebro-spinal meningitis	189	137
Typhoid fever	384	352

In the Bureau of Contagious Diseases there were reported 25,189 cases, which included nine of typhus fever, 1,329 of typhoid fever, 7,218 of scarlet fever, 11,863 of measles, 4.749 of diphtheria, and 21 of small-pox. The vaccinating corps made 109,213 vaccinations; of which 83,970 were revaccinations.

THERAPEUTIC NOTES.

Antidote for Hydrocyanic Acid.[1] — Professor Kobert has proved experimentally that hydrogen peroxide is a valuable antidote for hydrocyanic acid poisoning. It is to be given internally as well as subcutaneously until the odor of the acid can no longer be recognized in the exhalations and the symptoms subside.

The Toxicity of the Urine.[2] — Prompted by the view that various toxic products are eliminated in the urine in acute infectious diseases, Semmola, before the Académie de Médicine, expressed the thought that, by the injection of such urine in rabbits and guinea-pigs, the symptoms of the original disease would be reproduced. Such a procedure would constitute a valuable diagnostic aid. Thus, for instance, in a case of influenza-pneumonia, complicated by tetanic and eclamptic attacks, the injection of the urine should reproduce the symptoms in animals, and meningitis could be excluded.

Resorcin in Laryngeal Phthisis.[3] — Dr. Tymowsky considers resorcin the most convenient of all local applications, because it gives no pain, and need only be applied once a day. The solution must be of the strength of one hundred per cent. in cases of unhealthy-looking ulcers, which are undoubtedly of tuberculous character. At the same time inhalations of from two to five per cent. solution of resorcin may be substituted for those of cocaine.

Correspondence.

MEDICAL NOTES FROM JAPAN.

Tokyo, Japan, December 5, 1891.

Mr. Editor: — Through the kindness of Professor Bodtz, M.D., I visited the Imperial University Hospital. It is arranged in pavilions, with accommodations for two hundred patients of both sexes. A large number, are "tuberculous" — pulmonary, or otherwise.

Leprosy is not considered eminently contagious; and is not excluded from the general wards. I saw one case, of long standing, where the appearance was typical, but would scarcely attract attention on the street. It is observed here, that, of late, tuberculous affections are less numerous while leprosy has increased. The apparent relation of these two diseases may be explained by their bacilli being similar, if not identical.[1] A class of students were receiving clinical instruction at the hour of my visit, 9 A. M.

Dr. Ishiguro (surgeon-general of the army) very kindly gave me a card to Dr. Hori, surgeon in charge of the large hospital under direct control of the War Office. Several long, one-storied buildings, each separate from the others, afford room for the reception of four hundred persons.

By courtesy of Dr. Adachi (senior surgeon of the army) and Dr. Nalceshiana (staff surgeon), I was enabled to see the Army Medical College (Gun-igakkō) and Museum, a new brick building. The college has, at present, forty officers, as students. Everything is well arranged, with a view to practical results. Appliances for microscopic and bacteriological work were in place. The museum contains a good collection, illustrative of various means for care of the sick in field and hospital — some from different foreign sources. Among the pathological specimens is the extensive exhibit of lesions of bones, from the last civil war. In the Imperial University, German is the foreign language used for medical instruction; law and chemistry are taught by means of French and English.

I am indebted to Dr. W. N. Whitney (official interpreter to the United States legation) for an opportunity to observe the work at the Akasaka Hospital (Ophthalmic) under his professional direction. The beginning of this charitable and educational enterprise was made in 1883 by Dr. Whitney and Dr. Yoshida (now of the Japanese navy). The building in use was opened for patients in 1886, Dr. Mitamura being superintendent. This institution is supported by voluntary donations, foreign and Japanese. During the past five years these have amounted to about five thousand dollars. The medical work has been conducted by three attending surgeons, one house-surgeon, one apothecary, one student and two nurses. From June 30, 1890 to

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[1] Pharm. Central, 570.

[2] American Journal of Medical Science, December.

[1] In the Hawaiian Islands lepers are promptly removed from the general community to an isolated locality.

[3] Lancet, November 21st.

June 30, 1891, the number of in-patients treated was 210; number of days under treatment, 2,732; number of dispensary consultations, 4,952; number of days medicine given, 12,306. Most of those attending are among the poorer classes, yet over one-fourth the running expenses has been paid by the patients. Some come more than sixty miles for medical care. The present structure has space for forty beds. Further extension is needed to provide for holding the dispensary service separate from the wards.

There is much blindness, due largely to keratitis consequent upon "disease" and uncleanliness during infantile life and later years. Many cases are doubtless the result of exposure to sun, wind and dust which children undergo. Being fastened securely to the shoulders of a nurse, herself quite young, the little one often cries and kicks in vain, frequently falling asleep with the face toward the hot sun.

It is said here, that rice-eating nations are less affected with cataract than other peoples; also, that rickets and consequent deformities are common among the Chinese and Japanese. Very truly yours,

F. B. Stephenson, *Surgeon, U. S. N.*

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VINDICATION OF DR. STERLING POMEROY.

Boston, Boylston Street, January 7, 1891.

Mr. Editor: — At a complimentary dinner given Dr. Sterling Pomeroy, January 6th, at the Hotel Thorndike, by his friends, which I had the pleasure of attending, I gave expression to a few thoughts for which I request publication in the Journal.

Dr. Pomeroy, as you know, has just been exonerated in the Gleason divorce trial from any unprofessional conduct; and it is on account of his trying position that I have been led to express myself as I have here:

"When we are sick it is not the lawyer we are looking for; it is not the priest; but it is the best physician in the town we want; and we want him bad. And he comes, perhaps without his dinner, and perhaps without his sleep; for he's everybody's servant, and his masters cannot wait. By means of his trained skill and strength of body and mind, he works a cure. And his patient praises, and pays him. And both are satisfied.

"Again he is summoned, and his professional skill and patience are taxed as never before. For weeks he works, and for poor pay, or goes unpaid. For it is a servant's business to come as he is bid. And again he is praised — proportionately, perhaps.

"There are times — and times — and times when he ought to be blessed; and there are times, I know, when it were better he were condemned.

"Now if it were disease alone — disease *per se* — that he were treating, he would succeed. We should all succeed, for I believe that every fever ill to which poor human flesh is prone will in time find its end in a specific cure. It is not the disease then, but it is that indefinable factor in human beings — spirituality *perverted* — to which the good name of men of our calling is often sacrificed.

"We have to treat bodies and minds. The bodies we can take care of; but the minds — expressing themselves in all sorts of jealousies, sentimentalities and hypochondrical ways — no matter what precautions we take, we cannot at all times escape these. Neither can we escape the suspicions of those who give credence, or partial credence, to the first rumor — the world at large. It is only when the minds and morals of the people have been educated up to the level of the morality and mentality of the physician of to-day that we can escape the imputations cast upon us, and that we can do our greatest work.

"I would like to see my eighty-first grandfather back. Probably he lived in southwestern Asia, and spent his days among the trees. I wonder what his language was. A succession of growls? Ten generations ago he was a garrulous old Gaul, and had his den on the head-waters of the Rhine. When in the evolution of the race and the growth of spirituality, jealousy, envy, hatred and malice and all uncharitableness are wiped out, — and the world is moving toward that end, — we shall see for all men of whatever avocation, not slander and calumny, but honor and justice for good work done." Very truly yours,

J. Warren Achorn, M.D.

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ADDRESSES WANTED.

Massachusetts Medical Society, Treasurer's Office,
No. 440 West Chester Park.

Boston, January 7, 1892.

Mr. Editor: — If any of your readers can and will inform me of the present whereabouts of

Thomas Goff Simons, M.D. (Bellevue), 1876, who became a Fellow, September 20, 1887, at Springfield, then thirty-three years of age, or of

Theodore Everett, M.D. (Harv.), who became a Fellow, October 17, 1888, at Haverhill, then twenty-six years of age, I will be obliged.

Dr. Simons was a student at Montreal University, but not a graduate, was three years at Bellevue, and studied also with Dr. W. V. Wallace, of Providence, R. I. He practiced at Springfield, his last known address.

Dr. Everett was educated at Phillips Academy, Exeter, studied medicine with Dr. Allan Mott-Ring, of Arlington Heights, and at the New York University and Harvard Medical Schools. He practiced at Haverhill, and then at Cambridge, his last known address.

Yours very truly,

Edward Jacob Forster, *Treasurer.*

RECORD OF MORTALITY

For the Week ending Saturday, December 26, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	889	321	13.42	27.06	2.53	.44	7.37
Chicago . . .	1,099,850	549	227	20.34	17.64	1.98	9.36	4.68
Philadelphia .	1,046,964	718	197	12.32	23.94	2.10	.70	8.12
Brooklyn . .	806,343	426	151	15.64	27.14	3.22	.46	.89
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	292	72	8.16	29.24	2.04	1.02	3.74
Baltimore . .	434,439	244	81	12.30	17.22	3.69	.82	6.15
Cincinnati . .	296,908	207	53	6.72	19.36	.48	1.44	4.83
Cleveland . .	262,000	84	32	24.51	19.35	1.29	1.29	18.06
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	—	—	—	—	—	—	—
Milwaukee . .	240,000	101	44	33.00	13.00	5.00	5.00	18.00
Washington .	230,392	115	39	13.05	21.75	—	2.61	6.96
Nashville . .	76,168	57	12	1.75	12.25	—	—	1.75
Charleston . .	65,165	42	11	2.38	11.90	—	—	2.38
Portland . . .	36,425	10	0	—	30.00	—	—	—
Worcester . .	84,655	48	15	6.24	35.36	—	4.32	—
Lowell . . .	77,696	35	14	5.72	25.74	—	2.86	—
Fall River . .	74,398	31	12	—	25.84	—	—	—
Cambridge . .	70,028	24	6	—	41.58	—	—	—
Lynn	55,727	28	5	14.28	21.42	10.71	—	—
Lawrence . .	44,654	47	11	8.52	46.34	2.13	—	—
Springfield . .	44,179	33	10	6.06	21.21	—	—	—
New Bedford .	40,733	33	8	3.03	9.09	—	—	—
Salem	30,801	15	2	—	6.66	—	—	—
Chelsea . . .	27,909	15	5	20.00	26.66	—	—	20.00
Haverhill . .	27,412	12	2	16.66	—	—	—	16.66
Taunton . . .	25,445	11	2	—	9.09	—	—	—
Gloucester . .	24,651	6	2	—	50.00	—	—	—
Newton . . .	24,379	11	1	—	18.18	—	—	—
Malden . . .	23,031	13	—	15.38	30.76	—	—	15.38
Fitchburg . .	22,037	9	4	11.11	11.11	—	—	11.11
Waltham . .	18,707	9	3	—	11.11	—	—	—
Pittsfield . .	17,281	4	0	25.00	—	—	—	25.00
Quincy . . .	16,723	7	1	14.28	14.28	—	14.28	—
Newburyport .	13,947	5	3	—	—	—	—	—
Medford . . .	11,079	3	0	—	33.33	—	—	—
Clinton . . .	10,424	—	—	—	—	—	—	—
Hyde Park . .	10,193	8	2	12.50	50.00	—	—	—
Peabody . . .	10,158	1	0	—	—	—	—	—

Deaths reported 4,200: under five years of age, 1,348; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 559, acute lung diseases 873, consumption 386, diphtheria and croup 280, scarlet fever 89, typhoid fever 84, diarrhœal diseases 41, whooping-cough 23, erysipelas 15, measles 12, cerebro-spinal meningitis 12, malarial fever 3.

From diarrhœal diseases New York 13, Chicago 12, Brooklyn 5, Philadelphia 3, Baltimore 2, Milwaukee, Worcester, Lowell, Lynn, Springfield, and Hyde Park 1 each. From whooping-cough Philadelphia 5, New York 4, Boston 3, Brooklyn and Milwaukee 2 each, Baltimore, Cleveland, Washington and Springfield 1 each. From erysipelas New York 6, Chicago 3, Philadelphia, Brooklyn, Boston, Baltimore, Cleveland and Washington 1 each. From measles Chicago and Brooklyn 4 each, New York and Milwaukee, 2 each. From cerebro-spinal meningitis Chicago 6, Washington 2, New York, Philadelphia, Brooklyn and New Bedford 1 each. From malarial fever New York 2, Cleveland 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending December 19th, the death-rate was 19.1. Deaths reported 3,440: acute diseases of the respiratory organs (London) 337, whooping-cough 132, measles 106, diphtheria 47, fever 46, diarrhœa 39.

The death-rates ranged from 10.8 in Nottingham to 32.8 in Newcastle-on-Tyne, Birmingham 16.5, Bradford 16.6, Hull 17.1, Leeds 20.1, Liecester 17.6, Liverpool 24.1, London 17.9, Manchester 21.6, Sheffield 21.5, Sunderland 30.6.

In Edinburgh 26.9, Glasgow 24.6, Dublin 33.9.

METEOROLOGICAL RECORD,

For the week ending December 26, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...20	30.45	33	40	27	73	79	76	N.W.	N.	5	1	F.	O.	
M..21	30.43	39	44	35	79	100	90	N.W.	S.E.	2	9	G.	G.	
T..22	30.29	44	53	35	96	87	92	S.W.	S.W.	11	22	O.	O.	
W.23	30.01	58	64	52	94	81	88	S.W.	S.W.	12	27	R.	G.	.42
T..24	30.12	43	46	41	75	100	88	N.	N.E.	13	18	O.	R.	.42
F..25	30.17	39	41	38	96	92	94	N.	N.E.	15	2	R.	O.	.16
S..26	29.76	48	57	39	92	91	92	S.	S.W.	9	21	O.	O.	.22
☞	30.18	44	49	38	86	90	89			10	14			.17

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 2, 1892, TO JANUARY 9, 1892.

Leave of absence for one month on surgeon's certificate of disability is granted First-Lieut. James D. Glennan, assistant surgeon, U. S. A., with permission to go beyond the limits of the department.

Leave of absence on surgeon's certificate of disability granted Captain Jefferson R. Kean, assistant surgeon, U. S. A., is extended three months on account of sickness.

Major Julius H. Patzki, surgeon, and Captain Henry G. Burton, assistant surgeon, having been found incapacitated for active service by the Army Retiring Boards, will proceed to their homes and on arrival there report by letter to the Adjutant General of the Army.

Leave of absence for six months with permission to go beyond the sea, to take effect on or about January 27, 1892, is granted Major James F. Kimball, surgeon, U. S. A.

Major Alfred A. Woodhull, surgeon, U. S. A., having returned to the United States, is relieved from further duty and station at Fort Sherman, Idaho, and assigned to temporary duty in New York City.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 9, 1892.

M. R. Pigott, assistant surgeon, from hospital, Mare Island, Col , and to the U. S. S. "Baltimore."

E. R. Stilt, assistant surgeon, from U. S. S. "Baltimore" ordered home and two months' leave of absence granted.

M. S. Guest, assistant surgeon, to the Navy Yard, Norfolk, Va.

C. H. White, medical inspector, from the U. S. S. "Charleston," proceed home and granted two months' leave.

J. B. Parker, surgeon, ordered to the U. S. S. "Charleston."

SOCIETY NOTICE.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene, will meet at 19 Boylston Place, on Wednesday, January 20th, at 7.45 o'clock.

In Memoriam. — David Humphries Storer, George Hinckley Lyman.

Dr. Storer. — Dr. S. L. Abbott, Dr. G. J. Townsend, of Natick, Dr. O W. Holmes, Dr. A. D. Sinclair, Dr. G. G. Tarbell, Dr. A. T. Cabot, and Dr. E. G. Cutler are expected to make a few remarks.

Dr. Lyman. — Dr. C. Ellery Stedman, of Dorchester, Dr. H. W. Williams, Dr. J. G. Blake, Dr. A. L. Mason, and Dr. George B. Shattuck will speak.

Albert N. Blodgett, M.D., *Sec'y*, 390 Boylston St.
E. G. Cutler, M.D., *Chairman.*

MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED.

The Massachusetts School for the Feeble-Minded has been moved to Waltham, near the Clematis Brook Stations of the Fitchburg and the Massachusetts Central Division of the Boston and Lowell Railroads. The railroad fare is fifteen cents each way. The distance from Boston is eight miles. The post-office, telegraph and express address is Waverley, Mass. Packages for the children should be addressed to the School at Waverley. Always put the child's name on the inside of the package. Clematis Brook is the nearest railroad station. Friends of the children may visit them any afternoon, holidays and Sundays excepted. All communications should be addressed to

Walter E. Fernald, M.D., *Supt.*, Waverley, Mass.

RECENT DEATHS.

Edward S. Berry, M.D., of Concord, N. H., died recently, aged forty-seven.

Joseph Hilton, M.D., of New York, died January 7th, aged seventy-seven.

Colin Mackenzie, M.D., of New York, died January 6th, aged fifty-three. He served with distinction in the medical corps of the army during the war.

Horatio S. Hendee, M.D., died in Lowville, N. Y., January 5th, aged sixty-two. He served in the war as surgeon of the one hundred and fifty-eighth New York regiment.

John Wood, F.R.S., F.R.C.S., Emeritus Professor of Surgery in Kings College, London, died December 29th, aged sixty-six.

W. H. Long, M.D., surgeon in the Marine Hospital Service, died at Cincinnati, January 2d, aged forty-nine. He was appointed assistant surgeon in 1875, and surgeon in 1878. He has been in Cincinnati since 1888.

Ernest Wilhelm Brucke, Professor of Physiology and Microscopic Anatomy, in Vienna, died January 7th, aged seventy-two. He had been professor in Vienna since 1849. He was a member of the Academy of Sciences, and is the author of several works on different physiological subjects.

BOOKS AND PAMPHLETS RECEIVED.

The Technique of Cerebral Surgery. By G. Wiley Broome, M.D., St. Louis. Reprint. 1891.

Concealed Pregnancy: Its Relations to Abdominal Surgery. By Albert Vander Veer, M.D., Albany, N. Y. Reprint. 1889.

The Aseptic Closure of Long Standing Sinuses having their Origin in Tubercular Joints. By H. Augustus Wilson, M.D., Philadelphia.

Retro-peritoneal Tumors: Their Anatomical Relations, Pathology, Diagnosis and Treatment. With a Report of Cases. By Albert Vander Veer, M.D., Albany, N. Y. Reprint. 1892.

Report of a Case of Spina Bifida, with Partial Motor and Sensory Paralysis of both Extremities, Complete Paralysis of the Sphincters of the Bladder and Rectum, Double Equino-varus and Purulent Bursitis. By H. Augustus Wilson, M.D. Reprint. 1891.

Report on a Case of Hæmatophilia, or a Family of Bleeders. Tubercular Peritonitis. Report of Cases of Cholecystotomy, with Special Reference to the Treatment of Calculus Lodging in the Common Duct. By A. Vander Veer, M.D., Albany, N. Y. Reprints. 1891.

Original Articles.

THE SANITARY CONDITION OF BOSTON: A STATISTICAL PAPER.[1]

BY J. H. McCOLLOM, M.D.

The remark is frequently made that the death-rate of Boston is exceptionally high; much higher than that of some of the principal cities in this country and in Europe. To show that this statement, while correct so far as the rate from certain diseases is concerned, is incorrect when the general death-rate is taken into consideration, is the object of this paper. The general death-rate of a city is not always a perfectly reliable indication of its sanitary condition because, as the population is either increasing or diminishing, the ratio of deaths may be very much over-estimated or under-estimated. The most satisfactory plan for obtaining correct information on this point is to find the percentage of deaths from any one disease or from any class of diseases to the total mortality. For the purpose of comparison the following five cities have been selected: New York, Philadelphia, Glasgow, Edinburgh and Berlin.

The death-rate in Boston, per one thousand was 22.70, for 1890. The rate for the preceding year was 24.42, and the average rate for the past ten years has been 23.47. The highest death-rate reached in this city in the past twenty-five years was in 1872, during the small-pox epidemic when the proportion was 31.80; in 1873 the rate was nearly as high being 30.27. In New York City the rate for 1890 was 24.58; in 1872, the year of the small-pox epidemic, it was 33.70. For the last ten years the ratio has ranged from 30.99 to 24.58, with an average of 26.56. In Philadelphia the rate for 1890 was 20.76. In 1872 it was 26.19. For the last ten years, ending with 1890, the average has been 21.43. Glasgow has had for the same period, an average rate of 25.21. The rate for 1890 is 25.20. It is worthy of note that in Glasgow the average rate for ten years, and the rate for 1890, are practically the same. Edinburgh has an average for the decade commencing in 1881 of 19.40. The rate for 1890 is 20.00. In Berlin the rate for 1890 is 21.51. The average rate for the last ten years, 1881 to 1890 inclusive, is 24.37. In 1872, the year of the small-pox epidemic, the rate was 31.00; in 1875, when there was no general epidemic, the rate was 32.92; in 1883, the rate was 28.86. Boston during these three years had respectively a rate of 31.80; 24.95, and 22.76.

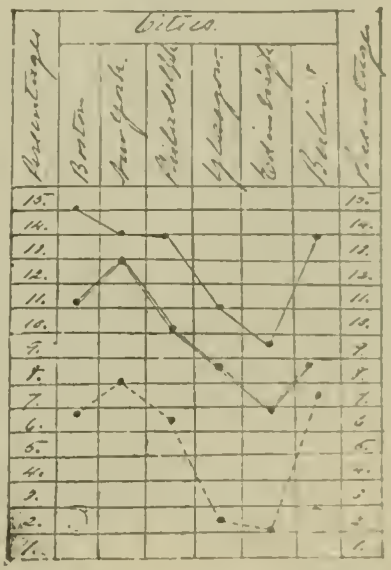
So far as the death-rate from all causes for the decade ending with 1890 is concerned, the six cities just mentioned should be placed in the following order: Edinburgh, with an average rate of 19.17, stands at the head of the list, having the lowest ratio; then comes Philadelphia, with a rate of 21.43; then Boston, 23.47; then Berlin, 24.52; next Glasgow, 25.21, and last New York, 26.50. If the rate for 1890 alone is taken, the order would be; Edinburgh, 20.00; Philadelphia, 20.76; Berlin, 21.51; Boston, 22.70; New York, 24.58; and Glasgow, 25.20. The epidemic of influenza, which had a very considerable effect on the death-rate from pulmonary diseases is one cause of the comparatively high death-rate of Boston and New York in 1890. The effect of this epidemic was felt in Europe in 1889. The estimated death-rate in Boston for 1891 is 21.28.

The average density of population does not have such a direct influence on the general death-rate of a city as has been supposed, although its effect on the number of deaths from special diseases is often very marked. The reason of this is evident; certain districts in a city are crowded, while others are sparsely settled. In no city is this condition more apparent than in Boston; for instance, Ward 16 with a population of 184 to the acre as compared with Ward 23 with only three to the acre. In support of this statement it is worthy of notice that Edinburgh with a death-rate of 20 to the thousand, has an average population of 101 to the acre, while Glasgow, with a rate of 25.20, has 87; that Berlin, with a rate of 21.51, has 110, while Philadelphia, with a rate of 20.76, has only 13 to the acre. If Boston, with a rate of 22.70 and a population of 20 to the acre, is compared with New York with a rate of 24.58 and a population of 111 to the acre, it will be seen that, although the rate is higher and the population larger in the latter city than in the former, the increase in the death-rate bears no direct relation to the increase in the density of the population.

CHART A.

Percentage of Deaths from Consumption, Diarrhœal Diseases and Pneumonia to the Total Mortality in Boston, New York, Philadelphia, Glasgow, Edinburgh and Berlin, 1890.

Consumption = —— Pneumonia = ═══ Diarrhœal disease = ·····



The most important factors in causing the comparatively high death-rate of Boston are consumption, diarrhœal diseases and pneumonia. The percentage of deaths from these three causes to the total mortality during 1890, in the six cities just mentioned, is as follows: Boston, 31.93, the highest; Berlin, 29.19; New York, 26.92; Philadelphia, 23.88; Glasgow, 20.72; and Edinburgh, 17.14. If these three diseases are taken separately, it is evident from a study of Chart A, which shows the percentage of deaths from these three causes to the total mortality, that, by following the full line, which indicates the percentage of deaths from consumption, Boston has the highest rate, 14.68; New York comes next, 13.69; Philadelphia, 13.46; Berlin, 13.23; Glasgow, 10.42; and Edinburgh, 9.00. By following the double line, which indicates the percentage of deaths from pneumonia to the total mortality, it will be seen that the order is somewhat changed, New York having the highest rate, 12.44; then Boston, 10.72; Philadelphia, 9.81; Berlin, 8.34;

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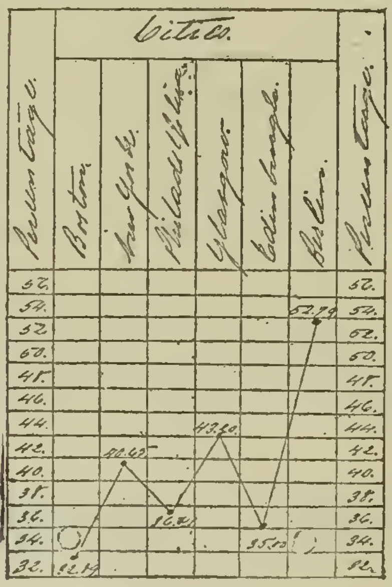
[1] Read before the Boston Society for Medical Improvement, November 23, 1891.

Glasgow, 8.25; and Edinburgh having the lowest, 6.30. It is interesting to note the course of the broken line, which shows the percentage of deaths from diarrhœal diseases. New York has the highest rate, 7.84; then Berlin, Boston and Philadelphia with percentages of 6.99, 6.53, and 6.04. Glasgow and Edinburgh have nearly the same percentage; 2.05 in the former and 1.94 in the latter city.

CHART B.

Percentage of Deaths under Five Years to the Total Mortality in Boston, New York, Philadelphia, Glasgow, Edinburgh and Berlin, 1890.



The percentage of deaths of children under five years of age to the total mortality, is always an important factor in causing a high death-rate of a city. Sudden changes of temperature, crowding in tenement-houses, improper food, want of cleanliness, and a general neglect of sanitary measures are the chief agents in increasing this mortality. The subject of infant-feeding is such a vast one that it is entirely beyond the scope of this paper; but, as bearing on this matter, the statement in the *Statistisches Jahrbuch der Stadt*, Berlin, for 1888, that the ratio of deaths in the first year of life, to the thousand, was 44.11 in children fed on animal milk, while it was only 7.90 in nursing children, is of interest. The effect of a high temperature on the mortality of children fed on animal milk as compared with nursing infants, is very marked. During the summer of 1888 in Berlin, the death-rate per thousand of the former was 28.43, for the other nine months of the year it was 15.68; the rates of the latter for the corresponding seasons were 4.06 and 3.84. Chart B indicates the percentage of deaths of children under five years of age to the total mortality for 1890, in the cities taken for comparison. It will be seen at a glance that Boston has the lowest rate, 32.89; that Edinburgh comes next, 35.00; then Philadelphia, 36.41; New York, 40.65; Glasgow, 43.20; and Berlin, 52.79. The density of population seems to have some slight influence on these percentages; for with the exception of Philadelphia, which should have a lower rate, and Edinburgh, which should have a higher, an increase in the density coincides, to a certain extent, with an increase in the percentage. This rate has gradually diminished in Boston since 1875, when it was 43.84. The average for the last five years is 34.86. The percentage for the first nine months of the present year, 1891, is 35.77.

The percentage of deaths from zymotic diseases to the total mortality shows a very decided decrease in this city, having fallen in the past ten years from 26.87 to 16.47, a diminution of 10.40. The percentage for 1890 is 16.47, and the rate for the first nine months of the present year, 1891, is 16.10.

TABLE C.

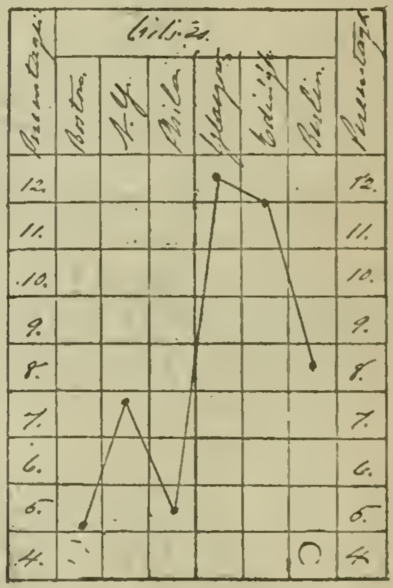
Percentage of Deaths from Ten Principal Causes to the Total Mortality in Boston, New York, Philadelphia, Glasgow, Edinburgh and Berlin, 1890.

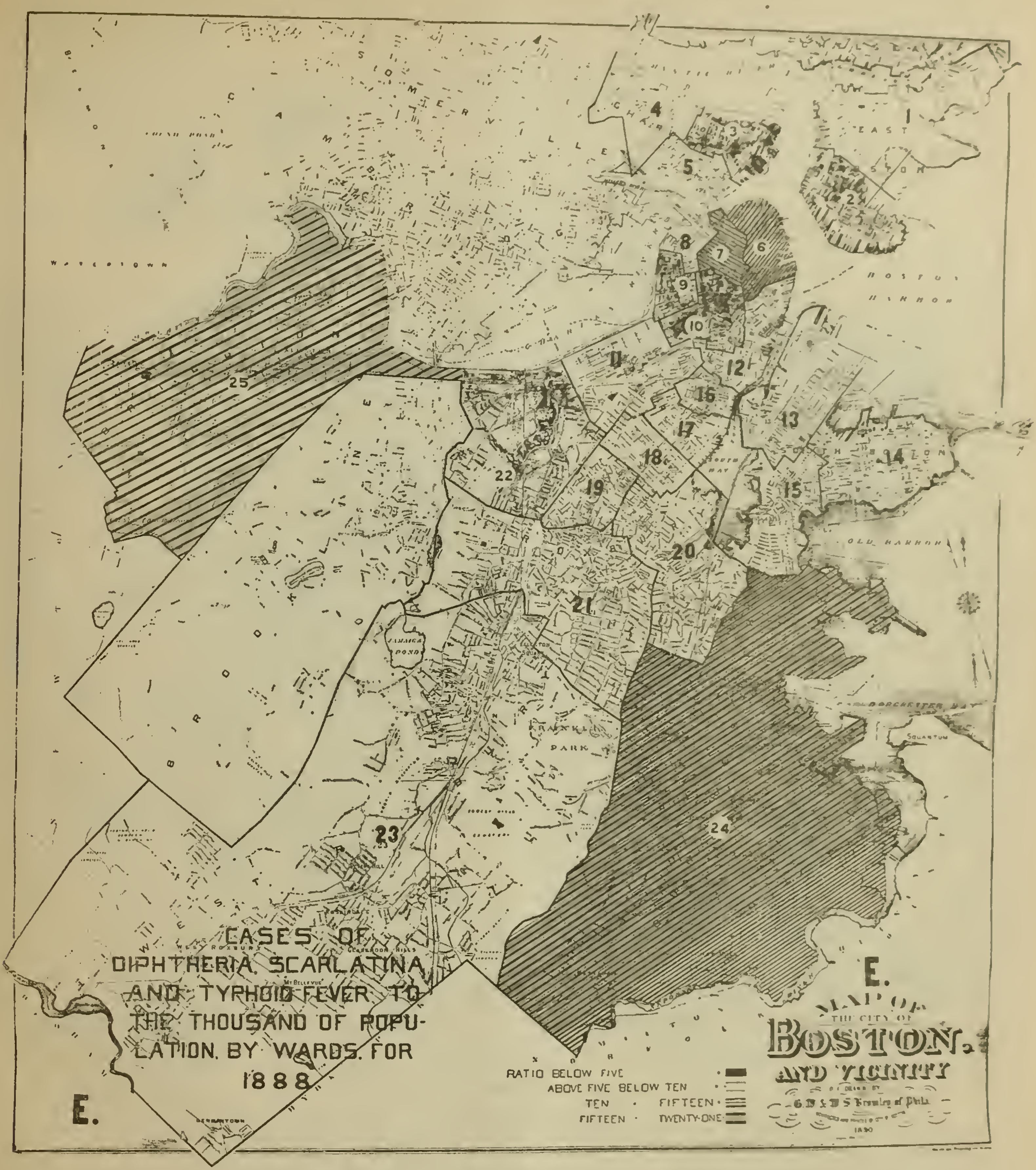
Causes.	Boston.	N. Y.	Phila.	Glas.	Edin.	Berlin.
Bronchitis	4.50	4.95	2.55	11.86	10.05	.25
Consumption	14.68	13.69	13.46	10.42	9.00	13.23
Croup	.60	1.30	2.02	.53	.65	.28
Diarrhœal diseases	6.53	8.34	6.04	2.05	1.94	6.99
Diphtheria	3.94	3.15	2.57	1.05	1.59	4.47
Measles	.19	1.82	.51	4.76	4.38	.99
Pneumonia	10.72	12.44	9 81	8.25	6.30	8.34
Scarlet fever	.41	1.02	.92	.96	.90	.89
Typhoid fever	1.52	.88	3.24	.88	.89	.43
Whooping-cough	.38	1.21	.99	5.22	4.54	1.76
Total	43.47	48.80	42.11	45.98	40.24	37.63

As the same nomenclature is not in use in different cities, a comparison of the relative mortality from zymotic diseases, taken together, cannot be made. Table C, however, gives the percentage of deaths from ten principal causes to the total mortality in six cities. It is evident from it that, during 1890, bronchitis was a very prominent factor in increasing the death-rate of Glasgow and Edinburgh, while it had a comparatively slight effect on the rate of Boston and New York, and still less on that of Philadelphia and Berlin; that, except in New York and Philadelphia, croup does not have any great influence on the death-rate; that typhoid fever is twice as prevalent in Philadelphia as in Boston, more than three times as prevalent as in New York, Glasgow and Edinburgh, and more than seven times as prevalent as in Berlin. It is an interesting fact that when croup and diphtheria are taken together there is a difference, in the relative frequency of these diseases, of only a quarter of one per cent.

CHART D.

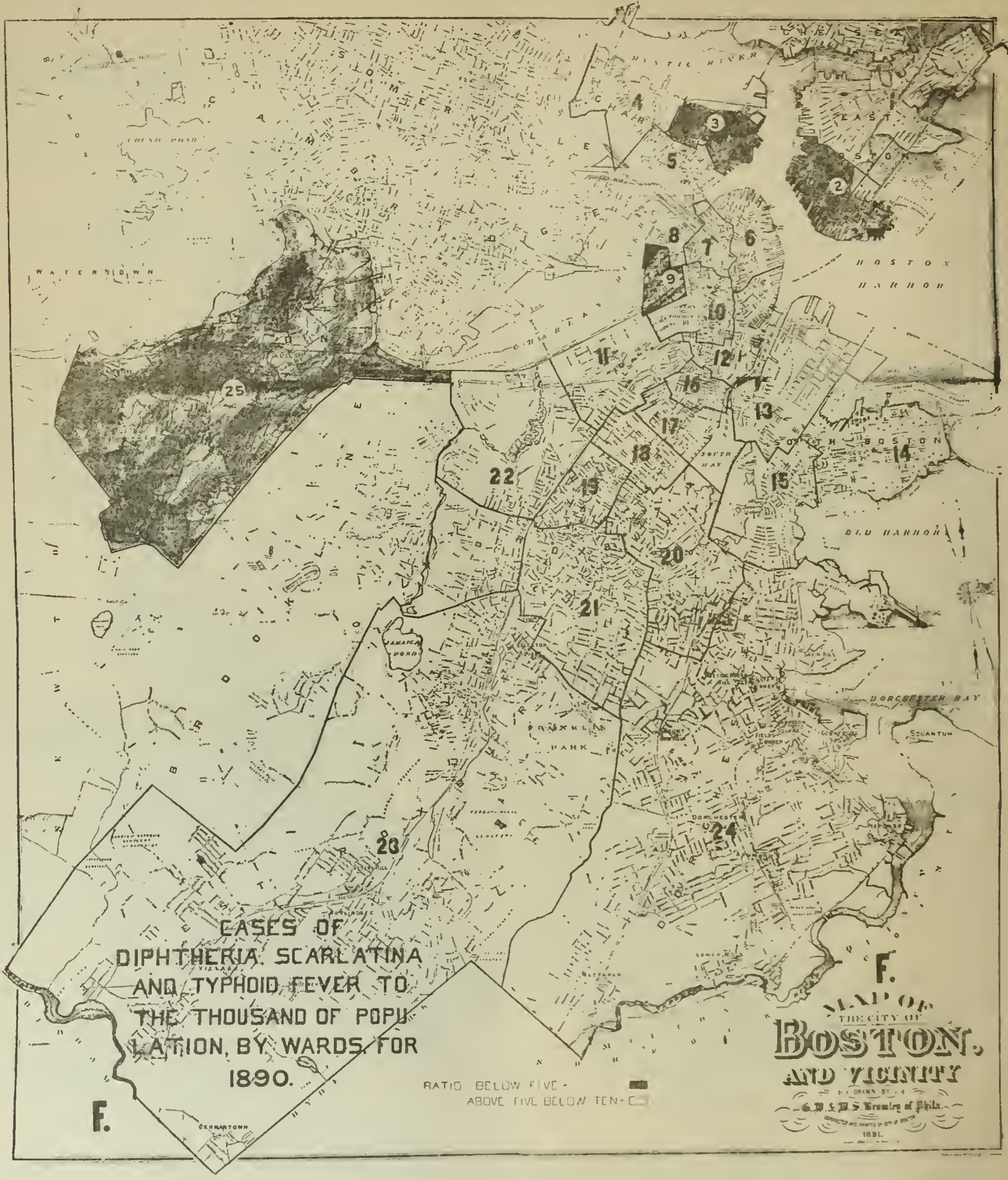
Percentage of Deaths from Diphtheria, Measles, Pertussis and Scarlatina to the Total Mortality in Boston, New York, Philadelphia, Glasgow, Edinburgh and Berlin, 1890.





between Boston, New York, Philadelphia and Berlin. The percentage of deaths from consumption, diarrhœal diseases and pneumonia has already been shown in Chart A. If these ten principal causes are taken together the percentage to the total mortality is, in New York, 48.80; in Glasgow, 45.98; in Boston, 43.47; in Philadelphia, 42.11; in Edinburgh, 40.24; and in Berlin, 37.63. If the excess of the percentage of deaths from consumption and pneumonia in Boston is eliminated, it will be found that Boston has a lower rate than Philadelphia and Edinburgh, and a slightly higher rate than Berlin.

Chart D indicates the percentage of deaths from pertussis, diphtheria, scarlet fever and measles to the total mortality in the cities before mentioned. It can be seen at a glance that Boston has the lowest percentage, 4.92; then Philadelphia, 4.99; New York, 7.20; Berlin, 8.11; Edinburgh, 11.41; and Glasgow, the highest, 11.99. The percentage of Boston is due principally to diphtheria; that of New York to diphtheria, measles and scarlet fever; that of Philadelphia to diphtheria; that of Glasgow and Edinburgh to measles and whooping-cough; and that of Berlin to diphtheria and whooping-cough. It is an interesting fact as bearing on the fatality from certain diseases in different countries, that the percentage of deaths



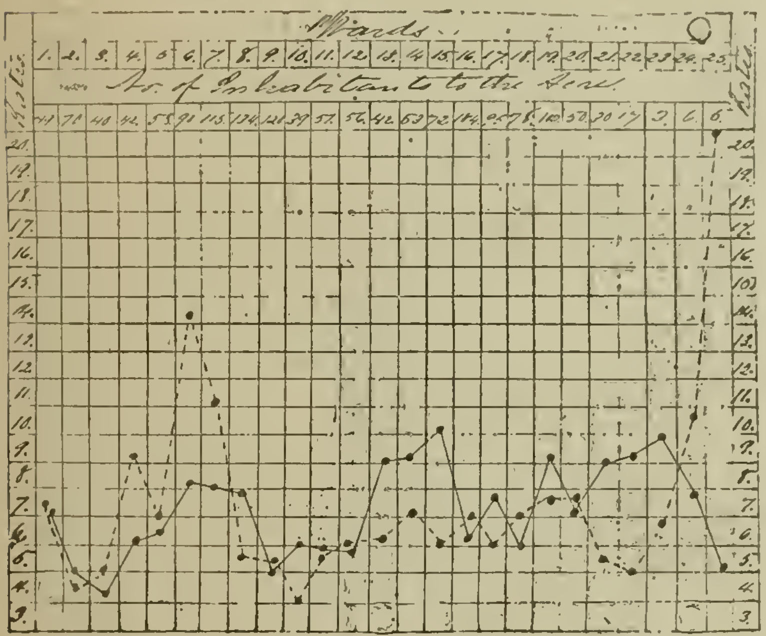
from measles and whooping-cough in Glasgow and Edinburgh is three times as great as that of the other cities. In Boston, since the year 1887, the percentage of deaths from diphtheria and scarlet fever to the total mortality, has diminished from 5.07 to 4.35. The percentage for the first nine months of this year, 1891, is 1.94. During the last five years the percentage of deaths from measles and whooping-cough has fallen from 2.62 to .57. These diseases have not been a very important factor in the death-rate of Boston for the past ten years; the highest percentage from measles having been 1.56; and that from whooping-cough 1.88. Of the preventable diseases, diphtheria, scarlet fever and typhoid fever are the most prominent agents in increasing the death-rate of Boston. Map E represents, in a general way, the ratio of cases of diphtheria, scarlet fever and typhoid fever to the thousand of population in the different wards of the city for 1888.

Map F shows the ratio of cases of these diseases to the thousand, by wards, in 1890. On these maps the wards, in which the ratio is below five to the thousand, have a dark shade; when the rate is above five and below ten, the wards are white; when the ratio is above ten and below fifteen the wards in which this ratio occurs are indicated by wide black lines alternating with narrow black ones; wide black lines alternating with two hair lines indicate a ratio above fifteen. If these maps are compared it will be seen that on the one for 1888 five wards have a rate below five to the thousand, sixteen wards have a rate above five and below ten, three have a rate above ten and below fifteen, and one has a rate above fifteen; that on the map for 1890, four wards have a rate below five, and in the remaining twenty-one the rate does not exceed ten.

CHART G.

Ratio of Cases of Diphtheria, Scarlatina and Typhoid Fever to the Thousand of Population, by Wards, in Boston for 1888 and 1890, with the Number of Inhabitants to the Acre in 1890.

1888 = ········ 1890 = ———



A somewhat more accurate idea of the relative frequency of diphtheria, scarlatina and typhoid fever in the different wards for 1888 and 1890 may be gained from Chart G, which shows the ratio of these diseases to the thousand with the number of inhabitants to the acre in each ward in 1890. The basis for the calculation of the ratio of 1888 was obtained by multiplying the number of assessed polls by 3.45; that for 1890 was the last United States census. The acreage of each ward was furnished by the City Surveyor, and is approximately correct. The broken line indicates the ratio for 1888; the full line that for 1890. The rate for 1888 in Ward 1, with an average population of 49 to the acre, was 6.91; that for 1890 was 6.46. In Ward 2, with a population of 70 to the acre, the rate for 1888 was 3.90; that for 1890 was 4.68. Ward 3 has a population of 40 to the acre. The ratio in 1888 was 4.69; in 1890, 3.74. The population of Ward 4 is 42 to the acre. The ratios for 1888 and 1890 are 8.89 and 5.68, respectively. Ward 5, with a population of 58 to the acre had, in 1888, a rate of 6.42; in 1890 the rate was 5.96. It is of interest to notice that, in the five wards just mentioned, comprising East Boston and Charlestown, the ratio is lower in the poorer localities than it is in the better. This condition is due to the fact that a greater proportion of the patients are sent to the hospital from the former localities than from the latter, thus removing many sources of contagion.

In Ward 6, with a population of 90 to the acre, the rate in 1888 was 13.78; in 1890, 7.86, a diminution of 5.92. In Ward 7, which has a population of 115 to the acre, the rate in 1888 was 10.77; in 1890, 7.68, a marked diminution. In Ward 8, the average population is 134 to the acre. The rate in this ward for 1888 was 5.20; that for 1890 was 7.44, an increase of 2.24. The population of Ward 9 is 120 to the acre. The rate for 1888 was 4.82; that for 1890 was 4.66. Ward 10, which has a population of only 39 to the acre, had a ratio of 3.76 in 1888; the rate in 1890 was 5.48, a slight increase. The population of Ward 11 is 51 to the acre. The rate for 1888 was 5.34; that for 1890 was 5.44. The population of Ward 12 is 56 to the acre. The rate in 1888 was 5.52; in 1890, it was 5.32. Ward 16 is the most thickly settled district in the city, having a population of 184 to the acre. The rate in this ward, for 1888, was 6.46; for 1890, 5.70. The number of inhabitants to the acre in Ward 17 is 95. The ratio for 1888 was 6.54; that for 1890 was 7.16, a slight increase. Ward 18 has a population of 78 to the acre. The ratio for 1888 was 6.54; the rate for 1890, 5.55, a slight diminution.

In the city proper, embracing the ten wards just mentioned, the most marked diminution in the number of cases occurred in Wards 6 and 7. In Wards 13, 14 and 15, comprising South Boston, with a population, to the acre, of 42, 53 and 72, respectively, there was a considerable increase in the frequency of these diseases in 1890 as compared with 1888. The rate for the former year was 8.53, 8.83, 9.80, respectively; that of the latter 5.93, 6.70 and 5.80. In Wards 19, 20, 21 and 22 with a population, to the acre, of 100 50, 30 and 17, respectively, the ratio for 1888 was 7.16, 7.11, 5.06 and 4.51; that for 1890 was 8.86, 6.90, 8.41 and 8.74, respectively. In the four wards just mentioned, which practically embrace the district known as Roxbury, there was an increase in the frequency of these diseases in 1890 as compared with 1888. In Ward 23, or West Roxbury, with a population of three to the acre, the rate in 1888 was 6.21; in 1890, 9.24. Ward 24, or Dorchester, has a population of six to the acre. The rate in this district was 10.01 for 1888; that for 1890 was 7.32, a marked diminution. Brighton, Ward 25, with a population of five to the acre, had, in 1888, the remarkable rate of 20.31; in 1890, the rate was 4.82, a decrease of 15.49. In the whole city the ratios for diphtheria, scarlatina and typhoid fever taken separately were, in 1888, 3.32, 1.66, 2.17; in 1890, 2.29, 2.06 and 1.89, respectively. The ratio of these diseases to the thousand, taken together, in the whole city, was, in 1888, 7.15; in 1890, 6.24. It may be of interest to note the ratio of these diseases in the different sections of the city for 1890: Brighton has the lowest rate, 4.82; Charlestown, 5.11; East Boston, 5.63; Boston proper, 6.26; Dorchester, 7.32; Roxbury, 8.19; South Boston, 8.99; and West Roxbury, 9.24.

Chart H shows the ratio of cases of typhoid fever to the thousand of population by wards in 1890. The wards in which the ratio was above one and one-half to the thousand were 1, 2, 4, 5, 6, 9, 10, 11, 12, 13, 14, 16, 17, 19, 20, 22 and 23; those in which the ratio was below one and one-half were 3, 7, 8, 15, 18, 21, 24 and 25. It is worthy of notice that the rate in Ward 6 is 2.81, while that of Ward 7 is only 1.21; that the rate of Ward 16 is comparatively low, while that of 17, the adjoining ward, is comparatively high. The rate of 2.64 in Ward 23 with a population of only three to the acre may be explained by the existence, in this locality, of a number of wells. An infected well is one of the most potent factors in the causation of this disease; it is, in fact, a culture tube on a large scale.

It is an interesting fact, bearing on the subject of a public water-supply as compared with wells, that in Charlestown, in which the Mystic water is used, the rate is not particularly high, in the poorer localities, where the residents remain at home during the whole year, while in those districts where the inhabitants leave the city during the summer months the rate is considerably increased. This statement is also true, with certain limitations, of the other parts of the city.

CHART H.

Ratio of Cases of Typhoid Fever to the Thousand of Population, by Wards, in Boston for 1890, with the Number of Inhabitants to the Acre.

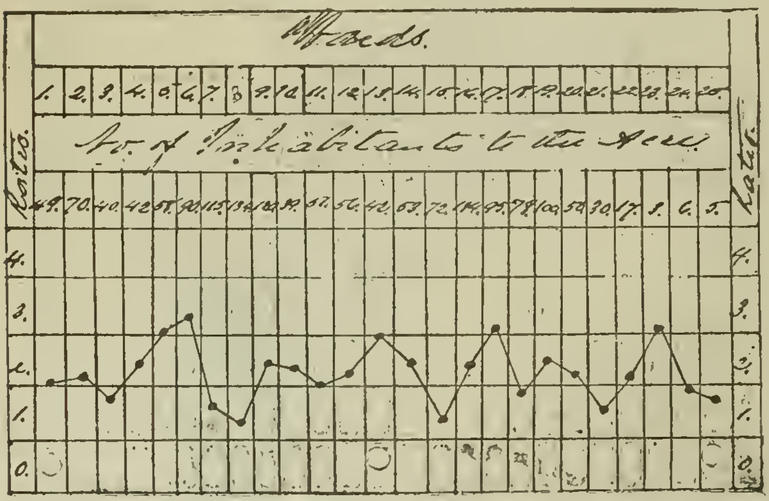


Table I gives the ratio of cases of typhoid fever to the thousand of population in the different wards of the city for 1890, and is explanatory of Chart H.

TABLE I.

Ratio of Cases of Typhoid Fever to the Thousand of Population, by Wards, for 1890.

Ward 1, East Boston	1.68	Ward 14, South Boston	2.12
" 2, "	1.79	" 15, "	.94
" 3, Charlestown	1.37	" 16, Boston	1.93
" 4, "	1.94	" 17, "	2.68
" 5, "	2.41	" 18, "	1.37
" 6, Boston	2.81	" 19, Roxbury	2.08
" 7, "	1.21	" 20, "	1.84
" 8, "	.92	" 21, "	1.04
" 9, "	2.05	" 22, "	1.69
" 10, "	1.95	" 23, West Roxbury	2.64
" 11, "	1.47	" 24, Dorchester	1.41
" 12, "	1.82	" 25, Brighton	1.32
" 13, South Boston	2.50		

The percentage of deaths from diphtheria, scarlatina and typhoid fever to the total mortality for the nine months ending with September 30th of the present year, 1891, is 3.15; that for the corresponding nine months of 1890, was 5.89, a diminution of 2.74. The number of reported cases of these diseases for the same period in 1891 is 1,942, as compared with 2,483 in 1890, a decrease of 541 in the number of cases.

It has been shown from this collection of statistics:

(1) That the general death-rate of Boston is not exceptionally high.

(2) That the excess of the death-rate in Boston, over the five cities taken for comparison, is due to consumption and pneumonia.

(3) That the percentage of deaths of children under five years of age to the total mortality is lower in Boston than in any other of these five cities.

(4) That the percentage of deaths from diphtheria, measles, pertussis and scarlet fever to the total mortality is also lower in Boston than in any of these cities.

(5) That, in this city, during the past two years, there has been a marked diminution in the number of cases of diphtheria and scarlet fever.

THE TREATMENT OF CHRONIC SPRAINS OF THE FINGER-JOINTS.[1]

BY ROBERT W. LOVETT, M.D., OF BOSTON.

I feel that I owe the Society an apology for presenting a paper upon so trivial a subject; but the affection in question is a common one, and one which is exceedingly intractable and troublesome, and I have not been able to find any satisfactory mention of its character or treatment in the text-books. It is not uncommon in surgical practice, and in the last two years a fairly large number of cases have come under my observation in private and in hospital practice. It seemed to me that it might be of practical interest to mention the peculiarities of the affection and to cite one or two individual cases, at the same time speaking of a plan of treatment which is not by any means new, I fancy, but which has proved successful in the largest proportion of the cases which have come under my observation.

The greater proportion of cases among those that I have seen have occurred in women, although men have by no means been exempt; and in both men and women neurasthenic symptoms have in many cases been associated with the local symptoms of synovitis. In the greater majority of cases the finger synovitis was due to some injury, such as a strain or hyperextension of the joint; but in several instances the patient could assign no cause for the synovitis, although it is likely that in these there was some overuse of the affected finger or some unconscious traumatism.

The joints most often affected have been the phalangeal articulations, and on examination they have been seen to be enlarged, and most often shiny. Sensitiveness is very marked, especially over the lateral ligaments, and local heat is a common symptom. Motion is very much restricted, or complete stiffness of the affected joint may be present, and attempted manipulation is very painful. Generally the sprained joint is held in a position of partial flexion, and any attempt to extend it is very distressing. In severe cases the whole finger may be swollen.

The pain and sensitiveness in general are more than would be expected from the local symptoms. The swelling may often be considerable, and fluctuation may be present, due to the synovial distension; but these are not necessarily the most painful cases. In other cases, with comparatively little enlargement of the joint, much sensitiveness may be present, and the pain may be severe enough to keep the patient awake at night. It is this disproportion of pain and local symptoms which makes this especial affection noteworthy, and distinguishes it in a measure from other sprains.

The association of neurasthenic symptoms with such finger sprains seems common enough to suggest that in many cases they are intimately associated pathologically. In these cases it is easy enough to account for the excess of pain, but this will not explain all instances where the sensitiveness seems excessive. The symptoms of which I speak are excessive nervousness, persistent basal headaches, tingling of the hands and feet, sensitive spots over the spine, and the like. I cannot state definitely in what proportion of cases these have occurred, but I am sure that some of them have been present in more than half of the cases that I have seen.

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[1] Read before the Boston Society for Medical Improvement, November 23, 1891.

Most of the cases have been of some weeks' or some months' standing when they were seen. The affection seemed at first so trivial that it appeared to the patients not worth attending to, and it was only when it became apparent that it was not wearing off, but was getting progressively worse, that they applied for treatment.

The affection seems to show little or no tendency toward spontaneous improvement: in fact, the disposition seems to be to an increase of pain and sensitiveness over what followed the injury, and simple therapeutic measures seem of no avail.

One or two specimen cases may be of interest.

Miss A., forty years old, an artist, consulted the writer in the spring of 1889, with .regard to a chronic sprain of the large phalangeal joint of the left middle finger. Six weeks previously she had wrenched the finger in opening a bureau drawer, and it had been lame for some time, and for three or four weeks it had been getting progressively worse. When seen by the writer the joint was swollen, hot and tender; no motion was allowed, and at night the finger was very painful. The patient was very nervous, and said that the previous spring she had had nervous prostration. For two weeks the finger was kept upon a splint and painted daily with iodine. This produced a very slight improvement, but not much. The splint was then removed for a few minutes at night and the finger soaked in hot water. This was followed by massage; and after a treatment extending over some six weeks, the usefulness of the finger was practically restored. The recovery has been permanent.

Jennie P., a mill hand, twenty-one years old, apparently well, although nervous, applied for treatment at the City Hospital in August, for a synovitis of the metacarpo-phalangeal joint of the thumb. It had been injured in November, eight months previously, and in May, six months after injury, it had become so bad that she gave up work and tried various remedies. At the time when she was seen the joint was swollen and very sensitive to pressure and manipulation. The thumb was immobilized for a month without any apparent effect and then the splint was gradually discontinued and massage begun, and in a month or six weeks more the use of the thumb was fully restored.

These cases will serve to recall the kind of case of which I speak, and to call attention to the extreme slowness of the recovery even under the most favorable conditions.

There is but little to be said with regard to the pathology of the affection, at first it appears to be a simple acute synovitis due to injury, but it soon assumes the type of a chronic synovitis and probably passes on into an arthritis in severe cases. That is, the bone becomes affected as well as the synovial membrane, causing thickening and distortion of the affected joint. It would seem that in cases where the stiffness had been of some months' standing, adhesions would have formed which would lead to obliteration of the joint, but even in such obstinate cases as the one last related, the restoration of perfect mobility seems possible in a large proportion of cases.

Rheumatism and rheumatoid arthritis undoubtedly have a part in keeping up certain cases of chronic finger sprains, but beyond this it is not possible to speak definitely of the etiology. Certain cases of spontaneous synovitis of the finger-joints clearly belong to this class.

The treatment which after much experimentation has seemed to be the best, is complete immobilization of the affected joint for a period of two to four weeks, followed by a gradual discontinuance of the splint and the use of massage and hot water.

In general the tin finger-splint has been used and the affected joint freely painted with iodine during the time of its immobility. In private practice it has been more comfortable to apply the copper-wire splint, which is done by winding the finger in sheet wadding and then winding a spiral of thin copper wire about it with one or two lengths running from the tip to the base of the finger. This gives complete and comfortable immobility, but requires constant adjustment and is liable to interfere with the circulation. After the finger has been immobilized for such time as seems best according to the severity of the case, the use of hot-water soaking is begun along with massage every second day. Gradually the splint is discontinued without much regard to the pain caused, and the patient encouraged to use the finger.

Two points have appeared to the writer to be established: one is that simple fixation, however prolonged, is not enough to cure the affection, and secondly, experience in the more severe cases has shown that the immediate use of massage is not tolerated. Consequently a period of immobilization must be insisted upon which at the time seems to be accomplishing very little, but which probably is an essential part of the treatment. And at the close of this period of fixation there is often but little improvement to be noted, and pain on movement seems perhaps as severe as in the first place. But this must be disregarded and massage begun.

Salicylate of soda three times a day, or oftener, in ten-grain doses, has formed part of the writer's treatment, because in some cases there was evidently a rheumatic element, and because in the majority of cases it was found to control the pain and seemed to hasten the convalescence. The general condition often needs attention.

Once more may I call your attention to the fact that this affection does not tend towards spontaneous recovery, that its progress is in any event lamentably slow, and that it is often associated with neurasthenia.

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A CASE OF BILIARY CALCULUS; CHOLECYSTOTOMY; DUODENAL FISTULA; RECOVERY.[1]

BY J. F. A. ADAMS, M.D., PITTSFIELD, MASS.

Mr. B., aged thirty-eight, married, manufacturer, residing at Bridgeport, Conn., consulted me November 22, 1890, and gave the following history:

For ten years past he has suffered from attacks of severe abdominal pain, at intervals varying from two or three weeks to two or three months. The first of these attacks was followed by local peritonitis, since which he has had four other attacks of peritonitis following the pain, which has always been in the region of the gall-bladder.

Two years ago, after an unusually severe attack, he had jaundice for the first time, accompanied with nausea and itching. In three or four weeks the skin resumed its normal color. Since then the attacks of pain have not usually been followed by jaundice.

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[1] Read at the quarterly meeting of the Berkshire District Medical Society, July 29, 1891.

In August, 1890, while in England on business, he had a severe attack of pain, followed by local peritonitis, but not by jaundice, except a slight yellow tinge of the conjunctiva. He returned home immediately after and suffered on the voyage from constant pain and tenderness. After reaching home he was confined to his bed for ten days with a temperature of 101° to 103°. Since that time the attacks of pain have increased in severity, and have occurred about once in two weeks, relieved only by hypodermic injections of morphia. Jaundice also appeared in September, and has since been persistent and very deep in color. Since jaundice appeared each attack has been accompanied with nausea, which had not previously occurred.

There has been constant tenderness over the gall-bladder since the attack in August, and the stools have been white or light clay-colored, as they have always been for a few days after an attack of pain. The urine has been coffee-colored. The patient has lost fifty pounds in weight during the last three months. He is naturally a robust, vigorous, cheerful man. He is now thin, yellow and feeble, with a haggard and dejected expression.

At this time I gave him some general advice, and advised an operation.

The patient came to see me again the last of December. He had had an attack of pain December 17th, since when the jaundice was diminished and he had felt generally better.

On December 30th I went with him to see Dr. William W. Seymour, of Troy, who had himself submitted to the operation of cholecystotomy in December, 1889, at the hands of Mr. Lawson Tait, and had reported his case in very attractive style in the *Medical Record* for December 6, 1890. Dr. Seymour gave us a detailed account of his former sufferings, of the operation, and of the completeness of the cure; showed us his cicatrix and phial containing his one hundred and fourteen calculi. We saw in him a big, active, athletic man, a monument to the success of cholecystotomy. Mr. B. was very favorably impressed, and made up his mind that he would submit to the same operation if the attacks continued. But, as he then thought himself much better, he preferred to wait a little.

The next day, December 31st, while on his way to Bridgeport, he had one of his severest attacks, and during the next three weeks he had one severe attack and three milder ones.

On January 24th he came to Pittsfield by way of Boston. Just before leaving Boston pain came on again and caused him intense suffering during the journey. There was no hypodermic syringe at hand, and he felt only slight relief from the inhalation of chloroform. Soon after his arrival he was relieved by morphia, but the pain returned and continued for more than twenty-four hours, requiring morphia again on the following day. On that day the temperature was normal and pulse 80° to 100°. There was tenderness over the region of the gall-bladder and pain there, and also below the right scapula. No increased dulness or other indication of a distended gall-bladder, and no enlargement of the liver; urine very dark brown; skin deeply jaundiced.

On the third day the pain was less, but the temperature rose to 101.5°, and pulse to 108°. On the fourth day, a sharp attack of pain came on with nausea and vomiting. He was again relieved by morphia. After this there was no more severe pain, but tenderness was great for three days longer. During the week he had taken almost no food, and for a week after he took only liquid food in small quantities.

The patient was now told that surgical interference could no longer be deferred with safety, and readily consented to the operation. It was decided that this should be performed by Dr. William T. Bull, of New York, at the House of Mercy, in Pittsfield, on the 15th of February.

On the morning of the 13th he took a dose of Carlsbad salts which caused two dejections, soon after which he was again seized with pain which lasted all day, with excessive tenderness and vomiting. The next day he was free from pain, but had slight tenderness and occasional nausea. Pulse and temperature normal.

On Sunday morning, February 15th, he went to the House of Mercy, where cholecystotomy was performed by Dr. Bull, who has kindly furnished me the following description of the operation:

"A four-inch vertical incision over the cartilage of the ninth rib exposed the abdominal cavity. The gall-bladder was not prominent, but was easily brought into view by wedging the adjacent intestine out of the way with flat sponges. It appeared to be constricted about its middle. The fundus was aspirated and two drachms of bile removed. It was then opened, the wound held apart with artery clamps; a soft bougie and also a probe was passed through the constricted body, and was arrested by a calculus which could be distinctly felt with the finger. It could be moved to and fro, a distance of two inches, apparently in the dilated cystic and common duct. The structure was overhung by the duodenum, and united to it by such firm adhesions that I could not separate them without fear of tearing the wall of the intestine. In consequence of this adhesion, the finger felt the calculus *through* the wall of the duodenum, when it was pushed in the lowest position it would occupy. When it was forced into its highest position it was close against the under surface of the liver, and the part of the duct it occupied appeared to be free from the duodenum. It was difficult in the field of operation to determine the precise limits of the duodenal wall. In making the incision to remove the calculus the wall of the gut was incised for a distance of half an inch where it lay over the duct. The wound was closed with a continuous catgut suture through the mucous coat, and outside this interrupted Lembert sutures.

"The incision in the wall of the duct was left open, a rubber drain inserted in it, and the edges of the incised gall-bladder sutured with catgut to the parietal peritoneum. The viscus was not long enough to permit the skin to be included in this suture. The drain was surrounded with tampons of iodoform gauze and the abdominal wound closed by silk sutures about them and the tube."

Duration of operation two and one-half hours, chloroform was the anæsthetic.

The calculus was oval, of the size and shape of a nutmeg, and weighed 55 grains. Its longer diameter is $1\frac{1}{16}$ inch and its shorter diameter $\frac{3}{4}$ inch.

This operation was beset with unusual difficulties, for the following reasons:

(1) The gall-bladder was hidden behind the intestines and liver, and when found was contracted and contained no calculus.

(2) The calculus was in the dilated duct, was hidden behind the duodenum, and united by firm adhesions to the surrounding structures.

(3) The operation was protracted by the necessity of sewing up the incised duodenum.

(4) Owing to the deep position of the gall-bladder and duct and to the adhesions which held it there, the incised edges could not be accurately stitched to the abdominal wall, as is usually done, and the danger of the escape of bile into the peritoneal cavity was great.

After the operation the patient was greatly prostrated. In the evening he had a pulse of 108, temperature 98° and respiration 36. For four days following, the pulse, which was feeble, ranged from 120 to 150. Temperature 100.4° the second day, and 100.2° the third day, after which it was nearly normal. On the second day the urine contained albumen one-tenth of its volume, but this disappeared on the third day and did not return. He suffered from severe pain in the wound and whole of right side, and required hypodermic injections of morphia during the first few days. For forty-eight hours he took nothing by the mouth. On the third day he took champagne and on the fourth day he began to take peptonized milk. From the first he had enemata of peptonized milk, afterwards alternated with beef-juice.

The bile was discharged very copiously. For three days it was very watery and pale, being mixed with serum. After this it was thicker and bright yellow. The dressings were changed at first twice a day, but it was soon necessary to change them every eight hours and afterwards more frequently, sometimes every two hours. Great masses of absorbent cotton were completely saturated, as well as the bandage, clothing and bedding. This inflamed and excoriated the skin and caused great suffering. It caused him such pain to be moved that the dressing became a very difficult matter. The bile escaped around the tampon and not through the tube.

On the eighth day the sutures were removed. The wound had then healed, except where kept open by the tampons. The bile flowed chiefly from the lower angle of the wound and not through the tube. It was yellow and green, with much watery fluid, and the skin was inflamed wherever touched by the wet dressings and clothing.

With the discharge appeared a few white specks which, on examination, proved to be milk-curd. It was therefore evident that the wound in the duodenum was not united, and that its contents were escaping.

The three tampons surrounding the tube were removed on the eleventh, twelfth and thirteenth day. A cavity was then left, two inches in diameter and two inches deep, lined with healthy granulations. The tube was removed and found to penetrate one inch deeper than the bottom of this cavity. The tube was not obstructed. It was cleansed and replaced and surrounded with tampons. The bile, however, continued to flow out around the tube until March 7th, the twenty-first day, when additional fenestræ were cut close to the inner end of the tube and the cavity packed very tightly with gauze. After this the discharge came chiefly through the tube.

The discharge from the duodenal fistula continued till March 14th, four weeks after the operation. For one week longer, bubbles of gas escaped during the dressing, and after this the fistula remained closed.

As long as nothing but milk and liquids were taken by the mouth, the discharge from the fistula was very watery. It was at first acid in reaction, but afterwards neutral; but it was excessively irritating, and excoriated the whole side and back. It never contained more than a few small particles of curd, though very large quantities of milk were taken. The caseous mass passed onward through the duodenum, while the watery portion poured freely out from the fistula. When solid food was taken the discharge from the fistula was genuine chyme.

When the tampons were removed, as they were daily, the cavity surrounding the tube would immediately fill with half an ounce or more of bile and food. The bile came from the right side of the tube, and the food from the small orifice at its left side. As soon as this was withdrawn by a syringe it would well up again from the bottom. The amount of bile was amazing, but it could not be measured.

The wound granulated rapidly, and on March 26th, five and a half weeks after the operation, had closed firmly about the drainage-tube. This was then removed and a smaller one substituted, which was kept in for two weeks longer. On April 4th, seven weeks after the operation, the discharge of bile ceased for a time, and bile was then first seen in the stools. Bile was occasionally discharged from the tube, however, until April 18th, after which no more was seen. This was nine weeks after the operation. When the flow of bile was first checked, pains would be felt like the premonitory pains of of his former colics. When bile reappeared at the wound, the pain ceased. A slight serous oozing continued till May 13th, since when there has been no discharge of any kind.

The stick of nitrate of silver was occasionally used to facilitate the closure of the sinus. The granulating surface was liberally dusted over daily with aristol, which acted admirably. For the protection of the skin, ointments were at first used, such as lanoline and zinc ointment; but the dry application of bismuth was found more comforting and healing. Tampons of wool were found better than cotton or gauze, as by their elasticity they kept the bile out of the wound and forced it to flow through the tube.

The bowels were at first obstinately constipated. Repeated enemata were given, as well as salines by the mouth; but nothing came away except the débris of the nutrient enemata until the twelfth day, after which the stools were liquid and dark-colored until the twenty-first day, when the first milk-curd appeared in the stools. These were colored till the twenty-sixth day, after which they were nearly white in color and very copious till the forty-ninth day, when the normal color returned. There was therefore no movement from the upper portion of the bowels for three weeks, owing in part, no doubt, to the escape of the liquid portion of the food, as well as to the morphia which had to be given to a greater or less extent during that period.

No periodicity could be discovered in the discharge of bile; but the duodenal discharge varied with the feeding. It was constant as long as liquid food was taken at short intervals; but when regular meals were taken, it came in floods about an hour after meals.

For the first two weeks the patient was unable to turn himself in bed. At the end of four weeks he sat up in bed, and at the end of six weeks was walking about the hospital. He became greatly emaciated during the first four weeks, while the duodenal fistula was open, but began to gain flesh as soon as this was closed.

The jaundice began to fade immediately after the operation, and at the end of six weeks had all disappeared except a slight yellow tinge upon the abdomen.

I went out of town on the 1st of April, six and a half weeks after the operation. He was then wearing the small tube, but was up and dressed. Dr. F. K. Paddock took charge of him during my absence. On my return on the 13th of May, Mr. B. met me at the station, looking well and very happy. Since then he has been well, though not very strong. He has had regular bilious stools, no pain, no jaundice and has gained flesh.

A CASE OF TOTAL OBLITERATION OF THE ŒSOPHAGUS THROUGHOUT THE GREATER PART OF ITS COURSE, OF DOUBTFUL ORIGIN; EXTERNAL ŒSOPHAGOTOMY AND ATTEMPTS AT DILATATION; DEATH.[1]

BY MAURICE H. RICHARDSON, M.D.,
Surgeon to the Massachusetts General Hospital.

G. C., three years of age, was sent to me at the Massachusetts General Hospital by Dr. George H. Francis, of Brookline, on July 1, 1891.

Family history good. The child was perfectly well until last January, when he began to have difficulty in swallowing food. At first solids, and then liquids, were with difficulty kept down. He could swallow liquids, but they were immediately regurgitated. At other times he could swallow and keep them down. This state of things has continued to the present time. One day nourishment will not be retained at all, and the next day perhaps several quarts of milk will be swallowed and kept down. The child is emaciated and restless, otherwise not remarkable. At this time there was no history given of any possible local cause, such as the accidental swallowing of any burning or other irritating fluid.

On the 21st of July, having been under observation three weeks and no material change having taken place, he was discharged on account of an outbreak of scarlet fever in the ward.

On the 27th of July, 1891, he was re-admitted. Since leaving the hospital the little boy has not been able to swallow anything. Re-enters very emaciated and with a feeble and rapid pulse. Put at once on nutrient enemata and inunctions of cod-liver oil.

On the 29th, under ether anæsthesia, an incision was made in front of the sterno-mastoid muscle on the left side, and the œsophagus was quickly exposed just below the level of the thyroid cartilage. At this point it was normal in appearance and in calibre. The sides of the incision were grasped with retractors, and the canal exposed down to the level of the sterno-clavicular articulation, where a firm, fibrous stricture was encountered. It was impossible to find an opening into this stricture with the smallest urethral instrument. At one time it seemed as if a passage had been found, and through this was passed a filiform bougie. The opening was gradually dilated until it would admit the end of a small gum-elastic catheter. After very careful manipulation, the instrument was passed into what was thought to be the stomach. It was noticed immediately that air entered and was expelled from the mouth of the catheter with the movements of respiration. It seemed probable that this was air passing to and from the stomach. After very careful observation of this unexpected phenomenon, a small quantity of milk and brandy was injected through the catheter into what was supposed to be the stomach. The child did not rally well after the operation, and died that same afternoon.

At the autopsy it was found that the œsophagus had become entirely obliterated, from the level of the sterno-clavicular articulation to the cardiac orifice. It was impossible to pass any instrument whatever through the canal. The catheter had made a false passage to the right into the pleural cavity into which the milk and brandy had been injected.

This very unusual case presents certain features of great interest. It did not seem to me possible that this could be a congenital stricture of the œsophagus, because the onset had been quite sudden, and there had been no history of difficulty in deglutition up to the third year of the child's life. I therefore, some time before the operation, investigated the possibility of the closure being due to some corrosive action. I made careful inquiries, but was unable to find any ground for the belief that the child had swallowed anything injurious. Nevertheless, I did find that the first attack came on suddenly.

The operation demonstrated clearly the feasibility, in children, of exposing œsophageal strictures situated five inches below the level of the incisor teeth. The upper end of the stricture was brought into view with the greatest ease. It was possible to hold back the sides of the œsophagus and to search for the upper orifice without any difficulty whatever. In spite of all the care that I could use in the passage of bougies and in the introduction of the catheter, the false passage was made. It would be impossible to use any force whatever in dilating a supposed stricture without the greatest danger of making a false passage. Unless the eye of the surgeon is upon the point of the instrument so as to guide it with absolute knowledge, the slighest force is sufficient to cause a lateral deviation into the pleura or into the posterior mediastinum. I was not conscious at any time of using any but the very gentlest manipulation.

In a case of this kind there is little to regret in the fatal termination. The only other course would have been a gastrostomy. I think no one would advocate such an operation in a child of three. Life, certainly, would not be worth living were it necessary always to employ this means of feeding.

I would advocate the use of external œsophagotomy for the relief of annular strictures situated within reach of the finger after an opening has been made through the neck. It is quite possible, as I have already shown, to reach with the finger as far as the arch of the aorta. I do not believe that it is justifiable to attempt any radical dilatation of benign strictures situated within reach of the finger, without first exposing the parts by the external incision. No degree of force sufficient to dilate thoroughly a stricture can safely be used through the mouth. In the case of this child, had I found a narrow stricture, I should have been tempted to excise the ring and unite the ends of the tube in a manner similar to that used in circular enterorraphy.

One other point to be noted is the importance of operating early. I have no doubt that in this case the chances of recovery were greatly diminished by the four weeks' delay which I employed in studying out the case. During that time the child failed very much indeed. Although I do not believe that it was possible for this child to recover under any circumstances, yet had the conditions been otherwise, I am confident the delay would have had an unfavorable influence on the result.

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[1] Read before the Boston Society for Medical Improvement, November 23, 1891.

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Clinical Department.

A CASE OF HYDROPHOBIA.[1]

BY GARDNER C. PIERCE, M.D., OF ASHLAND, MASS.

ABOUT seven o'clock on the morning of July 14, 1891, three children living in the south part of the town of Ashland, Mass., were savagely bitten by a Scotch collie dog weighing about sixty pounds, who seemed to be "running amuck" in attempting to bite every one he met in his pathway. He evidently was the same dog that bit a man in South Framingham about five o'clock on the same morning. Counting each tusk hole and each tusk laceration a bite, we found that Lizzie, aged eleven, was bitten in three places; Mollie, aged seven, was bitten in twenty-one places; and the little brother Myron, aged five, was bitten in nineteen places. Of these three children Lizzie, the oldest, presented only two bites on the left arm above the elbow, and one bite on her left cheek. Mollie, who was used the worst, presented severe wounds and lacerations on both legs below the knees; for she and her little brother were barefooted when attacked. The boy Myron also had very ugly wounds on his legs and left arm. On these two younger children about half of the bites consisted of a tusk hole from one-third to two-thirds of an inch deep, and the other marks of violence were deep tears or lacerations anywhere from one inch to two inches long. Some of these fissures were so deep that the flesh rolled out, presenting ragged, ugly, gaping wounds.

The patients were seen by the writer about thirty minutes after the attack of the dog. The wounds were cauterized with a thirty-three per cent. solution of carbolic acid. The father was advised to take these children to the Pasteur Institute in New York for treatment, immediately; for the dog was presumed to be rabid. The most certain way of ascertaining whether or no the dog was rabid, would naturally have been to have caught and placed him in confinement. But he was in altogether too dangerous a condition to allow of this. He evidently was laboring under an extreme degree of delirious excitement, and was ready, and even eager, to attack and bite every living thing that came in his way. After his attack on the children he made a fierce onset upon a teamster in the yard of the Adams farm, whereupon he was beaten to death with clubs by the attendants about the place. The animal was buried without the writer having an opportunity of seeing the body. But those who did see it, said he was quite thin of flesh. They opened his stomach, and found in it a dozen or more gravel-stones about the size of cherry pits, perhaps two tablespoonfuls of road-dirt, some grass, and some pieces of biscuit. Before he was killed he was frothing, they said, at the mouth and "furiously excited." All these circumstances seemed to indicate that the animal, without doubt, was rabid.

Just forty-eight hours after these children were bitten, they had reached New York, and had taken their first inoculation at the Pasteur Institute. The special methods in this treatment are well understood by us all, and need not be described here. These children were treated by what we would understand as the *simple* Pasteur inoculative method. The inoculations or injections were practised once each day. The term of treatment continued eighteen days. During the treatment the patients had no particular symptoms of any kind. On Saturday morning July 31, the children received their last and eighteenth inoculation, and the same day started for and reached home at eleven o'clock at night.

On the Tuesday morning following (August 4th,) Lizzie, the oldest girl, was taken ill with nausea and vomiting, and was quite feverish and restless. Her nausea and vomiting continued until the next day, when she began to improve, and by the night of August 5th was well again. She had no physician to attend her. What was the nature of her indisposition, cannot be known. Whether a recently inoculated person can present inceptive symptoms of the rabid state soon recovered from, is not now exactly known; but it is something to be looked for in future observations.

The next day after Lizzie recovered, Thursday afternoon, August 6th, and five days after he had taken his last inoculation at the Pasteur Institute, Myron, the little five-years-old victim, was also taken sick. His first symptoms were moderate feverishness, nausea and vomiting. There was a slight degree of hebetude in his demeanor. Friday, the next day, the nausea and vomiting continued. He was chilly and feverish by turns. His face was alternately flushed and pale. A physician thus far had not been called to him, for the parents supposed he was probably sick like his sister, and would soon be well again. But Saturday morning, as he appeared much worse, the writer was summoned, when he noted the following symptoms: Temperature 100°, pulse 105. The pupil of the left eye was considerably dilated. There was a constant twitching at the angles of the mouth, and a slight jerking of the fingers of both hands from a spasmodic action of the muscles of the forearms. The tongue was slightly coated. He did not complain of headache. To a close observer a slight, but somewhat peculiar staring expression was noticable in his eyes. His countenance for the most part was pale. By Saturday afternoon he was delirious at times, but in the intervals was quite rational. The stomach at this time could not retain much food or drink. He had much difficulty in swallowing liquids, yet could force some down after much effort. His eyes were sometimes bright and glistening, and at other times they appeared dull and expressionless.

On Sunday morning the patient was much worse in every way. All of the symptoms had increased in intensity. The temperature, however, was only 100.5°, but the pulse was 130 per minute. The skin would be flushed for eight or ten minutes, and then for about the same length of time be quite pale. An eruption appeared on the front part of the body, and on the left cheek, — more marked in these localities, but also faintly to be seen on the back and other parts of the body. It had somewhat the appearance of urticaria, but the patches were larger. Some were crescentic in shape, others were oval, while others were of irregular outline. For a few minutes — perhaps ten or fifteen — they could be seen in full figure, plain and distinct; and then they would disappear entirely, leaving the skin pale and somewhat dusky for about the same length of time, and then reappear, and so on repeatedly until the time of his death. The pupil of the left eye still continued dilated. During the intervals while the child was rational, his eyes and entire physiognomy wore a peculiar apathetic, mingled with a surprised and dumfounded expression difficult to describe and never to be observed in any other disease. At other times he was very delirious. He was exceedingly restless and wanted to be moved from one bed to another, and from one room to another frequently. His skin was exceedingly hyperæsthetic, and to be fanned was unbearable. Any breeze or gust of wind blowing on to the bare skin would cause him to make complaint.

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[1] Read before the Framingham Medical Society, November 3, 1891.

During the thirty-six hours preceding death he grew emaciated to a marked degree. Sunday, as the day advanced, the difficulty in swallowing increased. He was very thirsty; and, craving water, would seize a cupful with great eagerness; but the attempt to drink was invariably prevented by severe spasms in the throat. So he became hydrophobic, not because he did not want water, but because he did not dare to try to drink it. Another symptom noticed was a peculiar sound occasionally coming from his throat of a croaking character almost like a prolonged hiccough. It undoubtedly was produced by a synchronal spasm of both glottis and diaphragm.

Throughout the day, on Sunday, a thick viscid phlegm or saliva was continually collecting in the mouth and throat, and frequently had to be removed so the patient might breathe. As night approached, this secretion increased rapidly in quantity. About sunset a frothiness was continually appearing from the corners of the mouth and had to be wiped away almost continually. It was not noticed that his legs were paralyzed, as they sometimes are in the last stages of this disease. By seven o'clock P. M. he was weakening rapidly, and his throat filled with its secretions in such quantity, that it seemed impossible to keep this passage clear. He was continually delirious from eight o'clock until ten, when he passed into a comatose state. The twisting of his mouth and hands increased. He had no general convulsions, as is sometimes the case in this disease, but undoubtedly would have had, if he had lived a day longer. The patient died at quarter-past eleven Sunday night, partly from exhaustion, but more especially from asphyxia caused by spasm and the viscid secretions in the throat.

In the clinical history of this case the two most noteworthy symptoms were the hydrophobia and the ærophobia. These two characters are competent to prove in this patient's sickness, without the shadow of a doubt, the diagnosis of hydrophobia. Dr. James Boynton, of South Framingham, was called in to see the patient Sunday afternoon, and agreed that the case was one of hydrophobia.

The question now arises among the laity of this neighborhood, and very reasonably among physicians also, what cause, in this particular case, produced the hydrophobia, — the bite of the dog or the Pasteur treatment.

No physicians hereabout claim to be experts in rabic lore; but, if Pasteur had been here, he perhaps would have inoculated rabbits in the usual way with the virus taken from the medulla or spinal cord of this child, and then if they developed rabies after a period of incubation of *seven* days, it would have proved that the *treatment* caused the boy's death; but if the disease supervened after an incubation of *fifteen* days, it would have shown that the *dog-bite* killed him. The trouble hanging about this attempt to prove causes, involves the fallacy, that in coming to the crucial, practical test, Pasteur substitutes a *boy* for a *rabbit*; and, as a result, the incubatory conditions may be much changed by having the virus pass through the human subject.[2] So the above test is not conclusive or satisfactory.

With the existing limitations to our knowledge in this direction, for the present, our decision as to the safety and advantages of the Pasteur treatment must rest on the results given by thoroughly tabulated and well attested statistics. Statistics seem to prove that the death-rate under Pasteur's treatment is a little less than one per cent.; while the mortality in people bitten by rabid animals and not inoculated, amounts to fifteen per cent. at least.[3] The above statistics were made by a physician in Paris, who is not in any way connected with the Pasteur Institute. Other investigators have given non-treated cases a much higher mortality rate.

Now, if the Pasteur treatment is liable to *produce* rabies, then this fifteen per cent. of deaths among non-treated cases inevitably will be increased by the alleged dangers of the treatment *itself;* so that the statistics would, under this supposition, show a larger percentage of deaths *under* treatment, than it would *without it;* which is, we well know, not the case. Furthermore, it is claimed, that nearly all the physicians and attendants connected with the Pasteur Institute in Paris have been inoculated, and none of them ever suffered any harm from the procedure.

The all important question arises: What will you do, if there is brought to you a person, who has just been bitten by a rabid animal? The writer of this paper would send him to the Pasteur Institute immediately. But in the face of this assertion, at a medical meeting held somewhere here in New England, there was put to vote this question: Will you send your cases bitten by rabid dogs to the Pasteur Institute for treatment? A very few physicians voted "Yes"; a very few voted "No"; and quite a majority did not vote at all. The result of this vote shows that this question is far from being settled in the minds of our medical men even at the present time, and is still a subject worthy of much further consideration.

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EXTRA-UTERINE PREGNANCY; CŒLIOTOMY; RECOVERY.

BY F. W. JOHNSON, M.D.,
Visiting Gynecologist, Carney Hospital; Visiting Gynecologist, St. Elizabeth's Hospital.

G. F., married, aged twenty-eight, consulted me, Tuesday, September 29, 1891. A diagnosis of extra-uterine pregnancy was made, and I operated on her the next day at the Carney Hospital. The following is the history of the case and the result of the examination:

Dysmenorrhœa since puberty. The pain, situated in front and low down in the abdomen, comes on several days before the flow and lasts throughout menstruation. For the past year has had quite severe pain in the right ovarian region when unwell. Flows five days. Flows quite freely. Leucorrhœa for years. Always been regular to the day until August 9th. Instead of menstruating at this time, she went to August 16th, just one week over her time. August 16th flowing begun and continued, at times profusely, for two weeks. In two weeks the flowing again begun, and has continued up to the present time. Since August 16th, when the flowing began, until September 20th has had a dull pain in right ovarian region. The breasts have enlarged. Sunday, September 20th, was suddenly seized with severe cutting pain in right ovarian region. This pain lasted one hour, and produced fainting. This severe pain was repeated September 28th, and lasted two hours. Formerly the pain in the right ovarian region was dull in character, but since the severe attack of pain it has been more cutting in character. From August 9th to August 16th, the week following the date of expected menstruation, there was dull, heavy dragging-down in lower abdomen.

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[2] Boston Medical and Surgical Journal, April 1, 1886, p. 299.
[3] Braithwaite's Retrospect, page 20, January, 1890.

Examination. — From half-way between umbilicus and pubes, extending over the whole of the lower part of the abdomen, there was marked sensitiveness on pressure. By vagina, a soft mass, the size of the fist, excessively sensitive, was found in Douglas's pouch, and on this the uterus rested in a position of retroversion. Bright red blood flowed from the cervix. Uterus measured three inches in depth. Temperature 99°; pulse 110.

Operation. — Dr. Holder assisted. Drs. Conant, McQeeney and Storer were present. On opening the peritoneal cavity, dark-colored blood welled up through the incision. The abdominal cavity below the incision contained fluid and clotted blood of a dark color, and no bright blood was found until the right tube and ovary were brought into view. A portion of the right tube towards the ovary was found dilated. This dilatation was about the size of a small English walnut. and from the upper part of it fresh blood oozed out through an opening the size of a pin's head, The right tube and ovary were ligated and removed. On the left side a cystoma of the ovary was found, and it, with the tube, was ligated and removed. The peritoneal cavity was thoroughly washed out five times with a saline solution, and the abdominal wound closed with silk. Silk was used, as my supply of silver wire had been exhausted on a laparotomy done two hours before. About a quart of fluid and coagulated blood was removed. The mass in Douglas's pouch was composed of coagulated blood, and was dug out with the fingers. Sutures removed on the eighth day. Convalescence was uninterrupted.

Twenty-three days after the operation she was discharged well. December 2d, she reported that she felt perfectly well.

My first case of extra-uterine pregnancy was operated on November 26, 1877. Rupture took place at the Globe Theatre. The patient gave a "loud scream, and fell to the floor unconscious." She was carried home in a carriage, and after a few weeks' stay in bed was able to be about. Though an old patient of mine, I had not seen her until she got about. On examination, a mass as large as a cocoanut was found posterior to the uterus. This mass felt hard, somewhat elastic and non-fluctuating. Cœliotomy was done, and an intra-peritoneal hæmatocele found. The coagulated blood was walled off by adhesions between intestines, omentum, tubes and broad ligaments. On the right side the appendix helped to make part of the wall. Both tubes and ovaries were removed and the abdominal cavity cleansed of blood. Drainage tube inserted. The pathologist was unable to find anything in the mass of blood and *débris* that would point to a rupture of an extra-uterine pregnancy as the source of the intra-peritoneal hæmorrhage.

Dr. Whitney's Report. — "The following is the description of the ovaries and tubes from the case of Mrs. G. F., received from you, October 1, 1891:

"(1) Ovary and Tube. The portion of the tube measured about six and one-half centimetres. About two centimetres from the fimbriated end, which was normal, was a rounded enlargement measuring about two and one-half centimetres by two centimetres, dark red in color and covered with shaggy, thin adhesions. About the middle of the nodule opposite the side of the ligament was a very small rent with a hæmorrhagic infiltrated edge. The remainder of the tube, about two centimetres, was of normal size and calibre. Sections made through the nodule, and examined microscopically, showed the greater part to be made up of blood clotted among small villous projections, fibrous in character, and covered with a low epithelium, similar in every way to the villi of an immature placenta. Just beneath the outer surface were large and very thin-walled vascular sinuses. The cavity of the tube was dilated, and its lining membrane was apparently reflected up on to the mass of blood and villi: but whether it was continuous entirely over it, could not be determined. Apparently, however, it was not. From the distal end of the nodule there opened a distinct diverticulum from the tube, which could be followed almost to the fimbriated end, where it stopped. The relations were such as to show that the nodule had developed entirely in the main tube, and not in the diverticulum. In none of the sections was there any evidence of a fœtus found. The ovary attached to this tube measured two by two and one-half centimetres, was irregularly shaped, and from one place a reddish nodule projected, which, on section, showed an irregularly festooned outline enclosing a yellow mass of large cells (corpus luteum).

"(2) Tube and Ovary. The piece of tube measured about six centimetres, and was of normal size and structure. The ovary measured about three by four centimetres, and was mostly made up of a cyst, filled with thin fluid, extending deeply into the hilus, where there was a layer of ovarian tissue gradually thinning out over the cyst.

"The case is one of tubal pregnancy, with rupture. There are no positive data as to the length of time, but from its size it is probably within two months."

THE TITLE OF M.D. IN ENGLAND. — A case of interest to the medical profession in England has recently been decided by the court of Queen's Bench. The defendant having the right to practise in England by the degree of L.S.A. only, publicly described himself as an M.D. on the strength a degree issued by the Beach Medical Institute of Indianapolis. It has been decided that the possession of a degree not registrable in England is not sufficient to justify the holder in describing himself by the title of the degree for the purpose of obtaining practice, even if he has already the right to practise by virtue of some other degree.

Medical Progress.

REPORT ON PROGRESS IN OBSTETRICS.

BY CHARLES M. GREEN, M.D.

MATERNAL IMPRESSIONS.

EVER since the appearance of a paper on this subject by Fordyce Barker, not long before his lamented death, the journals have furnished numerous instances, apparently well authenticated, of the effects on offspring of startling impressions on the mother. It is not easy to explain away on the "coincidence" theory these evidences of marked physical impression during pregnancy: nor again is it easy to understand how these impressions occur, nor why they do not occur oftener, if at all.

Herr[1] (Ottawa, Kan.) reports two authenticated cases, one quite recent in his own city: a lady six weeks' pregnant was summoned to court, and was interrogated by a justice who had cleft palate. The woman was much frightened and for weeks this experience was present in her mind: her child was born with a deformity identical with that of the justice. In the second case, a pregnant woman was frightened by a frog which had been purposely placed behind her chair: she fainted when she saw the frog, and her child was born with a head which was said to be "the exact image" of the frog's. [Was it simply a species of anencephalus?]

[One case has occurred to the writer, in which a pregnant woman was startled by a rat on going down a flight of stairs in the dark: her child was covered as to its back with a growth of soft, brownish-gray hair, resembling that of the common rat, which did not disappear as the child grew out of infancy. The question is occasionally raised, apropos of the physical defects and deformities which are so frequently reported as the result of maternal impressions, why physical beauty may not be imparted to offspring by suitable influences thrown about the mother: it is quite commonly believed among certain circles of the laity that such a result is possible. Medical science has not lent itself to any extent to the solution of these psychophysiological questions; but the future may have much in store for those interested in the prosecution of inquiries in that direction. — REP.]

STRYCHNIA AND THE HOT DOUCHE IN THE PROPHYLAXIS OF PROTRACTED LABOR.

Ferguson[2] (Toronto) recommends the administration of strychnia in the latter part of pregnancy with a view to improving the muscular tonicity of the uterus and thereby shortening the duration of labor: incidentally the drug is known to act as a bitter tonic and as a corrigent, to some extent, of intestinal inactivity so common in pregnancy. Ferguson gave strychnia to one hundred gravidæ whose previous labors had been protracted owing to uterine inertia and irregular, crampy pains: primiparæ were excluded. The hundred cases treated with strychnia had an average of nine hours of labor; whereas the average duration of previous labor in the same hundred women was seventeen hours. He found that the uterine tonus was much improved by the course of strychnia, the contractions being longer and more regular: he also observed that better contractions ensued in the third stage, that after-pains were greatly lessened, and the amount of hæmorrhage reduced. The dose employed varied from one-sixtieth to one-thirtieth of a grain three times a day: one patient had one-sixteenth of a grain thrice daily, her two preceding labors having been characterized by almost complete uterine inertia. No ill effect was observed in any case.

[The reporter has for some years been accustomed to give thrice daily during the last two months of pregnancy, to all but apparently strong and robust women, one-fourth of a grain of extract of nux vomica combined in pill with one grain of Querenne's iron. No observations have been made by him with reference to the possible shortening of labor by this treatment; but there has been no question but that patients have been generally benefited thereby. Ferguson's experiment is an interesting one, and his recommendations worthy of trial. Certainly very many gravidæ are much benefited by general tonic treatment, and those of flabby muscular fibre ought to have a better labor under the stimulating influence of strychnia. It is perhaps needless to add, however, that too much reliance must not be placed in drugs alone, but that attention should be directed to nutrition and general hygiene: poorly nourished muscles cannot effectively respond to any stimulus. — REP.]

Ferguson also recommends the use of a two gallon vaginal douche twice a day for a week or ten days before labor, as a means of softening the cervix in primiparæ and in those in whom previous tedious labors have been known to be due to rigid soft parts: he recommends that the water should be 105° to 110° F. hot, and that the hydrostatic pressure should be only sufficient to cause the water to flow. Used in this way he has never known the douche to induce labor prematurely.

THE TREATMENT OF POST-PARTUM HÆMORRHAGE FROM TEARS OF THE CERVIX.

While hæmorrhage from the smaller vessels in the cervix may be controlled by hot vaginal douches or by gauze tampons with or without styptics, tears of the uterine artery or one of its large branches give rise to bleeding which soon proves alarming unless the torn vessels are secured by suture. The operation of repairing a torn cervix post-partum is not a difficult one, especially since it is easy with vulsella forceps to draw the uterus down to the vaginal introitus, where the sutures can be introduced by sight. But if the attendant has not the means at hand for properly repairing the tears, and wishes to control the hæmorrhage while waiting for assistance to arrive, it is useful to remember that traction on the cervix with a suitable forceps will accomplish the desired result.

Parsenow[3] (Stettin) reports a case in which this fact was clearly shown: called to the assistance of a colleague he found that for over two hours the latter had controlled a serious hæmorrhage from a torn cervix by bimanual pressure; but on the least cessation of pressure the bleeding was shown to be unchecked. Parsenow seized the cervix with toothed forceps and drew it deeply down, when the bleeding at once ceased: sutures were then inserted and the tear closed. In other words, strong traction on the uterus puts the large vessels on the stretch and thereby efficiently occludes them.

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[1] Medical Record, November 28, 1891.

[2] American Journal of Obstretrics, May, 1891.

[3] Centralblatt für Gynäkologie, 1891, 27.

A PLEA FOR FULL MECHANICAL DILATATION OF THE PARTURIENT CANAL BEFORE OBSTETRICAL OPERATIONS.

Under this title Abbott[4] (New York) has called attention to an important obstetric procedure, which is too apt to be ignored or forgotten. It is commonly acknowledged that the cervix should be dilated by nature or art before delivery is attempted; but there is less appreciation of the desirability of a well-dilated vagina and perinæum before the child is allowed to pass. Some writers indeed have recommended leaving the membranes intact until the vagina as well as the cervix is dilated: the younger Byford wrote in advocacy of such procedure. But in most cases the membranes rupture spontaneously when the os uteri is fully expanded.

Recognizing the necessity in some cases in which rapid delivery is indicated of extracting without previously complete dilatation, Abbott truly claims that except in such emergencies, complete dilatation of the entire canal should be secured before operating. The advantages of such dilatation are that more accurate diagnoses can be made, instruments can be more easily used, lacerations are less likely to occur, and there is less danger of serious compression of the fœtal head and of uterine atony from exhaustion. Certainly it is as desirable to dilate the lower as it is the upper part of the birth-canal. The writer further points out that oftentimes when the head is arrested, complete dilatation under anæsthesia stimulates increased activity in the expulsive forces and at the same time diminishes the resistance to be overcome; hence a labor will often terminate naturally which would otherwise have required artificial assistance.

The dilatation is easily accomplished with the hand, introduced with care in conical form and under most careful asepsis.

ANTIPYRIN AS A MEANS OF RESTRICTING THE SECRETION OF MILK.

Guibert[5] (Montpellier) found accidently on two occasions that after taking antipyrin at the rate of two grams a day, nursing mothers showed already on the second day a considerable diminution of milk secretion: after the antipyrin was omitted the milk returned to its former amount. He then tried the drug on nineteen cases, in seven of which the women had nursed several days, in the other twelve not at all: in each case he found the secretion was diminished. If the drug was continued for some days, the milk entirely disappeared.

SALT-WATER ENEMATA IN SEVERE POST-PARTUM ANÆMIA.

The intravenous and subcutaneous use of salt solution has been found efficacious in severe anæmia post-partum; but in these forms of administration special instruments and skill are necessary. Heer[6] has met with good results by introducing the solution per rectum, — a method easy of application and unattended with danger. In a case of severe hæmorrhage following podalic version for placenta prævia, there was profound anæmia which did not improve after the usual treatment; and the radial pulse was not to be felt. About two litres of a lukewarm, one-half per cent. salt solution (one teaspoonful to the litre) were administered per rectum, and the patient rallied with surprising rapidity, but collapsed again after a few hours. After a repeated enema of this solution, the pulse returned, the general condition continued improved, and the patient recovered in about a month.

Heer recommends in all forms of severe anæmia the rectal administration of salt solution as far superior to the intravenous or subcutaneous methods of application.

THE CARE OF THE BLADDER BEFORE AND AFTER LABOR.

Coe[7] (New York) has a useful paper on this subject which deserves to be widely read. The article does not admit of sufficient condensation for this report; but a few points are worthy of especial emphasis.

The diplococcus found in the urine of puerperal cystitis is identical in form with that constantly present in the lochial discharge, and bacteria may reach the bladder by extension along the urethra, even when no catheter has been used: hence the prophylactic value of spraying or otherwise cleansing the external genitals several times daily with an antiseptic solution. [A very good rule is to cleanse the vulva every time the pad or napkin is changed.] It is unnecessary to point out the probability of infection from the use of unclean catheters; but it is not fully realized that bacteria may be carried into the bladder, if the catheter is passed without previously cleansing the vestibule, and even then, if it is passed by touch. Garrigues has said "the old way of drawing the urine under the bed-clothes was modest. but is irreconcilable with antiseptic midwifery." In short, he who would surely avoid puerperal cystitis must not only use a clean catheter, but must place it directly within the meatus by sight, the parts having previously been cleansed.

While the catheter must occasionally be used for various reasons, it is often employed simply because a woman cannot pass her water lying down. To overcome this inability, Skutsch has recommended that women acquire the art of urinating in the dorsal posture by practice in the latter weeks of pregnancy. Coe justly thinks this an unnecessary procedure, and has adopted the plan of allowing the woman who cannot micturate lying on her back to be supported in a sitting posture on a bed-pan in normal, uncomplicated cases. [This procedure would seem startling to many, until they remembered that among the poor this is a common practice. Unless a woman is very weak from long, exhausting labor, from hæmorrhage or antecedent disease, unless there is some inflammatory complication or a torn perinæum, and unless there is some cardiac lesion, there seems to the reporter no good and sufficient reason why a woman should not be assisted to sit up six or eight hours after labor long enough to pass her water. Many women can pass urine lying on the face or resting on the hands and knees; but if not, there would seem to be no adequate reason why, in uncomplicated cases, puerparæ should not be allowed to sit up. Considering the risks of careless catheterization, such a plan is eminently preferable to a ready resort to the catheter. In a recent case of inability to pass urine on the back, the reporter allowed the woman to sit up with no untoward result. Rep.]

Professor Bardeleben, of Berlin, on the fiftieth anniversary of his graduation in medicine, received from the emperor a patent of hereditary nobility.

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[4] Medical Record, November 28, 1891.

[5] Arch. de tocologie, 1891, June. Centr. f. Gynäk., 1891, 50.

[6] Centralblatt für Gynäkologie, 1891, No. 48.

[7] American Journal of Obstetrics, July, 1891.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, November 23, 1891, the President, DR. FREDERICK I. KNIGHT, in the chair.

DR. J. H. MCCOLLOM read a paper entitled

THE SANITARY CONDITION OF BOSTON: A STATISTICAL PAPER.[1]

DR. H. P. WALCOTT: Dr. McCollom's paper is most interesting, and has for its groundwork a body of vital statistics unequalled, for a city of the size of Boston, in this country, and not surpassed in any European State. It is probably well known here that the compulsory notification of cases of certain communicable diseases, which has existed for years here, has been introduced into Great Britain within the past two years only.

There is one apparent omission in Dr. McCollom's paper which I am inclined to criticise, and that is, the proportion of the number of children living, below five years of age, to the total population. I cannot help thinking that a chart, which recorded this proportion in connection with the other facts, might not show the curve so favorable to Boston as compared with Glasgow, which is observed in Chart III.

Though this proportion cannot now be ascertained for every year, it can be stated with reasonable accuracy for the years of the National and State census. I hope that this very valuable paper may be enlarged by some vital statistics of the sort indicated, because our public health authorities may in this way get some help to better methods of preventing excessive infant mortality.

DR. S. H. DURGIN: The paper is full of interesting facts, and it would be easy to conclude from a statistical point of view that Boston is in a good sanitary condition compared with many other cities. I suppose it is questionable as to how far we are justified in stating the sanitary condition of a city by its rate of mortality, and yet the fact that some relationship exists between the death-rate from preventable causes and the sanitary condition will not be doubted.

In looking over the death-rates of London to-day, I find that the percentage of deaths of children under five years of age to the total mortality has been gradually reduced from 44 in 1880, to 40 in 1889, while in Boston the percentage in the same class has been reduced from 38 in 1880, to 32 in 1890.

I wish I could present the comparative physical condition of Boston to you in as favorable light as Dr. McCollom has presented the statistical comparisons.

If we measure our present condition by the advanced standard of sanitary requirement, we shall find many deficiencies. It is only when we compare the present state of our city with that of ten or twenty years ago that we can see a steadily improving sanitary condition. It would require too much time to review all of these changes, some of which have been most satisfactory. It may be stated briefly that our sewerage system has been vastly improved and although not wholly finished, will soon be satisfactory to our own and neighboring cities.

Our streets have been the subject of much discussion. They have been considerably improved in cleanliness and for practical use during the past year, and we can reasonably hope for greater changes as the subject becomes better understood by the City Council. Privy vaults and cesspools, which have been a constant menace to our people, are rapidly disappearing. The location, construction and care of stables are matters now dealt with under careful regulations and to the greater comfort of those who live about them. The high-tide levels, which were formerly of great annoyance and injury in parts of the city have been largely reduced by the construction of the intercepting sewer, which nearly encircles the city, but the ground-water line is still too near the surface in many parts of the city for the welfare of those who live on the lower grades. The tenement-house has been greatly improved in construction, adaptation and care, and yet a large percentage of the poorer class of the city are living in tenement-houses which are more or less overcrowded or otherwise unsuited for such occupancy. One great hindrance to a more rapid improvement in the tenement-house population is the lack of better but cheap accommodations, particularly in small isolated houses in the suburban districts, to which families may be sent from the crowded tenement-house.

DR. G. H. M. ROWE: I have but little to add to the subject of Dr. McCollom's paper. I have been extremely interested in the facts as given by him, and I think the paper is entitled to much praise. Like all statistical papers, it is one that should be studied by comparison in order to get at the deductions.

There is one suggestion that has been alluded to by Dr. Durgin, and that is, that the mortality is not always the proper guide for the number of cases of these various diseases. This has been notably exemplified at the Boston City Hospital. Some four or five years ago we rarely had a daily average of over forty to fifty cases of typhoid fever at the height of the typhoid season. Two or three years ago our daily average was between eighty and ninety, but this year, for six consecutive weeks, we have not run below ninety-five, and have had on a single day, one hundred and nineteen cases in the hospital. While the daily average number of cases has been very much larger, the death-rate has been much less than five years ago.

The opposite is true in regard to diphtheria. So far during the year we have had a much less number of cases than last year, and our mortality has been much higher. There are various ways of explaining this condition: the type of the disease and the stage in which it is brought to the hospital. The number of cases and the tables of mortality of the same sometimes go in opposite directions, as I have indicated. I believe it to be undoubtedly true that the laws in regard to compulsory notification in regard to contagious diseases are not carried out with the thoroughness that should be done. When this law is honestly and efficiently carried out, we shall then know much better of the true condition of public health in our community than we do now from the returns in the mortality of these diseases.

DR. J. B. AYER: Dr. Durgin referred to the disinclination of those in crowded parts of the city to live in the suburbs. It seems to me in the part of the city where I live there has been a great change in that direction. Many of the families who lived there a few years ago now live several miles away from the State House. Perhaps they did not live in crowded houses, but several families in a house.

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[1] See page 49 of the Journal.

Dr. Geo. B. Shattuck: Dr. McCollom's paper was so condensed and so full of important and interesting statements and figures that I may have missed some things, but I should have been glad to have had him give us a few more conclusions in regard to the subject. For instance, I should have liked his opinion with regard to consumption in reference to races, that is, some explanations in regard to the very high mortality in consumption here; whether our large proportion of Irish in the population accounts for it, and whether the number of that race in different wards bears any relation to the deaths from consumption. Of typhoid fever I see a great number of cases every year at the City Hospital. I never have had more than during this winter. In my service alone I have had pretty steadily an average of between thirty and forty cases, and that is only one out of three medical services. I have frequently heard the statement that a good deal of the typhoid fever is brought into Boston from the outside, and consequently I have taken an interest in the individual cases as far as I could to find out whether these people have been outside of Boston, and I find that in many instances they have not, that the disease probably originated in the city. Of course I am speaking of cases as they are seen at the City Hospital, and I should like to have had some conclusion as to whether the amount of typhoid fever was proportioned in any way to the wells and cesspools in the wards. I suppose a low rate of mortality in typhoid fever in a city is to be explained by a good water-supply and good drainage. The present perfection of those systems in Berlin, where much money has been spent, would be given as an explanation of the low rate of mortality from typhoid fever there. Certainly Berlin is a city where otherwise you would expect to have a good deal of typhoid fever. No doubt Dr. McCollom in summing up can give us some interesting conclusions in regard to these points.

Dr. J. H. McCollom: In reply to Dr. Walcott's question I would say that it was impossible for me to obtain the requisite data from all the cities for estimating the percentage of deaths under five years of age to the living of that age for 1890. I agree with the gentleman regarding the importance of this percentage. The estimated number of living children under five years in Glasgow and in Edinburgh for 1890 with the percentage of deaths of children of this age can be found in the Annual Report of the Registrar-General of Scotland for 1890. In Glasgow, for 1890, the number of living children under five years of age was 72,636; the number of deaths was 5,780, giving a percentage of 7.96. The percentage of deaths under five years of age to the total mortality for the same year was 43.20. In Edinburgh, for 1890, the number of living children under five years of age was 33,258; the deaths were 1,899; the percentage was 5.71. The percentage of deaths under five years of age to the total mortality for the same period was 35.00. In these two cities it is evident that the percentage of deaths under five years to the total mortality bears a direct relation to the death-rate per one hundred of the estimated number of living children of this age. The accompanying table gives the number of living children under five years of age; the number of deaths under five years; the death rate per one hundred, and the percentage to the total mortality in six cities for 1880. As this was a census year the number of living children in the American cities may be considered correct.

Deaths of Children under Five Years in Boston, New York, Philadelphia, Glasgow, Edinburgh and Berlin, 1880.

Cities.	No. of Children under 5 yrs.	Deaths under 5 yrs. in 1880.	Per cent. Deaths to the Living	Per cent. to Total Mortality.
Boston	37,138	3,319	9.01	39.26
New York . . .	140,387	14,650	10.43	45.60
Philadelphia . .	91,544	6,799	7.43	39.33
Glasgow	?	6,042	8.68	45.40
Edinburgh . . .	?	2,118	7.60	42.85
Berlin	143,023	19,532	13.65	50.51

It will be seen from this table that a high percentage to the total mortality does not always indicate a high death-rate of children, as, for instance, Glasgow compared with New York. The percentage to the total mortality in the former city being 45.40 and the death-rate per one hundred of children under five years being 8.68, while in the latter city although the percentage to the total mortality is practically the same, the death-rate is 10.43. If Boston and Philadelphia are compared, it will be seen that, although the percentage to the total mortality in each of these cities is 39.00, there is a marked difference in the percentage of deaths under five years to the living of that age, the rate being 9.01 in the former city and 7.43 in the latter. If Berlin and New York are compared, however, there seems to be some relation between the death-rate under five years of age and the percentage to the total mortality. An increase in the death-rate coincides with an increase in the percentage to the total mortality in these two cities.

In reply to the question of Dr. Rowe, I would say that I have no doubt of the advantage gained by compulsory notification of cases of contagious disease. Of course all the cases are not reported because in many of these instances there is no physician in attendance.

In reply to Dr. Shattuck's first remark I have to say that, as a mere opinion based upon a very limited number of statistics, the children born in this country of Irish parents, are the most susceptible to consumption; that the young Irish immigrant comes next; and that the German immigrant is the least susceptible. The following tables give the deaths from consumption in Boston for 1890 with the nativity of the parents. These figures would be much more valuable if the number of the living of each nationality was given.

Deaths from Consumption in Boston, with Nativity of Parents, 1890.

Nativity.	No.
United States	237
Ireland	796
England	37
Scotland	11
Germany	41
British Provinces	91
Italy	11
Other Countries	120
Mixed	78
Unknown	73
Total	1,495

The comparative immunity of the Italians is an interesting fact. Coming from a warm and enervating climate we should naturally suppose that they would be extremely susceptible to this disease, when, as a matter of fact, it is not so prevalent among them as among the Scotch and the English. As the number of Italians in Boston is nearly three times as great as that of the Scotch or of the English some idea of the relative frequency of this disease in these nationalities may be gained from the table. In reply to Dr. Shattuck's second remark, I have to say that typhoid fever has not been most prevalent in the localities where vaults exist. There are so few vaults in Boston, at the present time, that they could not be very important factors in the causation of this disease. The difference in the ratios of Wards 6 and 7 may be explained by the fact that there are more immigrants arriving in the former ward than in the latter. The newly arrived immigrant is particularly susceptible to this disease.

Dr. R. W. Lovett read a paper on,

THE TREATMENT OF CHRONIC SPRAINS OF THE FINGER-JOINTS.[2]

Dr. W. P. Bolles: I have been much interested in Dr. Lovett's paper as he has treated of a class of cases that occur pretty commonly in surgical practice. and yet are not adequately noticed in the text-books. The pathology is undoubtedly complicated, and I think is pretty well illustrated by a case under my care at present. A gentleman accidentally struck the end of his finger against some substance which hurt it rather severely at the time. In a little while it seemed better, but after three or four days it had not got well, and he came to me with a very painful terminal joint of his little finger, swollen, reddened, skin shiny over it. intensely sensitive, aching when it was not being manipulated. I followed the routine treatment, put it on a splint, and he came back to me in three or four days, and it was about the same. Then he had hot water applications and some massage, and again he came and it was just about the same. Then the inflammation had extended backwards on the finger until the next joint became swollen, and at the end of three weeks the whole little finger was uniformly swollen and sausage-like in shape and shiny. It is now about four weeks since the injury and he has acquired the habit of holding his little finger off, can't close the hand. The final joints of nearly all the fingers are mostly immovable. If I undertake to shut in all the other fingers which have not been hurt, he complains of it. I think there is no doubt that this extension of the stiffness and pain is a nervous condition resulting from the more or less constant attention to his finger muscles and arm muscles, and attempting to hold the little finger perfectly immovable. It seems to me further fixation of the hand or finger is hopeless, and I have advised him to leave off apparatus and begin to move the finger and have massage applied once or twice a day. I think I shall try the faradic current for the relief of pain and limbering up of the joints. I very much question whether fixation at the beginning was of benefit. Probably if he had given it proper attention at first, he might not have gone through this series of discomforts. He is a nervous man.

Dr. M. H. Richardson: I do not think Dr. Lovett need to apologize for presenting this subject. We ought to judge of a subject from the frequency of occurrence and the difficulty of treatment. I think these cases ought to be treated as if some serious disease was possibly in progress. Take the case of the woman whom he showed to-night, I think that might have resulted in loss of the finger, especially as the lateral ligaments of the joint are already lax. I have been accustomed, in what few cases I have seen of late years, to keep the joint still, and to get passive motion as soon as possible.

Dr. E. O. Otis: I saw a case sometime ago, the result of a foot-ball accident. A student received a bad sprain of the second phalanx of the finger. When he came to me sometime after, the joint was large and almost immovable, with not very much pain. It was immobilized and the splint removed every day and hot water used. As time went on he did not seem to receive much benefit, and at this time it is still in that large, more or less immovable condition. What the result will be I do not know. It is a good suggestion of Dr. Lovett's that massage be applied.

An interesting fact in this case was that he bound this finger up tightly with the other finger, and with the two fingers extended he was not only enabled to practise foot-ball, but to play in the championship games without apparent further injury to the finger.

GALL-STONES REMOVED FROM CYSTIC DUCT. SUPPURATING VERMIFORM APPENDICES. MALIGNANT TUMOR OF OVARY.

Dr. M. H. Richardson showed two specimens of gall-stones removed from the cystic duct during the past week. The first is a very small one. The diagnosis was made by Drs. F. C. Shattuck and Cutler, and an operation for relief was advised. The gall-stone was impacted where these gentlemen said it was, in the cystic duct of a very much contracted gall-bladder. This is the third operation on the gall-bladder I have performed for gall-stones. The gall-bladder was greatly contracted, thickened and very friable. This last condition, friability, makes all manipulations very difficult, especially that of approximation and suture to the abdominal wall.

The second case was of a gentleman of sixty-four, whose life for eight years had been made miserable by biliary colic. He had spent a portion of every year at Carlsbad, with temporary relief. Recently he returned from Carlsbad without the accustomed benefit, and has required frequent and daily injections of morphine to make him comfortable. The diagnosis of gall-stones was made long ago by his physician, Dr. J. P. Oliver, and confirmed by Dr. Fitz. We found eight large facetted stones in a row extending from the gall-bladder into the cystic duct.

Both these cases have done remarkably well. The boy now, at the end of a week, is in a very good condition. The second operation was performed two days ago, and the temperature is now normal.[3]

I would like to mention in this connection a case I had a year ago. It was that of a woman who had suffered many years with symptoms of biliary colic accompanied by jaundice and profound cholæmia. I found the gall-bladder contracted and friable with a large gall-stone in the cystic and another in the hepatic duct. In this case, after the removal of the stones, I was confronted with the formidable condition of a large opening near the foramen of Winslow, with vast quantities of bile escaping into the abdominal cavity. I contrived to fasten a glass tube into the ragged remains of the cystic duct by which, with the aid of gauze packing, perfect drainage was established. The woman did well for six or seven weeks, although there was no diminution in the amount of bile discharged through the tube or of the jaundice. At the end of that time she had a gradually rising septic temperature and died from the effect of a sponge which had been left at the time of the operation in the abdominal cavity, in spite of the usual precautions taken to prevent this accident, namely, the counting of all the sponges by a special nurse, both before, during and after the operation.

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[2] See page 54 of the Journal.

[3] Both cases made speedy recoveries. December 24, 1891.

I have two specimens of vermiform appendix in both of which there has been perforation and local peritonitis. In both drainage was established among healthy intestines. In each case, as in the first cholecystotomy, I used wick drainage of iodoform gauze, in one combined with a tube. This method provides the most satisfactory drainage in septic cases in my experience. Both cases are doing very well indeed.[4]

The next specimen is one of abdominal tumor removed to-day. It was poor judgment on my part to have attempted its removal. Having started in this attempt, however, there was no possibility of abandoning the operation. It was a rapidly-growing tumor of the abdomen in a woman between fifty and sixty years of age. I had been studying the case for a week, and had come to the conclusion that it was probably malignant tumor of the ovary. I thought so, among other reasons, because of its rapid growth and the coexistence of ascites. I made an incision to-day and finding no apparent malignancy about it, as it presented, determined to remove it. On separating its adhesions to the transverse colon, I met with quite evident malignancy which I had not been able to discover before. It was then too late to retreat, the semi-solid mass having gone to pieces in careful efforts at separation. The descending colon, just below the splenic flexure, was so intimately adherent to the tumor that it was impossible to separate them. I removed a piece about four inches in length at the junction of the sigmoid flexure and the descending colon. It was very difficult, indeed, to bring the divided ends together. The arrangement of the descending colon and sigmoid flexure was a little unusual, the beginning of the sigmoid flexure being rather higher up than normal. It was not as much covered by peritonæum as in the majority of cases. Through the entire bend the disease had established itself. The divided end of the descending colon was immovably fixed in its normal position, but the other end, in the sigmoid flexure, was freely movable. It was necessary, therefore, to bring the movable sigmoid flexure up into the left flank at the posterior wall of the abdominal cavity, and to fix it by means of the ordinary Lembert stitch in this position. I was able to make a very satisfactory joint in the ordinary method. There being no peritoneal covering to the posterior portion of the cut ends I was fearful of an extravasation of fæces. I therefore packed above, below and around the joint with iodoform gauze, and I think, if she survive the shock necessarily great, she will do well. Should the stitches give way, drainage will have become established and we shall have nothing more than a fæcal fistula as after removal of the appendix, which will take care of itself.[5]

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[4] Both recovered well. December 24, 1891.

[5] Died a few days later.

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HENRY INGERSOLL BOWDITCH, M.D.

Dr. Henry Ingersoll Bowditch died January 14th in the eighty-fourth year of his age, after a long illness, which he bore with such courage and cheerfulness and manly patience, that it was a benediction to be near him.

Dr. Bowditch inherited from his father, Nathaniel Bowditch, the eminent mathematician, and his mother, Mary Ingersoll, those sterling qualities which, developed by their example and teaching, made him, in later years, a leader among men. His child-life was fortunate in the companionship of three brothers and two sisters, all very like him in having individuality and force of character. As a school-boy he was kind, generous, sympathetic, truthful, manly, but thoroughly a boy, and the shout that there was "a nigger on the common" or a fight going on between the boys of the opposing sections of the town, brought him quickly to the front. From the open-air life insisted upon by his father came the healthy mind in the sound body. The simple living, the early love of nature, the habits of industry and self-denial so common to the New England life of his time encouraged a thoughtfulness, self-reliance, independence of mind and vigor of action which have become more rare with the increase of wealth and luxury.

In college, he was the same warm-hearted, good fellow, straightforward, impulsive, pugnacious, ardent — although not an ardent scholar — sensitive and popular, always to be depended upon.

After taking the degree of A.B. at Harvard in 1828, and later the A.M., he graduated at the medical school in 1832, having also been house-officer at the Massachusetts General Hospital. Dr. Bowditch spent two years in Europe studying for the most part with Andral, Chomel and especially Louis, whom he fondly called his master. It was still the day of dogmatism and pedantry and system-making, but Louis, one of the first of the iconoclasts, was teaching the close study of nature and the careful observation, faithful records and accurate analysis of facts as the true basis of medical knowledge and practice. Dr. Bowditch came back to Boston full of enthusiasm for Louis's methods, where, indeed, he found Dr. Jacob Bigelow, his senior by twenty-one years, already a pioneer in the new field. While waiting for practice he devoted much time to benevolent work and took great pleasure in helping those who needed encouragement or assistance, especially the young — interests which he kept up to the last. Having by chance been an eye-witness of the famous Garrison mob in 1835, his quick sympathy and intelligent foresight led him to devote his "whole heart to the abolition of slavery." "But," he adds in his diary, "even anti-slavery never has taken me away from constant labor for the elevation of medicine." When he became an abolitionist, church, State, the constitution and laws of the country, old friendships, social ties were all against him. He was mocked, sneered at, passed on the street without recognition by his father's old friends; but his courage never faltered, his faith in humanity and the final triumph of his cause never failed. Without even any feeling of bitterness for his opponents, he worked steadily on, with pistol in one hand carrying the runaway slave in his chaise to a place of safety; a member of the vigilance committee in 1846 and in 1850; working for the fugitive slave Latimer until his release was secured; a co-worker with Phillips and Garrison until the emancipation proclamation. When an escaped slave, Anthony Burns, was given up to his master (May, 1854), and taken in fetters down Court and State Streets with "an overwhelming force of soldiers," Dr. Bowditch dashed past the police on guard, through the cordon line, at the head of a procession of excited citizens, down to the wharf, where a devoted band of abolitionists stood in horror to see the United States cutter, bearing the returned slave, steam away. Vowing that that disgrace should never again happen to the soil of Massachusetts, they formed the anti-man-hunting league, at the instigation of Dr. Bowditch, who was its secretary. Less than a decade later he saw Colonel Shaw march down the same street at the head of his negro regiment; he lived to see slavery abolished, peace and industry established in the South, and himself honored with Phillips and Garrison, and loved by his Southern associates.

With the same qualities he conquered success in his chosen profession. He became admitting physician, 1838 to 1845, and later, visiting physician, 1846 to 1864, at the Massachusetts General Hospital, visiting physician at the Boston City Hospital, 1868 to 1871, consulting physician to the Massachusetts General, City, Carney and New England hospitals, professor of Clinical Medicine in the Harvard Medical School, 1859 to 1867, a member of the leading medical societies in Boston, president of the American Medical Association in 1876. He was a member of the American Academy of Arts and Sciences, of the Paris Obstetrical Society, of the Paris Society of Public Hygiene; and honorary member of the New York Academy of Medicine, of the Philadelphia College of Physicians, and of the New York, Rhode Island and Connecticut State Medical Societies.

When he was appointed admitting physician, negroes were not received as patients in the hospital. He offered a test case of pneumonia, resigned his position when his negro patient was not admitted, and carried his point, his resignation not being accepted.

After he became of the first eminence in his branch of the medical profession, and his reputation had extended throughout this country and Europe, he was still the man before the physician, and kept in close touch, through the Thursday Club and constant attendance on scientific and medical society meetings, with the spirit of progress in all branches of knowledge. Whatever interested humanity interested him. He gave his assistance freely to all movements to elevate mankind, regardless of race or creed. When his fame was at its zenith, probably even his own family did not learn when his quick eye of sympathy had seen so many ways to help that after a long day's work he had given away far more than the amount of his fees, so little did his right hand know what his left hand was doing. He gave himself freely and gladly with his gift.

To his professional associates he was an inspiration; to the younger men his unfailing kindness of heart and generosity gave strength and courage; the example of his life raised them to a higher plane of living. To one who had sought advice from many older physicians, and had heard how to get practice and fame and wealth, Dr. Bowditch's words were: "Never do anything which will make you think afterwards that you have been a sneak." Even before the surgeons, in 1850, he successfully operated for empyema; to one surgeon whom he considered one of the boldest, but not willing to open a perinephritic abscess, he proposed himself to push in the scalpel where the surgeon pointed out the proper spot. In sanitary science, too, he led the way. With the eloquence of sincerity, showing to a committee of the legislature his chart indicating the prevalence of pulmonary consumption in Massachusetts, he explained to them the law which he discovered, in 1862, of its relation to soil-moisture, and did much to persuade them to create the first State Board of Health in this country, an example which thirty States have followed. When the board was appointed, in 1869, Dr. Bowditch was easily first in the estimation of the medical profession and the community for the arduous and responsible duties of its president, a position which he retained, at great sacrifice of his time and professional income, until 1879. When the powerful interests attacked by the board in the cause of the public health resisted, and the politicians threatened, and other members of the board hesitated, he pushed on, ardent and impulsive until the point was gained. If his enthusiasm carried him too fast or too far, he was always ready to modify his course. If in his vehement indignation and scathing rebuke of anything which he considered mean or unworthy he had seemed to wrong any one, he was quick with generous redress. His simplicity and earnestness were so transparent that, as one of the members of the board said, there could be no real dissension in a board of which he was the chairman; and his sense of humor, love of fun, and quick intuition helped him out of many difficult places.

When the yellow fever epidemic of 1878 aroused the nation to the need of a National Board of Health, the chairmanship seemed the opportunity of Dr. Bowditch's life. No one else had the personal qualities and the reputation to fill the place. Unfortunately, the state of his health prevented his accepting it, or, indeed, of serving as a member of the board for more than a year; and there followed its melancholy wreck, which so many thought that he, if he had been chairman, might have averted.

He was one of the earliest advocates of specialties in medicine in this country, freely asking the advice of men much younger than himself, and treating with respect the sincere opinions of the least experienced if given, as he gave his opinions, without assumption. He was one of the first to believe in women as physicians, and thought it but justice to them, as well as good policy for the community, to give to them the same advantages of study as to men.

More than 90,000 manuscript pages of records of cases of private patients, ten printed papers and sixty-six pamphlets printed in twenty-nine journals or society transactions, with numberless short articles on various subjects, attest the industry of his life. His letters and notes and diaries are full of his work with scarcely a mention of his honors.

His epoch-making work in medicine was his thoracentesis, his first operation with the Wyman aspirator having been done in 1850, some time after Dr. Morrill Wyman's "brilliant operation." But his greatest title to honor from his professional associates was his character. An earnest searcher after truth, he stimulated and encouraged good work in others. Honest, fearless, outspoken, he made friends of his enemies by the simplicity, purity, sincerity, and unselfishness of his purpose. He compelled an admiration of the right and a hatred of wrong.

At the meetings of the American Medical Association, at which he was constant in attendance so long as his health permitted, men from Maine to California caught the spirit of his enthusiasm, they felt the stimulus of his eager search for the truth, they were so filled with admiration of his noble life that they went back to their work with a higher sense of personal duty and professional obligation.

During our civil war Dr. Bowditch was an untiring worker in numberless ways. He was enrolling-surgeon, and to him more than to any other single individual was due the persistent effort by which Congress passed the law creating an efficient ambulance service in the army. The ardor of the patriot accepted the loss of the son bearing his grandfather's name, killed while leading a squadron of cavalry at Kelly's Ford; but to the father's love it was a life-long grief, how deep few only could know.

Dr. Bowditch's home-life was ideal, "I think of his home as more filled with love than any other home I ever knew," writes one of his friends. In one respect Dr. Bowditch possessed a remarkably judicial mind: in that he clearly recognized his own defects. Indeed, he was not only always modest and free from assumption, but he was his own severest critic even where others saw only cause for praise. When he erred in judgment, he did so from spontaneous self-forgetfulness born of a righteous impulse. In the days of chivalry he would have been the knight without fear and without reproach.

Some of his more important medical publications are:

The young stethoscopist; or, the student's aid to auscultation. 1848.
On pleuritic effusions, and the necessity of paracentesis for their removal. 1851.
On paracentesis thoracis, with an analysis of cases. 1852.
On paracentesis thoracis. An analysis of twenty-five cases of pleuritic effusion in which this operation was performed. 1853.
On paracentesis thoracis. 1857.
Paracentesis thoracis: a *résumé* of twelve years' experience. 1863.
Thoracentesis, and its general results during twenty years of professional life. 1870.
Two fatal cases of pleuritic effusion. Would not thoracentesis have saved life? European and American treatment of pleurisy. 1882.
Topographical distribution and local origin of consumption in Massachusetts. 1862.
Consumption in New England; or, locality one of its chief causes. 1862.
Is consumption ever contagious, or communicated by one person to another in any manner? 1864.
Consumption in New England and elsewhere; or, soil-moisture one of its chief causes. 1868.
Consumption in America. 1869.
Open-air travel as a curer and preventer of consumption, as seen in the history of a New England family. 1889.
Report of the committee on climatology and epidemics in Massachusetts, 1868–69. 1869.
Preventive medicine and the physician of the future. 1874.
Annual address in state medicine and public hygiene. 1875.
Address on hygiene and preventive medicine. 1876.
Public hygiene in America. 1876.
Sanitary organization of nations. 1880.
Yellow fever epidemic: what should be done? Imperative need of a national sanitary board. 1888.
An apology for the medical profession as a means of developing the whole nature of man. 1863.
Letter from the Chairman of the State Board of Health concerning houses for the people, convalescent homes, and the sewage question. 1870.
The medical education of women. The present hostile position of Harvard University and of the Massachusetts Medical Society. What remedies therefor can be suggested? 1881.
Intemperance in New England. How shall we treat it? 1872.
Intemperance, as governed by cosmic and social law. How can we become a temperate people? 1872.
Inebriate asylums, or hospitals. 1875.
Abuse of army ambulances. 1862.
A brief plea for an ambulance system for the army of the United States. 1863.
The past, present, and future treatment of homœopathy, eclecticism and kindred delusions which may hereafter arise in the medical profession, as viewed from the stand-

points of the history of medicine and of personal experience. 1887.

Louis (P. C. A.). Pathological researches on phthisis. Translated from the French, with introduction, notes, additions and an essay on treatment. By Ch. Cowan. Revised and altered by H. I. Bowditch. 1836.

Louis (P. C. A.). Memoirs on the proper method of examining a patient and arriving at facts of a general nature. From the French, by H. I. Bowditch. 1838.

Brief memoir of Louis and some of his contemporaries in the Parisian school of medicine of forty years ago. 1872.

THE TREATMENT OF INFLUENZA.

In the prophylaxis of influenza it must be remembered that the disease is a something (germ or other morbific factor) plus, not infrequently, a severe cold. A catarrh or cold is a mechanical congestion of the naso-pharyngeal mucous membrane due to exposure to alternating temperatures, not necessarily accompanied by fever or any constitutional disturbance. This congested mucous súrface furnishes a favorable nidus for the influenza germ as well as for the germs of ordinary suppuration. The germs or their ptomaines find entrance into the blood and produce the rigors and other constitutional symptoms. The main prophylactic indication, then, would be to avoid, as far as possible, the causes of ordinary colds. When once the congestion is established, means should be taken to prevent this extending, and to destroy any germs that have effected lodgment on the congested membrane. Here the use of diaphoretics (a warm bath, a vapor bath, heaters, liquor ammoniæ acetatis, jaborandi, Dover's powder — the patient being in bed), may be salutary; the symptoms of prostration are to be treated by abundant stimulants. The menthol spray, or eucalyptus inhalations, stimulate the local circulation, and are perhaps germicides. The eucalyptus may be inhaled from a handkerchief, and a two to five per cent. of menthol in some form of liquid vaseline be injected into the nostrils in chronic catarrh.

There is no special treatment for the bronchitis of influenza. The acuteness of the attack, the oppression, the teasing, dry cough, the scanty expectoration of the first stage, indicate the need of expectorants and salines, whilst the prostration indicates the disadvantage of their administration. Ten drops of wine of ipecac, one drop of tincture of aconite, five grains of nitrate of potash in a dessert spoonful of liquor ammoniæ acetatis, constitute a convenient mixture for this stage of the disease; the dose may be given every two hours during both day and night, or the tincture of lobelia inflata in five-minim doses may be substituted for the ipecacuanha wine. Citrate of potash in thirty-grain doses with lemon juice and syrup is a favorite combination, making a mixture which is very pleasant to take. No one will question the beneficial effects of hot fomentations and cataplasms to the chest, especially when there is pain and dyspnœa. The old custom of giving an emetic at the onset of a severe bronchial attack has gone out of fashion, still there are times when nothing will so speedily relax the tightened bronchi, allay the element of spasm and promote expectoration, as a full dose of ipecac or turpeth mineral. The latter emetic is especially applicable to children with abundance of sub-crepitant râles all over the chest, dyspnœa, and other symptoms of capillary bronchitis.

When expectoration has begun, and in influenza it sometimes does not begin at all, there is probably no better expectorant than carbonate or muriate of ammonia. The latter, if rubbed up with extract of licorice and taken in emulsion, in water or in syrup, is not especially disagreeable to the taste. The aromatic spirits of ammonia may be given in syrup of tolu or syrup of senega, and often no other expectorant will be needed. Marotte has recently published a paper in which he recommends, in order to oppose the pulmonary manifestations of *la grippe*, the employment of chloride of ammonium in doses amounting to two or three grammes daily. He would give the salt in capsules or cachets, the dose being fifty centigrammes.[1]

As the adynamic symptoms are always marked, a supporting treatment should be instituted from the first, and alcoholic stimulants are frequently indicated. A tablespoonful of whiskey in a glass of milk is a favorite combination with many. Or the milk is given in teacupfuls every two hours, and is alternated with a glass of grog or champagne. The alcohol often seems materially to aid expectoration besides combating restlessness and insomnia. It is especially in broncho-pulmonary cases complicated with weak heart and pulse that alcohol is a necessity. Physicians doubtless do not sufficiently utilize the stimulating and supporting effects of strong coffee, which may often be allowed to advantage in influenza *ad libitum.*

Where the cardiac enfeeblement is very marked, there can be no question as to the benefits of digitalis, strophanthus, caffeine, and sometimes of nitro-glycerine. In the pneumonia and broncho-pneumonia of influenza, the leading indication is often to support the struggling heart, and digitalis may be given here with often happy effects. An eligible form is the infusion, of which a teaspoonful may be given every two hours for a day or two, then strophanthus or caffeine may be substituted for the digitalis.

Many practitioners have great faith in sulphate of quinine, both as an abortive means in the early stages (abridging duration of the attack), and as a supporting agent all through the sickness. By general consent, however, quinine has of late been relegated to a secondary and subordinate place in the therapeutics of this and other affections, being given in rather small doses and for its tonic effect.

For the nervous symptoms of influenza, — the headache, the backache, the pains in the limbs, the restlessness and insomnia, etc., there seems to be nothing so good as acetanilid or phenacetin, and no medicines are more generally prescribed. Just how these medicines act is not yet known, but they certainly have a marked action in allaying the rheumatoid and neuralgic pains of influenza, and, they also combat the fever-element and relieve the insomnia. A recent writer in the *Lancet* even affirms that acetanilid is curative of the bronchitis, destroying the micro organisms that pervade the mucous membrane and the sputum; and that he has found it to cause the cough to disappear. Other practitioners may not have seen the same results, but there is abundant testimony that phenacetin or acetanilid are invaluable and safe medicaments in influenza. The former may be given in ten and the latter in five grain doses every two hours until the muscular or neuralgic pains cease; two or three doses generally prove sufficient. Some prefer to give stimulant with these drugs, as it hastens their action and counteracts any depressing effects. When the muscular pains are obstinate, salol, five grains, or salicylate of soda, fifteen grains, have been recommended.

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[1] Bull. et Mem. de l'Académie de Médecine, June 16, 1891.

A capital point in the treatment is to watch the patient, that he be not allowed to go out too soon, for cases are not rare where, after a light attack, exposure to cold has been followed by fatal pneumonia.

We can but just allude to Maclagan's treatment of influenza by salicine in large doses. This writer reports a series of cases which, he claims, go to show that salicine in doses of twenty grains every hour for five or six hours, then every two hours for a day "arrests the course of the disease as effectually as it does that of acute rheumatism when given in the same manner." In all his reported cases the cure was rapid, "the temperature falling to the normal, and convalescence commencing in all within twenty-four and in most within twelve hours of the commencement of the treatment."

BOMB-THROWING AND RESPONSIBILITY.

At a meeting of the New York Society of Medical Jurisprudence and State Medicine, held January 10th, Dr. N. E. Brill, the President-elect, delivered his inaugural address, taking as a subject: "Some Medico-Legal Reflections on Bomb-Throwing and Responsibility." As a safeguard against bomb-throwing and dynamite terrors, Dr. Brill advised a more stringent regulation of the manufacture and sale of explosives, and a restriction of the dissemination of pamphlets instructing the public how to make explosives. In the course of his remarks he urged the abolition of the "Anti-Kidnapping Society," through whose efforts he believed that a number of insane persons had been set at large. The title of this society, he said, was an insult to the medical profession, its members claiming that physicians were corrupt and open to bribes, and that they had sent patients to the insane asylum who were not lunatics. Such a society might, perhaps, have been a desirable organization in the Dark Ages, but its existence in the 19th century was an insult to the people and to the Government. He recommended that the form of committing the insane by magistrates to County or State asylums be taken away, and that all the insane arrested for a felony should be indicted by a grand and go through the usual course of trial before a petit jury. If, at this trial, it should be proved that they were insane, they should be sent to the State Asylum for Insane Criminals. In the direction of reform he also recommended the transferring of the county asylums of New York and Kings Counties to the control of the State. It is doubtless true that for every sane man whose freedom is improperly or injudiciously interfered with, many lunatics are allowed to remain abroad who should be under restraint.

Incidently Dr. Brill defended the electrical execution law, considering this the most humane method of execution yet devised. His conclusions, he said, were based upon his personal critical supervision of the recent execution of the murderer Loppy at Sing Sing prison, at which he acted as the representative of the Society of Medical Jurisprudence. It was his belief that the death was instantaneous and practically without any painful sensation to the criminal. The electric chair, however, was not yet perfect, and he advised that a special dynamo should be constructed for the infliction of the death penalty with a power of 2,500 volts.

MEDICAL NOTES.

Prize for an Essay on Tuberculosis. — The Paris Société de Médecine offers a prize of 1,500 francs together with a gold medal, to the author of the best essay on tuberculosis before the end of 1892.

The Crew of the Baltimore. — At the recent investigation of the attack on the *Baltimore's* crew in Chili, the naval surgeons testified that two of the sailors were killed, five seriously wounded and twelve received slighter wounds. The death of Turnbull was caused by neglect and bad treatment in the hospital where he was carried by the police. His death was due to septicæmia.

Suicide among Physicians. — The Chicago *Tribune* notes as an interesting fact, not only that physicians headed the list of suicides last year, but that they have headed it every year in the last ten. This promises to be still more conspicuous this year, as in the first twelve days of the present month no less than seven physicians have committed suicide in the United States.

Failure of an Ostrich's Digestion. — The death of a well-known ostrich belonging to a circus is reported from Cincinnati as having been due to influenza. At the post-mortem a diamond pin, of the value of $800, was found pinned in his stomach. The pin had been picked last summer from a gentleman's shirt front in Montreal.

Horse-Flesh for Food. — The United States Bureau of Animal Industry has discovered that horse-flesh in large quantity is being shipped to Europe from a place on Long Island, N. Y. Some of it is supposed to pass there as beef, and part of it is used for making sausages, which are then sent back to this country.

New Health Department in London. — The act of Parliament establishing a public health department for the city of London went into force the first of the year. This is the first time that a city has had a department attending solely to matters of health.

Post-Mortem Conviction. — According to the *Medical Press*, a French soldier, finding himself accused of having stolen some gold coins, swallowed them. He escaped conviction, but shortly afterwards became sick and died from acute indigestion. At the autopsy, twenty-one coins were found in his stomach.

The Spread of Small-pox in Canada. — Surgeon Spencer C. Devan, of the Marine-Hospital Service, having been sent to Canada to investigate the recent epidemic of small-pox, has submitted a very interesting account of his investigation to the Marine Hospital Bureau. The disease is believed to have been brought into Quebec by the steamship *Brazillian*, last June. On her way to Montreal she stopped at Quebec for four hours. She had had several cases of small-pox on her voyage from London. On the 1st of August, a patient who had been in the hospital in Quebec for more than eight months was found to have small-pox, probably brought to the hospital from the steamer by a seaman. Both of the nurses who had attended this seaman contracted small-pox, one of them was taken to her home and gave the disease to a nurse-girl named Bujold. The girl, as soon as the eruption appeared, started for her home in Carleton. In order to get there she had to go by rail for some distance and the remaining part of her journey by steamboat. A large part of the small-pox epidemic appears to be directly due to this journey. Being alone and sick, a number of persons both on the train and the steamboat offered her assistance and from her contracted small-pox which was carried into their native towns. One family returning, after an absence of two years, sat with this girl in the train for some time. When they arrived at their destination, they were given a reception by their friends and relations, and succeeded in spreading the disease pretty thoroughly in that town. Investigating the different outbreaks, a direct clue was found in several instances showing that the infection came originally from the girl Bujold.

NEW ENGLAND.

Mortality of Boston for the Week. — During the past week fourteen deaths were recorded as being due to influenza alone, and thirty as indirectly due to it. The total number of deaths was 286, making the death-rate for the week 32.3. Of this number deaths due to diphtheria were 9, scarlatina 5, consumption 26, pneumonia 74, heart disease 21, and bronchitis 31. The number of persons who died over sixty years of age was 92.

Boston Nurses' Club. — A Nurses' Club has been recently organized in connection with the Training-school for Nurses at the Boston City Hospital. At the meeting for organization, Dr. G. H. M. Rowe, Superintendent of the Hospital, stated that the aim of the club is to give a wider intelligence in the practice and ethics of nursing; a better knowledge of the three departments of hospital, private and district nursing; the stimulus that results from interchange of opinion and experience; the promotion of social acquaintance and an *esprit de corps* between the past and the present members of the school.

Recent Appointments. — At the last meeting of the Board of Overseers of Harvard College, the following appointments were confirmed: George Wells Fitz, M.D., instructor in physiology and hygiene for 1892–93. Henry Fiske Leonard, M.D., M.D.V., instructor in anatomy in the Veterinary School for the remainder of the year 1891–92. Kenelm Winslow, M.D.V., M.D., assistant professor of veterinary therapeutics for five years from September 1, 1892.

Hotel-Keepers must sell Pure Milk. — By a recent decision of the Supreme Court of Massachusetts, the selling of impure milk by hotel-keepers is punishable under the same statute which applies to milk dealers in general.

NEW YORK.

The New York Training-school for Nurses. — The nineteenth commencement of the New York Training-school for Nurses attached to Bellevue Hospital was held on January 12th, when a class of thirty was graduated. The report of the Secretary gave the annual statistics of the institution, and stated that during the year the Edith Summer Home for the relief of the hard-working nurses had been opened, and also that four rooms had been built over the Marquand pavilion, at Bellevue, for the special use of nurses who were taken ill while on duty. The address to the graduates was delivered by Dr. Frederic S. Dennis.

Mortality for the Week. — During the week ending January 9th, the total number of deaths reported in the city was 972, and the number of deaths from influenza and complications, 89. This is the largest mortality reached during the present rather mild epidemic, and since then there has been a considerable reduction in the number of deaths.

The Adirondack Park. — The annual report of the State Board Commissioners just presented to the Legislature, shows that there has been an increase of about 15,000 acres in the extent of the Adirondack preserves during the year, partly under the provisions of the act of 1890, appropriating $25,000 for the purchase of land at not more than $1.50 per acre. If a further appropriation is made about 50,000 acres additional can at once be purchased at the same rate. The report speaks at length of the legislation necessary for the proposed establishment of a State Adirondack Park, and states that there is a universal demand for this park by the press and people of the State. The original idea called for forest preservation, with reference only to protecting the head-waters of the rivers, and to providing a future economical and perpetual timber supply; but lately the acquisition of this territory has been urgently demanded by the medical profession and the public for the purposes of a health and pleasure resort.

The State Board of Medical Examiners met at Albany on January 15th, and seventeen out of the twenty-one members composing it were present. Since the new medical law went into effect, September 1st, 1891, nineteen persons have applied for licenses to practice medicine in the State, two-thirds of whom were graduates of foreign universities. Eight persons have presented themselves for examination, and of these seven passed. The second examination of candidates for license to practice will be held in the cities of New York, Albany, Syracuse and Buffalo, on January 26, 27, 28 and 29.

Insanity in the State. — The annual report of the State Commissioners in Lunacy, which is now in course of preparation, shows that during the year ending October 1, 1891, 827 insane patients were transferred from county institutions to the State hospitals. This leaves 1,215 insane still in the county institutions of those counties not exempt from the provisions of the State Care Act; but within a few months it is expected that they will all be transferred to the State hospitals, as the construction of the necessary new buildings at the different hospitals will have been completed by the 1st of October, 1892. During the year there was an increase of 345 in the total number of insane patients.

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Miscellany.

MENTAL SYMPTOMS AFTER SURGICAL OPERATIONS.

Kiernan cites a formidable list of authorities from Ambrose Paré to Horatio Wood, showing a profound nervous effect produced by operation.[1] He has found 186 cases of profound mental change following operation; 35 cases after operation for cataract; 65 following gynecological operations, and the remainder resulting from plastic operations, amputations, manipulations, etc. In 15 cases there was larvated epilepsy precedent to to the operation; in 10 hysteria major was present; in 30 cases a neurotic element existed; in 35 cases the patients have arrived at periods of involution when instability of the nervous system usually results. In 10 cases only was the influence of blood-poisoning demonstrated.

The acute types of mental affection following operation are aptly designated as "acute confusional insanity." In the larvated epileptic cases, the neurotic, and the hysterical, the prognosis is good. In some of the cases occurring at periods of involution senile degenerations are precipitated. The majority of blood-poisoning cases died. Typho-mania is sometimes observed.

The moral treatment of the patient precedent to the operation is the best prophylaxis. If to the dread of the operation be added dread of the operator the nervous perturbation will necessarily be far greater. Sedatives and other measures tending to calm agitation are necessary. Quinine is strongly indicated. Opium and not chloral hydrate or the bromides will, as a rule, be found a most valuable aid in most of the cases. In many of the hysterical cases salix nigra and monobromate of camphor give good results.

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INFANTILE ATAVISM.

Dr. Louis Robinson,[1] taking advantage of the material furnished by the maternity ward of an English work-house, has studied certain peculiarities of new-born babies, which he thinks may, by the theory of evolution, throw light upon the origin of the human race. As the young of certain anthropoids are obliged to cling to their mothers or to trees, he tested the clinging power of young infants, and found that they all had a very endurable grasping power, and that the strongest were able to hang by their hands and support their whole weight for over two minutes and a half. The author considers that the amount of strength in the flexors of the hand and fingers in newly-born children is best explained by its being a survival from the tree-climbing period of man's history. The effort made by infants to curl their toes over anything, he ascribes to the same origin. Another point is the flexed state of the thighs. Other animals, although twisted and cramped in the egg or the uterus, adopt the position of adults as soon as they are born, whereas the thighs of young infants seem to assume the position existing in apes.

As a criticism of the theory that the disproportionate size of the anterior half of the body of the human fœtus is due to better nourishment by the fœtal circulation, he calls attention to the large hind quarters of new-born quadrupeds. A suggestion is made that the axillary and pubic hair in the adult human being, may be partly accounted for as the remnants of handles, to which our four-handed ancestors clung in their infancy.

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THE MEDICAL DEPARTMENT OF THE ARMY.

A circular of information has been issued by the Surgeon-General for medical men who may be desirous of entering the United States Army Medical Department.

The medical department of the army consists of one surgeon-general with the rank of brigadier-general; one assistant surgeon-general, one chief medical purveyor and four surgeons with the rank of colonel; two assistant medical purveyors and eight surgeons with the rank of lieutenant-colonel; fifty surgeons with the rank of major; and one hundred and twenty-five assistant surgeons with the rank of first lieutenant of cavalry for the first five years of service, and of captain of cavalry subsequently until their promotion by seniority to a majority.

With the rank stated in each case the pay and emoluments of the rank are associated. For the first five years the medical officer receives $1,600 per year. He then receives $2,200 a year, which increases with length of service and promotion. Compulsory retirement at the age of sixty-four years increases the rapidity of promotion to the younger men; and when retirement is effected either by age, or by the accidents of service prior to reaching the retiring age, the rate of pay subsequently drawn is seventy-five per cent. of the total salary and increases of the rank held by the individual at the time of his retirement. The medical officer has the right of selecting quarters in accordance with his rank. The authorized leave of absence amounts to thirty days annually. This leave is not forfeited if not taken during the year.

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[1] American Journal of Medical Sciences, December.

[1] British Medical Journal, December 5, 1891.

A commission in the Medical Department of the Army is an instrument which is good for life, premising conduct consistent with its retention on the part of its possessor; but it involves no contract which binds the individual to service for any given number of years.

A young medical officer on appointment is usually assigned to duty for a few months at some large post. After this he goes to some post west of the Mississippi river, where he serves a tour of duty of four years. An assignment in the east follows the leave of absence which is usually taken at this time; and in after years his stations are selected so as to give him a fair share of service at what may be called desirable posts as an offset to the time spent at less desirable stations.

Instructions for candidates for the service will be found on page 720 of the Journal of December 31st.

An Army Board meets every few months for the examination of candidates, who must be between twenty-one and twenty-eight years of age (without any exceptions), and graduates of a regular medical college, evidence of which, the diploma, must be submitted to the Board. The physical examination is rigid; and each candidate is required to certify "that he labors under no mental or physical infirmity, nor disability of any kind, which can in any way interfere with the most efficient discharge of any duty which may be required." Oral and written examinations on subjects of preliminary education, general literature, and general science are required as well as on different medical subjects. Clinical examinations, medical and surgical, at a hospital, and the performance of surgical operations on the cadaver form a part of the examination. An applicant failing in one examination may be allowed a second after one year, but not a third.

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DR. BUCKMINSTER BROWN.

At a meeting of the Boston Society for Medical Improvement, held January 11, the following action was taken, on motion of Dr. Francis Minot:

> In taking official notice of the death of Dr. Buckminster Brown, the Society desires to record its high estimation of his personal character and professional eminence, and its regret at the loss of one of its oldest and most respected members.
>
> Although compelled by ill-health from his youth to lead a life of extreme care and regularity, and unable to undergo the fatigues of general practice, Dr. Brown succeeded by his industry and perseverance in attaining a large practice in orthopedic surgery, of which he became one of the most distinguished representatives, both in this country and abroad.
>
> The Society respectfully offers its sincere sympathy to the family of Dr. Brown in the affliction which they have sustained by his loss.

Dr. E. H. Bradford being unavoidably absent, the following was read for him by Dr. E. G. Brackett:

> To Dr. Buckminster Brown belongs the credit of having introduced into this country the best of the English school of orthopedic surgery (at that time the leading and most active school), and of having placed this specialty in America on a most excellent foundation. But he was in no true sense a follower, as his mind worked independently; in many of his methods he was bolder than many of his English compeers; and in thoroughness and persistency he equalled and surpassed his teachers.
>
> Conservative by nature, too scholarly and well trained to accept without cautious reserve brilliantly announced cures and speedily successful procedures in the treatment of affections essentially chronic, he relied chiefly upon the painstaking measures which aid and cure through daily attention. Although he relied chiefly upon appliances in the treatment of deformity, he had the instincts of a surgeon and believed in operative methods wherever it was proved that operation was beneficial. He, by no means belonged to the more timid school of orthopedic surgery, which shuns operation, though his experience was chiefly limited to non-operative procedures. The methods which he worked in, have, in the progress of surgery, in some instances been superseded; but his work in club-foot, in tenotomy, in infantile paralysis, in correction of right-angled contraction at the hip and knee-joint, and especially in the cure of congenital dislocation, by long-continued traction and manipulation, will always be of value in orthopedic surgery.
>
> His tastes were essentially scientific in the best sense, and his work is characterized by a tenacity of purpose and a persistency not to be surpassed; and to whomsoever he was bound by the contract of professional duty he gave his whole attention and ability with untiring zeal, and that in spite of obstacles in the lack of physical vigor which none could appreciate who did not know him. He husbanded his resources carefully and spent them lavishly in his work.
>
> Besides his achievements he left as a legacy to his successors an example of loyalty to purpose, unremittent persistency, and a courage always superior to the obstacles and limitations surrounding his life.

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THERAPEUTIC NOTES.

Warm Ether. — Dr. Partagás, of Barcelona, has introduced an apparatus for keeping ether at a temperature of eighty-eight degrees during its administration. He claims that anæsthesia produced by warm ether is much more satisfactory and may be continued for a longer time than by the cold vapor.

Tincture of Iodine.[1] — A good plan to prevent the spilling of iodine solutions is to fill the bottle with absorbent cotton, pouring in the solution to complete saturation and emptying all superfluous liquid. Enough remains to saturate any brush, etc., that may be thrust into the bottle, yet the bottle may be carried about without any risk of leakage or spilling.

Antiseptin.[2] — Radlauer considers antiseptin, introduced by him into therapeutic use as a chemical combination, and denominates it the iodo-borothymolate of zinc. But analysis of this substance by F. Goldmann shows that it is not a definite chemical compound, but only a mixture of iodide of zinc, thymol, boric acid, and sulphate of zinc. The proportions are as follows:

℞	Zinci sulphatis	85 parts
	Zinci iodidi Thymolis	āā 2½ parts
	Acidi borici	10 parts M.

Methyl Blue for Neuralgia. — Immerwahr[3] has tested the action of methyl blue in different forms of neuralgia. No unpleasant effects have been observed. The substance is given in doses of from one and a half to three grains, three times a day. The results were good in case of trigeminal neuralgia, also in nervous headache and depression from alcohol. In two cases of herpes zoster the great pain was much relieved.

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[1] Medical Press.
[2] Satellite, January.
[3] Deutsche med. Woch., No. 41 1891.

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Correspondence.

THE BI-CHLORIDE OF GOLD FRAUD.

Boston, January 19, 1892.

Mr. Editor: — Not far from a century ago the civilized world was ringing with the praises of "Perkinism." The story is old and oft-repeated, but will bear a brief retrospect.

Elisha Perkins, then living in Connecticut, had introduced to public notice his "tractors" or "pullers-out-of-disease," with which he cured many cases of rheumatism, gout, and disorders of the nervous system, by the application of these tractors to the body. The apparatus consisted of two pieces of metal (brass and steel) highly polished, to appear like gold and silver. They were made in a small village near New Haven at a cost of twelve and a half cents a pair, and were sold by Perkins for twenty-five dollars. Perkinism spread rapidly, and soon made its appearance in England, where a Perkinian Institute was founded, and reports of 5,000 cases were published. Certificates were obtained from the highest sources, and Perkins soon found himself the possessor of a fortune.

The Archbishop of Canterbury was implored to compose a new prayer, to be used in all the churches, that no evil powers might be allowed to impede the magic workings of the inestimable gift of Perkins.

Fessenden celebrated the discovery in the following rhyme:

> "See pointed metals blest with power to appease
> The ruthless rage of merciless disease;
> O'er the weak part a subtle fluid pour,
> Drenched with invisible galvanic power,
> Till the palsied, staff and crutch forego,
> And leap exulting, like the bounding roe."[1]

The exposure of the Perkins fraud was the work of two physicians, who substituted two bits of painted wood, made to resemble the metallic tractors. With these they wrought many marvellous cures, and published a volume of reports upon them. When the true character of these substitute tractors became known, Perkinism was no more.

About twenty years ago several "opium-cures" made their appearance, some of which were also proclaimed as remedies for the alcohol habit. The proprietor of one of these nostrums was arrested for alleged complicity in the Robinson poisoning cases at Somerville; another was a vendor of obscene literature in Chicago; still another was the notorious proprietor of the "Scotch Oats Essence," — a preparation which immediately died a natural death as soon as its true character was made known.

All these articles contained opium or morphia in some form as their active ingredient, and depended for their success upon the fact that the purchasers, instead of being patients, as they innocently believed themselves to be, soon became the victims of the rascals who advertised these nostrums, and thus succeeded in getting the deluded victims into their net. It was a modern version of the old fable, "Will you come into my parlor, said the spider to the fly?"

Then came the "double chloride of gold cure," as it was at first named, as fraudulent as all the rest of the tribe, in that it contained no gold whatever. As the chemist who analyzed the samples for the State Board of Health said, "It gave no reaction for the presence of even a trace of gold therein." With this fact in view, the motive for calling it a "gold-cure" becomes sufficiently evident.

The fraudulent character of these articles was first shown up by the Cumberland County Medical Society of Maine, and again by the Middlesex East Medical Society of Massachusetts, and still later by the State Board of Health of Massachusetts in its report for 1885, in which it was stated that twenty different "cures" for the opium and alcohol habits were examined by the chemist of the Board, and all were found to be of a fraudulent character.

The "cure" of a confirmed inebriate requires something more than drugging, either by the stomach or by hypodermic injection, or otherwise. The report of the State Board of Health, already referred to, says on this subject, "A cure must of necessity combine a treatment which deals with the entire physical and moral nature of the sufferer, and must be more thorough and far-reaching than any mere system of therapeutic drugging can possibly accomplish."

All of these parties publish long lists of endorsements from statesmen, clergymen, lawyers, physicians and business men. As a sufficient comment upon this fact, the history of all patent nostrums shows that the obtaining of endorsements is a very easy matter. As a matter of fact, there is also abundant evidence that in many cases the endorsements were fraudulently obtained.

When some bright young medical man shall slyly substitute a harmless placebo, in place of the usual "bi-chloride" treatment, and "cure" his patients with the substitute as successfully as Keeley professes to have done, the bi-chloride castle of this century will tumble to the ground, like the Perkinism of 1796, and be known only as a thing of the past.

Very truly yours,
S. W. Abbott, M.D.

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[1] Dr. J. C. Peters, article on "Thompsonianism" in Wood's Reference Handbook of the Medical Sciences, Vol. VII.

RECORD OF MORTALITY

For the Week ending Saturday, January 2, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	969	322	13.18	30.29	4.42	.91	6.50
Chicago	1,099,850	576	236	19.38	19.38	2.21	7.69	5 61
Philadelphia	1,046,964	718	207	13.16	24.92	1.96	.56	9.10
Brooklyn	806,343	470	125	10.92	27.51	2.31	.21	6.72
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,477	318	64	5.89	35.96	1.55	.31	3.41
Baltimore	434,439	310	89	8.96	20.16	4.16	.64	2.88
Cincinnati	296,908	204	53	9.80	14 70	1.47	.49	6.37
Cleveland	262,000	70	22	22.88	12.87	1.43	1.43	15.73
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	104	42	20.16	11.52	—	4.80	15.36
Milwaukee	240,000	89	41	32.48	10.08	2.24	4.48	20.28
Washington	230,392	133	29	4.50	30.75	—	.75	1.50
Nashville	76,168	36	8	8.31	19.56	—	—	—
Charleston	65,165	42	17	2.38	4.76	—	—	—
Portland	36,425	20	5	—	35.00	—	—	—
Worcester	84,655	55	20	10.92	25.48	1.82	—	5.46
Lowell	77,696	63	14	4.71	20.41	—	—	1.57
Fall River	74,398	48	19	10.41	20.83	—	4.16	2.08
Cambridge	70,028	45	10	4.44	28.86	—	—	2.22
Lynn	55,727	—	—	—	—	—	—	—
Lawrence	44,654	53	14	18.86	18.86	7.56	1.89	7.56
Springfield	44,179	41	9	7.32	41.48	—	—	7.32
New Bedford	40,733	34	9	2.94	17.64	—	—	2.94
Salem	30,801	19	2	5.26	15.78	5.26	—	—
Chelsea	27,909	28	8	7.14	17.85	—	—	7.14
Haverhill	27,412	30	6	6.66	10.00	—	—	6.66
Taunton	25,445	17	4	—	11.76	—	—	—
Gloucester	24,651	6	1	—	33.33	—	—	—
Newton	24,379	14	—	7.14	21.42	—	—	7.14
Malden	23,031	12	2	—	25.00	—	—	—
Fitchburg	22,037	14	4	—	—	—	—	—
Waltham	18,707	6	1	—	50.00	—	—	—
Pittsfield	17,281	6	3	—	33.33	—	—	—
Quincy	16,723	8	0	—	37.50	—	—	—
Newburyport	13,947	13	0	—	30.76	—	—	—
Medford	11,079	6	2	—	50.00	—	—	—
Clinton	10,424	—	—	—	—	—	—	—
Hyde Park	10,193	9	2	11.11	44.44	—	—	11.11
Peabody	10,158	2	0	—	—	—	—	—

Deaths reported 4,578: under five years of age 1,388; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 569, acute lung diseases 1,057, consumption 388, influenza 302, diphtheria and croup 282, scarlet fever 102, typhoid fever 77, diarrhœal diseases 47, measles 21, whooping-cough 14, cerebro-spinal meningitis 13, erysipelas 6, malarial fever 6.

From diarrhœal diseases New York 13, Chicago 12, Philadelphia 5, Cincinnati 3, Baltimore, Milwaukee, Nashville and Lowell 1 each. From measles New York 13, Philadelphia and Brooklyn 2 each, Chicago, Baltimore, Milwaukee and Fall River 1 each. From whooping-cough New York 4, Philadelphia 3, Cleveland 2, Chicago, Boston, Baltimore, Milwaukee and Fall River 1 each. From cerebro-spinal meningitis Chicago 6, New York, Washington and Worcester 2 each, Nashville 1. From erysipelas New York 4, Chicago and Brooklyn 1 each. From malarial fever Brooklyn 3, New York, Philadephia and Charleston 1 each.

METEOROLOGICAL RECORD,

For the week ending January 2, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...27	29.94	36	38	33	49	62	56	W.	W.	20	8	C.	O.	.03
M..28	30.32	32	36	27	61	51	56	N.W.	N.E.	8	7	C.	C.	
T..29	30.20	35	47	29	72	86	79	S.E.	S.	15	30	O.	R.	.01
W. 30	29.73	39	45	32	96	46	71	N.W.	N.W.	16	36	R.	C.	t.21
T ..31	30.44	24	32	17	47	32	40	N.W.	N.W.	19	18	C.	O.	
F .. 1	30.34	33	41	25	35	51	41	N.W.	S.	4	9	C.	C.	
S.. 2	29.73	44	55	33	79	96	88	S.	S.E.	13	39	O.	R	.73
☞	30.10	35	42	28	62	61	62			14	12			.28

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 9, 1892, TO JANUARY 15, 1892.

Captain Henry S. Kilbourne, assistant surgeon, U. S. A., is relieved from duty at Willet's Point, N. Y., and will report in person to the Supt. U. S. Military Academy, West Point, N. Y., for duty at that station, relieving **Captain W. Fitzhugh Carter**, assistant surgeon, U. S. A. Captain Carter, upon being relieved by Captain Kilbourne, will report in person to the commanding officer, Willet's Point, N. Y., for duty at that station.

Major Julius Patzki, surgeon, having been found by Army Retiring Board incapacitated for active service on account of disability incident to the service, is by direction of the President, retired from active service, to take effect January 19, 1892, under provisions of Section 1251, Revised Statutes.

Leave of absence for one month, is granted **Captain Walter W. R. Fisher**, assistant surgeon, U. S. A.

Captain Marshall W. Wood, assistant surgeon, U. S. A., now on leave of absence, will report to the commanding officer Fort Columbus, N. Y., for temporary duty at that post during the absence of **Captain W. W. R. Fisher**, assistant surgeon, U. S. Army.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 16, 1892.

J. Parker, surgeon, ordered to the U. S. S. "Charleston."

C. H. White, medical inspector, detached from U. S. S. "Charleston" and ordered home.

George A. Lung, assistant surgeon, ordered to examination for promotion.

Patrick H. Bryant, assistant surgeon, ordered to examination for promotion.

Luther L. Von Wedekind, assistant surgeon, ordered to examination for promotion.

THE INTERNATIONAL EXECUTIVE COMMITTEE OF THE PAN-AMERICAN MEDICAL CONGRESS.

The Committee on Organization of the Pan-American Medical Congress at its meeting at St. Louis, last October, elected the following International Executive Committee: The Argentine Republic, Dr. Pedro Lagleyze, Buenos Ayres; Bolivia, Dr. Emelia Di Fomassi, La Paz; Brazil, Dr. Carlos Costa, Rio de Janeiro; British North America, Dr. James F. W. Ross, Toronto; British West Indies, Dr. James A. De Wolf, Port of Spain; Chili, Dr. Moises Amaral, Santiago; United States of Colombia, Dr. P M. Ibañez, Bogota; Costa Rica, Dr. Daniel Nuñez, San José; Ecuador, Dr. Ricarda Cucalon, Guayquil; Guatemala, Dr. José Monteris, Guatemala Nueva; Hayti, Dr. D. Lamothe, Port au Prince; Spanish Honduras, Dr. George Bernhardt, Feguagalpo; Mexico, Dr. Tomas Noriega, City of Mexico; Nicaragua, Dr. J. I. Urtecho, Grenada; Peru, Dr. J. Casamira Ulloa, Lima; Salvador, Dr. David J. Guzman, San Salvador; Spanish West Indies, Dr. Jaun Santos Fernandez, Habana; United States, Dr. A. Vander Veer, Albany, N. Y.; Uraguay, Dr. Jacinto De Leon, Montevideo; Venezuela, Dr. Elias Rodenguez, Caracas.

Hawaii, Paraguay, Santa Domingo, the Danish, Dutch and French West Indies are not yet organized. Nominations of local officers have been received from a majority of all the members of the International Executive Committee and a number of the lists have been confirmed by the Committee on Organization. These will be announced as rapidly as acceptances are received.

Charles A. L. Reed, *Secretary-General.*

Cincinnati, January 15, 1892.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, January 25, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. A. L. Mason, "Notes on Typhoid Fever from 670 Cases at the Boston City Hospital in 1890 and 1891."

Dr. C. L. Scudder, "The Management of Compound Dislocations of the Ankle-Joint."

Dr. G. W. Gay will report some Cases of Œsophagotomy.

G. G. Sears, M.D., *Secretary.*

RECENT DEATHS.

Charles Martin, M.D., Medical Director, United States Navy, died in New York, January 14th. He was appointed assistant surgeon in 1848; surgeon in 1861, and Medical Director in 1873. He was wrecked on the coast of Patagonia in 1851 and remained there some months. He was on the Cumberland in 1862, when she was sunk by the Merrimac, and on the Mohican, during both attacks on Fort Fisher. He was retired in 1884.

John George Metcalf, M.D., M.M.S.S., died at Mendon, January 13th, aged ninety years. He graduated from Brown University in 1822. In addition to an active practice, he held several positions of trust and importance, among them being that of State Senator, in 1858 and '59.

Henry Ingersoll Bowditch, M.D., M.M.S.S., died in Boston, January 14, 1892, aged eighty-three.

Berkeley Hill, F.R.C.S., Vice-president of the Royal College of Surgeons; Professor of Clinical Surgery at University College, died in London, January 7th.

BOOKS AND PAMPHLETS RECEIVED.

Shorthand and Type-Writing. By Dugal McKillop. New York: Fowler & Wells Co. 1891.

Gymnastic Exercise as a Prophylactic and Curative Remedy in Chest Diseases. By Edward O. Otis, M.D., Boston, Mass. Reprint. 1891.

Diagnosis and Treatment of Hæmorrhoids and other Non-Malignant Rectal Diseases. By W. P. Agnew, M D. Second edition. San Francisco. 1891.

Jacksonian Epilepsy; Trephining; Removal of Small Tumor and Excision of the Cortex. By Charles K. Mills, M.D., and W. W. Keen, M.D., Philadelphia. Reprint. 1891.

Surgical Anatomy for Students. By A. Marmaduke Sheild, F.R.C S., Assistant Surgeon, Charing Cross Hospital. New York: D. Appleton & Co. 1891.

Considerations upon Medical Hæmorrhage Surgically Treated, With a Successful Case, by a New Technique, of Saline Infusion for Severe Hæmorrhage. By Robert H. M. Dawbarn, M.D., New York.

Botany, A Concise Manual for Students of Medicine and Science. By Alex. Johnstone, F.G.S., Lecturer on Botany, School of Medicine, Edinburgh. New York: D. Appleton & Co. 1891.

Physical Diagnosis. A Guide to Methods of Clinical Investigation. By G. A. Gibson, M.D., D.Sc., F.R.C.P., and William Russell, M.D., F.R.C.P., of Edinburgh. New York: D. Appleton & Co. 1891.

Original Articles.

CONGENITAL DISLOCATION OF THE HIP.[1]

BY A. M. PHELPS, M.D., NEW YORK.

Some two years ago, Dr. John Ridlon, of New York, reported a case of congenital dislocation of the hip, the head of the bone resting on the pubes. This dislocation forward and upward is unusual. However, within a year two other cases came to my clinic at the Post-Graduate Medical School and Hospital, with the same deformity.

The deformity in each case was precisely the same. They were, in fact, anterior and upward congenital dislocations of the head of the femur. The child, illustrated in this article, had always been healthy; there was no history of injury in the case; nor of any severe labor. The mother noticed that when the child began to walk, one leg was shorter than the other, and that the feet and toes were turned out. Figs. 1 and 2 are cuts made from photographs taken of the case when first seen. They show the outward rotation and shortening seen in anterior dislocation. The case was three years old when I first saw it. I applied a long traction splint, which the child wore for a year and a half, when it died from acute meningitis. A post-mortem was permitted, and I have the specimen here, which, with your permission, I will now present.

Figs. 3 and 4 are drawings of the specimen made by Dr. Macdonald, and they very correctly represent the pathological condition found.

In the first specimen the head of the bone is seen above the rim of the acetabulum, dislocated upward and forward. The capsule of the joint is cut away to give the view.

In Fig. 4 the acetabulum is seen to be angular in shape, small and undeveloped, with the remains of the ligamentum teres. This specimen is of great interest, I believe, because, so far as I know, it is the only pathological specimen of anterior congenital dislocation of the hip reported, and it will be found of great value in studying the etiology of this deformity. It will be observed that the pressure of the head of the bone has changed the form of the anterior border of the acetabulum from concave to convex.

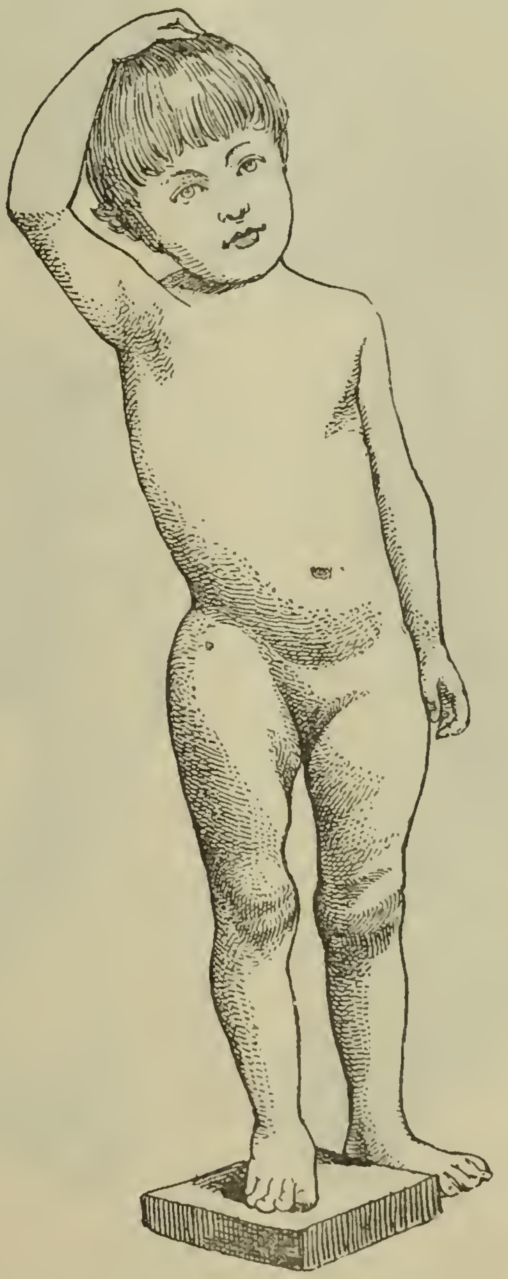

Fig. 1.

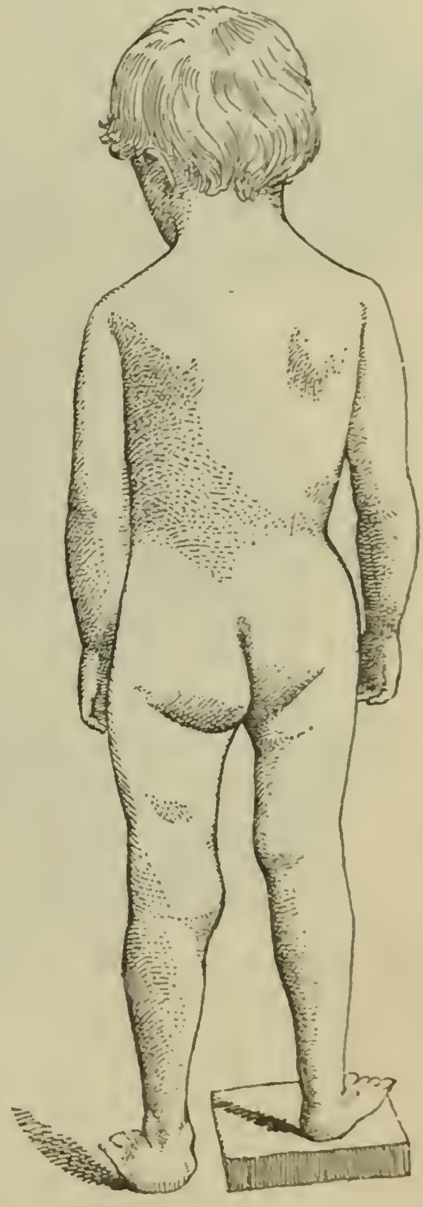

Fig. 2.

Etiology. — It has been taught, and it is accepted by the profession generally in America and in England, that congenital dislocation of the hip is a secondary condition, depending upon the non-development of the acetabulum.

This specimen is surely a case of congenital dislocation primary, with non-development of the acetabulum from non-use.

I am not prepared to say that all cases are like this, but surely here is a case of congenital dislocation *in utero* not due to non-development of the acetabulum.

Dr. Cornigan, who, by the way, has written an excellent monograph on this subject, believed that the dislocation was a primary one, due to reflex spasm of the muscles *in utero*, caused by some central nerve lesion in early fœtal life.

A glance at the anatomy of the hip-joint will show that the muscles pass diagonally across the body from the shaft of the femur to the pelvis, being in a line with the axis of the neck of the femur.

It seems to me that dislocation of this bone could not take place by the contraction of these muscles, but, on the contrary, that contraction of the glutei muscles or of any of these groups, would tend to press the head of the bone more firmly into the acetabulum. A long continued spasm of muscles, sufficient to cut away the acetabulum, would destroy the head of the bone and produce a true inflammatory disease of the hip-joint.

Heredity, no doubt, has much to do with producing this deformity. Dupuytren relates the history of a case — Marguerite Cardas — who had two aunts on the maternal side, affected with lameness from their earliest attempt at walking. Marguerite's father had a sister lame from birth on the right side, who died at eighty years of age. Another sister, well formed, gave birth to a child with shortening of the right inferior extremity. This woman has a daughter by a healthy man with three inches of congenital shortening of the right leg. This girl also married a healthy man, but his father had a congenital dislocation of the right femur. She has had four children, two of whom present the hereditary infirmity.

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[1] Read before the American Orthopedic Association at Washington, D. C., September 23, 1891.

Similar cases are numerous, and it will be difficult to doubt that hereditary predisposition exerts some influence over the recurrence of this deformity in children whose parents or ancestors have been affected by it.

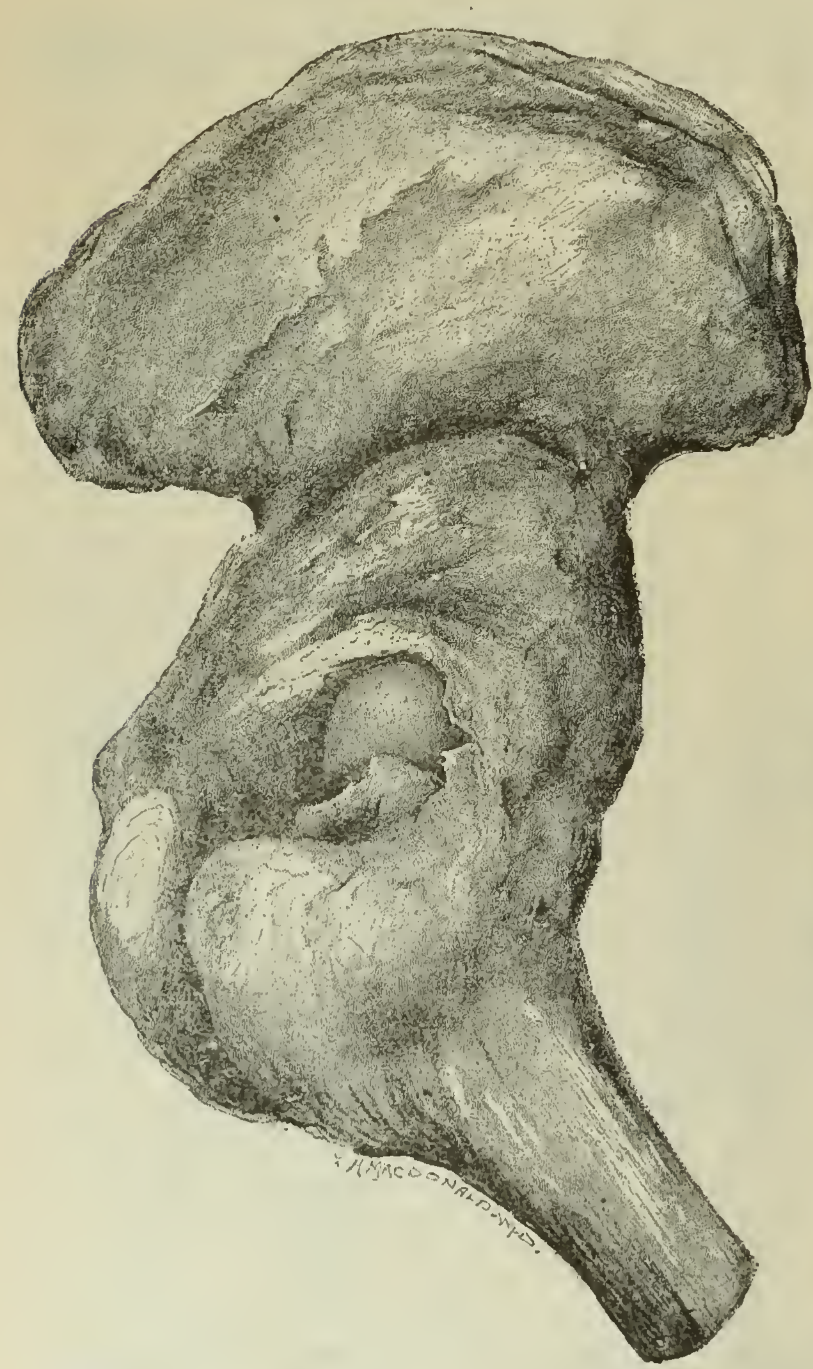

Fig. 3.

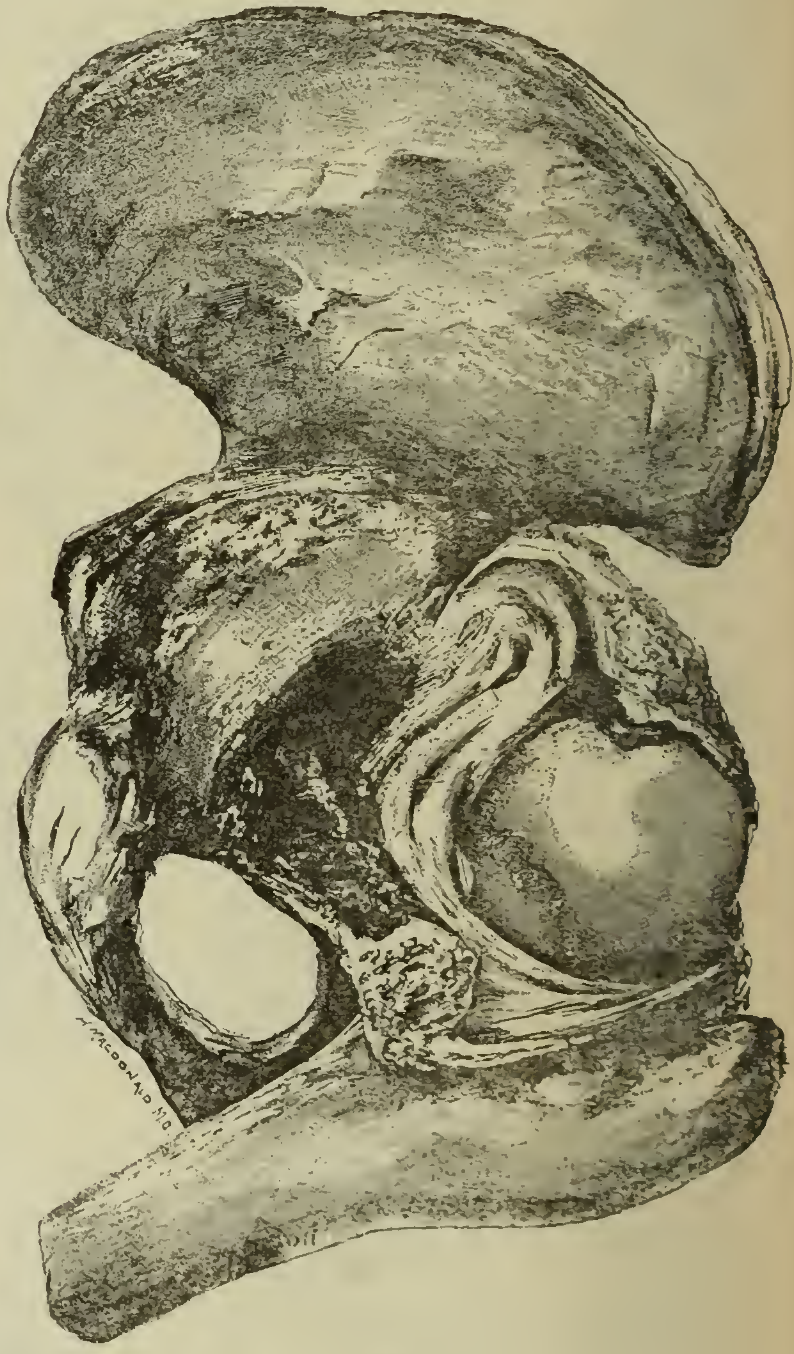

Fig. 4.

Ambrose Paré, 1678, Book 16, page 347, says of hereditary causes: "Such as parents transfuse into their offspring, hence it is that crooked, not necessarily, but ofttimes, are generated by crooked, and lame by lame."

Also, "Hippocrates himself avers that infants in the very womb may have their joints dislocated by a fall, a blow, or compression."

Among the other causes enumerated, are:

(1) An original defect in the organization of the germ, or the operation of the formative power (by Dupuytren). This hypothesis has no support in embryogeny.

(2) Arrest of development of the cotyloid cavity. The pathological specimen here presented was certainly not produced by this cause.

(3) Certain articular maladies occurring in the fœtus during intra-uterine life. No doubt diseases of the joint might occur which would produce a diastasis or even the destruction of the acetabulum, leading to a dislocation.

(4) Diseases of the primitive nerve centres are said to cause a perverted condition of the excito-motor apparatus of the medulla spinalis, producing a spasm of the muscle, and resulting in dislocation. This is the favorite theory of Dr. Cornigan and M. Guerin; but I have already stated that the anatomy of the joint is such that muscular spasm, independent of other causes, could not produce dislocation of the hip. It is true that in anencephalus fœtal monsters, congenital dislocation of the hip, club-foot, and other deformities are found, but there must be other pathological conditions present favoring these deformities, because many of

those monstrosities have no deformity of the extremities whatever.

It seems to me that if spasm of the muscle *in utero* produces dislocation of the hip, it ought always to produce it in the same direction, but we find that the usual form is upon the dorsal of the ilium, and this specimen which I present is one upward and forward, and Dr. Cornigan says that the dislocation may take place downward and forward, or downward and backward.

These facts, together with the peculiar anatomy of the hip-joint and the direction in which the muscles operate upon the femur, lead me to believe that this is not one of the causes *per se* of congenital dislocation of the hip.

A few years ago I saw a child one hour after it was born. The right limb was an inch shorter than the left, and there was a dislocation upon the dorsal of the ilium. I manipulated the limb in the usual method and reduced the dislocation, and the head remained in place without a retaining apparatus. This was clearly a case of dislocation which had taken place during confinement. If the deformity had not been noticed until the child began to walk, any physician would have said that this was a case of congenital dislocation of the hip.

Mr. C. B. Lockwood presented at the London Pathological Society two specimens of infants illustrating the absence of the margin of the acetabulum, with and without displacement of the head of the femur. (See *Transactions* of that Society, vol. xxxviii, page 303, 1887.)

The first case is one of microcephalic fœtus, probably born at full term; a case of double-breech presentation, and after birth the thighs remained flexed upon the abdomen. The pelvis was quite well formed, with the exception of the acetabulum. The cartilaginous rim of that socket was entirely absent, otherwise the joint was normal. The capsule was capacious; the ligamentum teres longer than usual. The head of the femur was normal, lying upon a flat surface.

The second case shows absence of the margin of the acetabulum, with displacement of the head of the femur upon the dorsum of the ilium. This was a breech presentation. After birth the thighs remained flexed upon the abdomen and the legs over-extended upon the thighs. There was an ectopium of the abdomen, with considerable protrusion of the viscera, protrusion of the liver, etc.

The brain and spinal cord seemed normal. The head of the radius was displaced on to the front surface of the ulna, and the carpus toward the flexor aspect of the radius and ulna; both hips were displaced upon the dorsum of the ilium, with changes of all the structures entering into the formation of the joint. Head of the femur was irregular in shape. The cartilaginous margin of the acetabulum was absent, although the cotyloid depression seemed exceedingly deep, but not triangular. The ligamentum teres was exceedingly long, and capsular ligament capacious.

Many of the pathological specimens reported, after excisions for old dislocations, demonstrate that the acetabulum ceases to develop, and undergoes atrophic change after the head of the bone has been dislocated. It is easy to conceive of disease attacking one or both hips *in utero*, producing effusion into the joint, with or without destruction of the head; resulting, through reflex spasm of the muscle, in dislocation of the head of the femur, which is frequently seen in hip-joint disease.

I am inclined to believe, judging from the pathological specimen here presented, and from the case of dislocation at childbirth which I saw, together with pathological specimens reported by Mr. Adams, which I have personally examined in a Pathological Museum in London, that the deformity is more frequently produced by violence of some description, or by pathological changes, the result of inflammation, than from any other cause.

We are all familiar with the "loose joints" in certain individuals who are capable of producing dislocation of almost every joint in the body. I now have a patient who can easily dislocate the right hip and reduce the dislocation, and it gives her no inconvenience.

Given this condition *in utero*, slight causes would suffice to dislocate the head of the bone. If this occurred early in intra-uterine life, the child would probably be born with congenital dislocation and an undeveloped or absent acetabulum.

If the head of a bone has long been dislocated, the surgeon finds, when he performs an excision, that the joint itself is filled with new material. I have observed this in the excision of the shoulder-joint, performed for old dislocation of only six months' standing.

If a dislocation occurs in a rapidly-growing fœtus, on account of hereditary causes (a long relaxed ligament), or by violence in childbirth, and the deformity is not discovered until the child begins to walk at the age of fifteen months, it should be expected that the acetabulum would be absent or undeveloped.

To summarize: Congenital dislocation of the hip is produced, I believe, by injury at birth; injury *in utero*, or disease *in utero*; rachitis; hereditary influences, and, in exceptional cases, if such there are, by arrest of development of the acetabulum.

Treatment. — The treatment is divided into mechanical and operative. Complete excision of the joint has been performed, and good results reported.

Cutting down and making a new acetabulum in the dorsal of the ilium, and nailing the head of the bone into it, has met with some favor.

These two operations are advisable only in adults or in children over seven or eight years of age.

The operation of Hoffa, of Würzburg, in small children seems to me the most rational one to perform. He makes an incision down on to the head of the bone; scoops out the acetabulum, cutting deeply into the bone, and reduces the head to its normal condition. He claims excellent results from this.

The operation is not performed on children over five years of age, and where it is an impossibility to pull the bone down to the old acetabulum.

Operations of this magnitude are serious, and must be attended with considerable mortality. Still, the results of mechanical treatment in the past have been so discouraging that the surgeon now feels justified in performing any of the operations which promise satisfactory results.

The mechanical treatment of hip-joint disease has always been unsatisfactory, until the case of Dr. Buckminster Brown, of Boston, was reported. This case was perfectly cured, with perfect motion, without shortening. It was treated in bed for two years by extension, and great care in manipulation.

The French have long treated their cases in bed, and have reported very good results. They have also devised very ingenious appliances for making extension and still allowing their patient motion of the hip-joint. After the patients have been treated for a length of time in bed, they are allowed to exercise in a wheel-chair.

Adams improved upon this method of long confinement in bed, by devising a bed in which extension could properly be applied and the limbs held in the normal position. In this, the patients could be carried into the open air daily. This is simply a form of portable bed.

Sayre and Taylor, in fact nearly all of the American orthopedic surgeons, have treated such cases with the long traction hip-splint: but I must say, judging from my own observations and those of others, that the results of this plan of treatment have been most unsatisfactory. The patient would wear the splint for years, and when removed there would either be a relapse, or one limb would be found to be considerably shorter than its fellow.

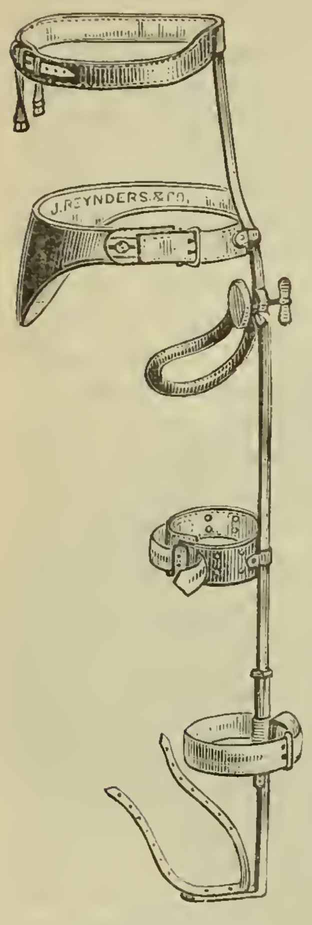

Fig. 5.

I believe that the treatment of congenital dislocation of the hip should be divided into three stages:

(1) The period in bed.

(2) The period with the long fixation splint with a lateral-pressure screw. (See Fig. 5.)

(3) The period with the walking-splint.

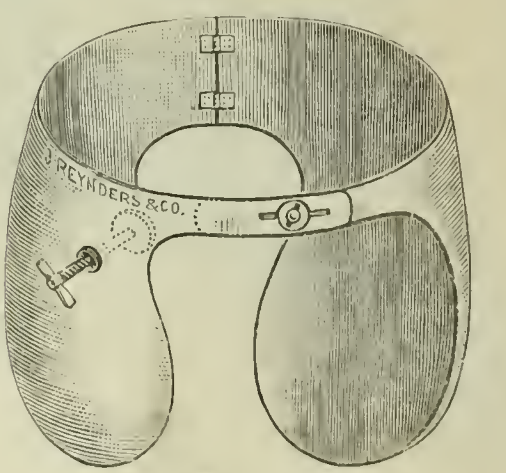

Fig. 6.

The length of the period of bed-treatment should continue until the limb is drawn down to the length of its fellow, if possible. During this treatment by extension, the patient is put into steel breeches (see Fig. 6), which has a lateral-pressure screw fitted to a pad, which makes pressure over the great trochanter: the object being to excite a certain amount of irritation, which will result in the growth of new tissue around the head of the bone.

After the limb has been drawn down to its normal length, which will take usually from two to six months, the patient is put on crutches, with a high shoe and fixation-splint, with lateral pressure, as seen in Figs. 5, 7.

The patient is never allowed, during this stage of treatment, to step upon the brace, but after a year, or a year and a half, the upper part of the brace is cut off, the high shoe is lowered, and the patient allowed to walk upon the splint.

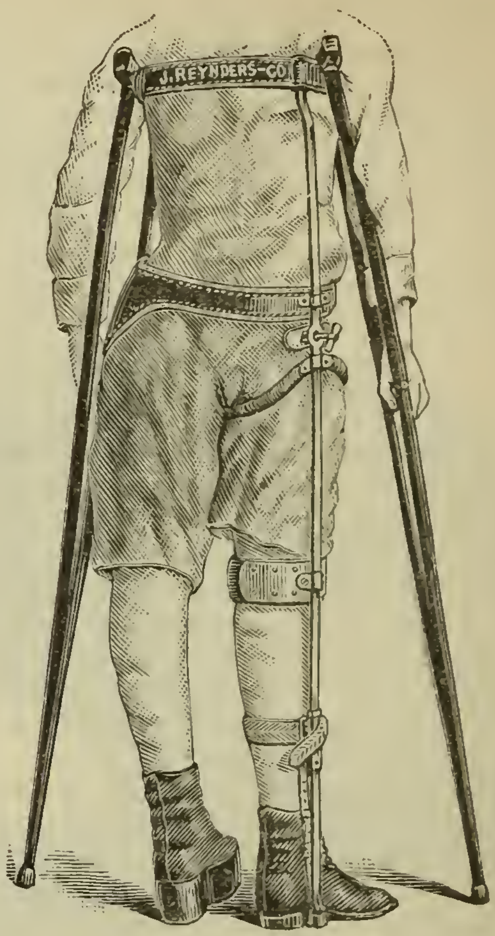
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Fig. 7.

Small children I treat with the plaster-of-Paris portable bed.

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TWO CASES OF RUPTURED UTERUS TREATED EXPECTANTLY.[1]

BY EDWARD REYNOLDS, M.D.

Mrs. X., an out-patient of the Boston Lying-in Hospital, had been in labor about eighteen hours when I was called to her on July 24, 1886. The head was extended across the brim, the os was about the size of a dollar, the pains were almost unintermittent, and the uterus was in a state of tonic retraction. The condition had not been considered important, and I was merely sent for on account of lack of progress. I etherized the woman, and introduced the hand to flex the head, but with considerable anxiety, on account of the tonic condition of the uterus. At almost the first touch, before I had made more than a tentative effort, and before I had used as much force as is ordinarily requisite, there was an audible snap, the head receded from my touch, and the cord prolapsed. On passing the fingers through the os, I found that the head and one shoulder had escaped from the uterus into the abdominal cavity through an extensive longitudinal rent in the right lateral wall. The cord was pulsating, and the feet were easily accessible; in the interests of the child, I dilated the os manually, delivered by version, and removed the placenta and membranes manually from the uterine cavity. I then asked Dr. C. M.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, December 2, 1891.

Green to see the case with me; in the meantime administering stimulants subcutaneously on account of the severe collapse which almost immediately followed the rupture.

On Dr. Green's arrival, we carefully examined the uterus, and found that the rent extended from the cervico-corporeal junction about half-way to the fundus, but that it had not been prolonged into the cervix during the delivery of the child. There was no hæmorrhage of moment; and although the woman was by that time beginning to react from the primary shock, we agreed that her weakness forbade us to think of removing her to a hospital, and that the surroundings, which were those of a filthy tenement house, rendered laparotomy so far inadvisable that it was better to entrust her to the chances of conservative treatment. Within the next few hours she rallied from the shock, and during the next few days underwent a somewhat severe peritonitis, which was treated by opiates. She became progressively more and more weak; and although on the sixth and seventh days after the accident the peritoneal inflammation appeared to be decreasing, she failed, and died, apparently of exhaustion, on the eighth day. There was undoubtedly some septic infection. The child did well. I think now, as we both thought then, that the case was one which under better circumstances should have been treated by laparotomy.

The second case which I have to report is one which I saw in consultation, and which for obvious reasons I am unwilling to substantiate by giving the residence of the patient, or the name of the gentleman with whom I saw it.

The patient was a primipara, and after a somewhat long labor without essential progress, the doctor did a manual dilatation and version, extracting a medium-sized child without especial difficulty. Failing to deliver the placenta by Créde's method, he passed his hand into the vagina, and was horrified to find that his fingers passed readily through a large rent in the posterior cul-de-sac, and came into contact with the peritoneal surface of the posterior uterine wall.

On arrival, I made a vaginal examination, and assured myself that the posterior vaginal wall had been ruptured across Douglas's fossa at its junction with the cervix, almost from side to side. I recommended no active treatment, other than scrupulous asepsis, which had already been observed during the labor; stimulants to counteract the primary shock, which was not extreme; a liquid, supporting diet; and the free use of small but repeated doses of sulphate of magnesium. I saw the patient several times during her convalescence. She underwent a fairly severe general peritonitis, but was never in a condition which I considered dangerous, and made a prompt recovery. She came to my office about three months later, at my request, for a pelvic examination. She was at that time the picture of health, and complained of no pain or other symptoms. On bimanual examination, I could detect no abnormality of the pelvic organs, other than a readily recognized cicatrix in the posterior cul-de-sac of the vagina.

Though this was properly a case of rupture of the utero-vaginal attachments and not of the uterus, the conditions involved are so closely similar that the distinction seems to be technical rather than essential.

In addition to these two cases I have had the opportunity of seeing two others, both of which recovered without treatment. Of these I will not speak in detail as I hope that Dr. Green, in whose care they were, will report them himself to-night. My own experience with this accident thus consists of four cases, all treated without laparotomy, of which three recovered, while in the fourth, the only fatal case, circumstances prevented the method of treatment which was really indicated, that is, laparotomy.

I have made no attempt to review the literature of the subject, but before entering upon a general discussion of the question, I wish to quote from the first number of the *New York Journal of Gynecology and Obstetrics*, two very remarkable cases which have a distinct bearing upon the question.

In the course of a discussion upon intra-abdominal hæmorrhages in the New York Obstetrical Society, Dr. J. R. Goffe said that "an interesting case had come under his observation last summer, at Randall Island Hospital, in a woman who had been confined four months before, the labor having been a difficult and unaided one. While she was etherized for perineorrhaphy, he carefully examined the pelvic organs, and found that the sound passed directly through the uterus, and could be felt directly beneath the abdominal walls. The uterus was retroverted. Upon dilating the cervix and passing the finger into the uterus, the opening was found to be an extensive rent obliquely across the face of the uterus, reaching from the left horn to the internal os. There was no history to account for it, but he supposed it must have occurred during labor." This was the second case in which the speaker had found an opening through the uterus. The first occurred in a woman who presented herself at the clinic of the Woman's Hospital, and was seen at the same time by Dr. Cleveland. In that case, they could pass the uterine sound without any force directly through the uterus up to the umbilicus. The opening was not as large as in the one that he had seen the past summer.

When to these cases of my own are added the numerous instances of recovery without operation which I have chanced to see in the course of general reading during the last six years, I can but disagree heartily and entirely with the statement which is so often made, that laparotomy and suture of the rent is indicated in every lacerated wound of the uterus.

I am glad to have an opportunity of speaking upon this subject, because it is one in which I have been led to take an active interest by the experiences to which I have referred, and also because the opinions to which that experience has led me are in considerable contrast to those which we have just heard; and, as I believe that such discussions as this to-night are most profitable if each speaker outlines briefly the views to which his experience has led him, in order to afford an opportunity for the development of both sides of the question, I think it may be permissible for me to occupy a few moments more with a brief statement of the principles by which I should now expect to be guided if any case of this nature should present itself to me.

This accident exposes its victim to three dangers, and to three only; namely, to the exhaustion of primary shock, and to the dangers of hæmorrhage and peritonitis.

Primary shock, though rarely fatal, is usually well marked; and is sometimes so severe that it might well be sufficient to cause death in a feeble woman, or in one whose heart was already organically unsound. It is always an element of importance in estimating the method of treatment which should be employed.

Hæmorrhage, though often fatal in untreated cases, must, I think, be much less frequent than has been supposed, at least, in its severer forms. So far as I am aware, its appearance or non-appearance cannot be predicted from the situation or extent of the rent. While there can be no doubt that in the face of persistent progressive hæmorrhage, laparotomy and suture of the rent offers the only possible chance of life to the patient, the diagnosis of the presence or absence of hæmorrhage is unfortunately by no means easy, and I should certainly agree that in the presence of any question upon this point the patient should be given the benefit of the doubt and subjected to laparotomy. In making this diagnosis our chief reliance, apart from physical examination, must be placed upon the duration of the primary shock. Under the subcutaneous use of stimulants, and the application of artificial heat, the patient ordinarily recovers promptly from shock unaccompanied by hæmorrhage. In consideration of the fact that there have probably been but few cases in which laparotomy was performed within an hour after the occurrence of the accident, I should be inclined, in the absence of distinct evidences of hæmorrhage, to wait at least an hour after reaction, before assuming its presence.

In many cases, however, it is possible to obtain important information by passing the fingers through the rent, in order to ascertain the presence or absence of considerable clots in the peritoneal cavity; and if this is done with proper gentleness and with due care to minimize the amount of manipulation, I can hardly think that it would add to the shock in degree sufficient to contraindicate the manœuvre.

In the absence of hæmorrhage, the one danger to which the patient is subjected is that of death from peritonitis; and the question in such cases resolves itself into the inquiry, what is the best treatment for peritonitis of either mechanical or septic origin in the presence of a lacerated wound of the uterus? Two elements in the situation must be considered in answering this question; and I think that it is best to consider each separately.

When the circumstances and previous conduct of the case are such that but a small quantity of, presumably aseptic, material can have entered the cavity of the uterus, I can see no advantage in an immediate laparotomy; but should be content with supportive treatment and the administration of Epsom salts, in the manner recommended by Mr. Tait, when the first abdominal tenderness appears; but in the case of a patient who is in good condition and not markedly collapsed, I should be inclined to begin its cautious administration at once, in anticipation of the peritonitis which is almost certain to follow, in some slight degree, at least.

My view of the proper treatment of these cases is founded mainly upon my experience in the treatment of septic peritonitis, in the out-patient clinic of the Boston Lying-in Hospital. Although in that clinic the death-rate from sepsis has of late years been reduced to a scarcely appreciable fraction of one per cent., the conditions under which the work is done have as yet prevented us from wholly excluding the disease in its minor and medium degrees of severity; but, although we are confronted several times each year with septic peritonitis of more or less severe grade, we have, since the adoption of the open treatment as a routine measure, nearly four years ago, lost but one patient from this cause; and in that one, the onset of the disease was so extremely severe, that within forty-eight hours after the first symptoms she had developed metastatic abscesses, and died of pyæmia on the succeeding day.

In the light of this experience, I cannot believe that the degree of peritonitis which is likely to be caused by the retention within the abdominal cavity of a small amount of aseptic blood, or even of aseptic lochia, is likely to afford a sufficient risk to compensate for the added dangers of laparotomy.

When the circumstances of the case are such that a large quantity of clean foreign material, or an even small quantity of presumably septic fluid, has obtained entrance to the abdominal cavity, I think that the choice of treatment must depend upon the extent and situation of the rent. It seems to me that the only advantage to be gained from laparotomy, so far as the immediate preservation of life is concerned, is gained by the opportunity which it affords for cleansing the peritoneum by the injection of large quantities of warm water; and I contend that when the rent is large and accessible, and so situated as to afford fair drainage, it is better adapted for this purpose than any wound in the abdominal wall can possibly be. I should then in such cases content myself with flushing out the cavity through the wound, taking care to provide an adequate return for the injected fluid; and should resort to the insertion of a drainage-tube or a Miculctz gauze drain, in any case in which this seems to be indicated by the other circumstances of the case. When in the presence of probable septic infection, or of a large amount of foreign material in the peritoneal cavity, the wound is small or in an inaccessible situation, I should unhesitatingly resort to laparotomy, and should then seize the opportunity for the incidental advantage in after life which I believe to be afforded by accurate suture of the uterine wound.

Cases of incomplete closure of the wound, such as those reported by Dr. Goffe, are probably extremely rare, and in such cases, I myself believe that it would be as well for the patient to undergo a subsequent laparotomy for the closure of the rent, rather than to submit to the operation in the presence of shock, and in the face of the other disadvantageous circumstances which usually accompany an accidental rupture of the uterus.

In conclusion, I would then advocate laparotomy in the presence of persistent hæmorrhage, and in cases where the rent is small or inaccessible, and the quantity of foreign material introduced into the peritoneal cavity excessive, or of a septic character; if the irritation of the peritoneum has not been excessive, I would content myself by flushing out the abdomen, if possible; I should be satisfied with supportive treatment and the use of saline cathartics in all other cases. The use of these latter remedies I should of course advocate in all cases, whether operated upon or not.

It will be seen that the case which Dr. Haven has reported falls within the class for which I should recommend laparotomy, and I congratulate him heartily upon his wisdom and success in its management.

Dr. Wilhelm Krause, who has been Extraordinary Professor of Anatomy in the University of Göttingen for thirty years, has resigned his chair.

RUPTURE OF THE UTERUS, WITH THE REPORT OF A CASE.[1]

BY GEORGE HAVEN, M.D.

Rupture of the uterus, and particularly of the non-pregnant organ; is such a rare and at the same time such a serious accident, that I have deemed the following case sufficiently interesting to present for discussion this evening. I am obliged, in order to give a clear idea of the case, to briefly sketch the history before rupture occurred.

Some time ago I was asked to see Mrs. E., six months pregnant, and eclamptic. The convulsions began at six o'clock, A. M., and continued at intervals of about thirty minutes until eleven o'clock, when she was chloroformed, and the os uteri dilated manually. I saw her at one o'clock, and after a short time delivered her. She was put in a steam bath, given croton oil, etc., and made a perfect recovery. Ten days later, she had a slight hæmorrhage, which was followed in five days by a second. Shortly after this I saw her again. She was very much blanched, with a rapid, thready pulse. A small amount of placental tissue, was removed with the curette, in all about a tablespoonful. She was given stimulants and ergot.

Everything went well from this time for a month, when she had a hæmorrhage, which in sixteen days was repeated. At this time Monsel's solution was injected. Shortly after this I saw her. Pulse 150, and very weak; lips and finger-nails white. Ether was given, the patient placed in the Sim's position, and the curette introduced, without difficulty after the proper curve had been established. The left uterine wall was explored first, and everything found apparently normal. The curette was then turned to explore the right cornu, when without force and to my dismay, it entered to the handle. The uterus was now examined bimanually, and found small and apparently hard. The patient was placed in bed, brandy given subcutaneously, and arrangements made to bring her to Boston, which was done the following morning. Dr. J. W. Eliot saw the case in consultation. The finger introduced into the uterus felt several grooves, running towards the right cornu; and a sterilized sound introduced into the cavity was clearly felt at the level of the umbilicus. A rupture of the right wall of the uterus was thought to be present, and laparotomy advised. At three o'clock in the afternoon, or twenty-four hours after the rupture was first discovered, with the assistance of Drs. Mumford and Cobb, I opened the abdomen by an incision in the linear alba, two and one-half inches long. The uterus was easily brought into view, and a ragged rent was found extending from the right cornu almost down to the internal os, anterior to the broad ligament. The edges of the rent contained several white centres, which looked like spots of necrosis. A V-shaped piece was excised, leaving a clear wound, in what appeared to be normal uterine tissue. The edges were united by four deep silk sutures, going through the muscular wall, and three superficial ones, drawing as well as possible the peritoneum over the wound. The abdomen was then flushed with boiled water, at about 110° F., for two reasons: first, because of its effect upon the pulse; and, second, to wash out any fragments or clots. The abdominal wound was closed with four silver-wire sutures. The patient was put to bed surrounded with hot bottles; brandy was given subcutaneously, as well as by enema. The pulse after the operation was about 160 and weak. An injection of salt solution was thrown into the rectum, but did not remain long enough to be absorbed. After one of the earlier hæmorrhages, this was found of great service. The pulse on the third day fell to 125, the temperature never went above 101.2°; and on the twentieth day, the temperature was normal, with a pulse of 100. She remained five weeks at the hospital, then returned to her home. I saw her a few days ago, and found everything in excellent condition. Color has come back to her cheeks; the uterus was firm, small and in good position.

There are two good reasons for resorting to laparotomy in all cases of uterine rupture; namely, the danger of sepsis and the possibility of hæmorrhage. The first we may have guarded against, and, to a certain extent, be able to exclude. The latter we can never feel quite sure of when we realize that the uterus is practically an erectile organ; that because it is well contracted at one time is no proof that the contraction will remain; and if it should become relaxed, hæmorrhage of great volume can take place, either through the cervix and so externally, or internally, causing a fatal termination.

One other thing is worthy of thought in the case reported; namely, the ragged condition and necrotic appearance of the rent. It was certainly not a wound which would have healed kindly by first intention; an abscess might have formed which at best would have delayed recovery, and been a serious matter for the patient, reduced as she was by hæmorrhage; the peritoneal cavity might have been flooded by pus, when the result would probably have been fatal.

I find one case reported in the *British Medical Journal* for October 17, 1891, page 382, where, after puncture, a pint of corrosive solution was injected into the abdominal cavity through the opening in the uterus; the patient dying in the course of three days from sublimate poisoning. Could this life not have been saved by a laparotomy and proper flushing of the abdominal cavity? Statistics are at best disappointing, so many avenues for error are open.

The title of the paper not limiting me to the simple report of a case, I wish here to incorporate a few tables relating to rupture, etc., in the parturient uterus. First, as regards the frequency of rupture, Dr. Riedinger of Prague reports five cases in 2,005 births; Spiegelberg, one case in 3,000 births; and Leopold, five in 6,100. These tables are of later date than those compiled by Ames in 1881, when he gave 20 ruptures in 99,796 cases or one in 4,990. All these, taken together, give a total of 31 cases of rupture in 110,901 cases, or one rupture in about 3,575. The only cause for error in this calculation is that the English statistics are of a much better showing than the foreign, possibly due to the greater frequency of contracted pelves among the German population. This great difference will be shown from the fact that at the Royalty Maternity, London, and at Guy's Hospital, there were but 17 cases of rupture in 92,796 cases, or 1 in about 5,500. Winckel gives an interesting table of mortality from tears occurring in different situations:

Location of Rupture.	Cases.	Recov.		Per cent.
1. Fundus	5	3	=	60
2. Anterior wall	37	17	=	34
3. Posterior wall	8	4	=	50
4. Side	11	3	=	27.3
5. Circular	2	1	=	50
6. Cervix	18	9	=	50

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[1] Read before the Surgical Section of the Suffolk District Medical Society, December, 1891.

Bandel states that all tears begin in the lower uterine segment, and extend upward. The greatest number of recoveries, according to this table, have occurred when the tear was situated in the fundus, the next best situation being the posterior wall. Winckel has never known a case to recover where the tear extended into the fornix vaginæ. The uteri ruptured, have in almost every instance, been those of multiparæ; and in ten cases which I have been able to collect occurring since 1885, I find that but one took place during the first pregnancy; three in the second, four in the fourth, one in the sixth and one in the seventh.

There are those who still strongly advocate an expectant method of treatment, namely, drainage, tight abdominal bandage, and in some cases massage; and on the other side, there are those who believe that the abdomen should be opened in every case. We must not forget that there are complications which may make either method a failure; as, for example, first, the escape of a macerated fœtus through the tear. In eight cases of this kind, three only recovered. Second, where the fœtus has partly escaped, and an attempt is made to remove it through the natural channel, the tear is often enlarged, and the prognosis consequently more unfavorable. The third complication is where the gut prolapses through the tear into the vagina. In many cases which have come to operation, hours have elapsed since the rupture occurred, the patient has lost much blood, and is suffering from profound shock. Given a case where the tear is discovered almost as soon as it occurs, and I think there is very little doubt that laparotomy is indicated, especially since the improved Cæsarian section has taught us how to suture the uterus. The nature and seat of the tear will have to be considered. Hæmorrhage is first controlled by the ligature, or forceps. If the tear is low down in Douglas's fossa, and of not very large extent, drainage into the vagina may be employed. If, on the other hand, the tear is fairly clean and occurs either on the fundus or upon the anterior or posterior wall, the edges may be trimmed and united with deep and superficial sutures. If ragged and large in extent, especially if extending from the fundus well down to the cervix or into it, the uterus had better be removed, by amputation, if enough of the cervix remains to form an extraperitoneal stump; the mortality being great where the stump is dropped back into the abdominal cavity. If this is not the case, the whole organ had best be removed. Coe thinks that in cases where the tear is incomplete, and where hæmorrhage has taken place in the broad ligament, there is still some doubt regarding the treatment. These are cases which I think can safely be left to nature, and the less we meddle with them the better. I have found notes of ten cases which, so far as I know, have never been tabulated. Eight were treated by laparotomy. Of these, four recovered and four died. One of these cases, however, was complicated by the escape of a macerated fœtus into the abdominal cavity, so that I think it is only fair to exclude this one from the number. If this is done, we have four recoveries and three deaths. Two were treated by drainage. One lived and one died. The uteri in the cases operated upon were all treated with the Sænger stitch, silk being used for ligature; and in this connection, it seems only fair to include Winckel's cases, where ten out of fourteen recovered, all treated by laparotomy.

In conclusion, it appears to me that in cases of rupture of the uteri, both in the pregnant and non-pregnant variety, our best course is to open the abdomen, wash out the abdominal cavity and unite the tear by deep and subserous stitches, in all cases where it does not involve too much uterine tissue, or where the edges are not too much bruised and torn. Punctured wounds, as those made by the sound, for instance, can very properly be left to nature. The autopsy table has shown many uteri bearing scars from punctured wounds which occurred during life and gave no trouble.

In considering this subject, we must not forget the great advance which has been made since Sænger's first article on the improved Cæsarian stitch. That we can open the parturient uterus, remove the fœtus and sew it up again without to any great extent endangering the patient's life, is, I think, a pretty generally accepted belief.

As regards the material best suited for ligatures in this operation, I think that silk takes the first rank.

There are in the October number of the *American Journal of Obstetrics*, several cases of Cæsarian section reported, where the operation had been performed from two to three times upon the same individual, in some of the earlier operations, silver-wire having been used to bring the uterine surfaces together. It was found in position and in perfectly good condition; but the scar was not so firm as that found in cases where the silk had been used. The same may be said of catgut.

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The Frog and the Physiologist. — In his Christmas lectures at the Royal Institution in London, Professor McKendrick spoke of the services which frogs have rendered to the cause of physiology, and suggested that a statue of a frog be erected as an acknowledgment of the many benefits which the race of frogs have indirectly conferred upon the human race.

REMOVAL OF A CANCEROUS UTERUS BY VAGINAL AND ABDOMINAL HYSTERECTOMY.[1]

BY ERNEST W. CUSHING, M.D., OF BOSTON.

The operation of vaginal hysterectomy for cancer is now so well established as a comparatively safe and thoroughly useful operation, and the technique is so well understood, that descriptions of simple cases are no longer of particular interest. Various complications may arise, however, such as implication of the vagina or broad ligaments in the disease, inflammatory adhesions of the uterus or appendages, or disproportion of the size of the body of the uterus to the capacity of the vagina, which may either contraindicate the operation or make it so difficult and hazardous that it is not easy to decide whether it should be performed or not.

The case which I have to report to-night belonged to the latter category, and presented several features which make it worth reporting, and render it valuable as a means of establishing certain conclusions, and in aiding the formation of a decision as to what course is to be adopted in similar cases.

The history is as follows: The patient is thirty-seven years of age, married. She was brought to the Charity Club Hospital by Dr. Blazo, of Rochester, N. H. She had always enjoyed good health until nine months before entering the hospital, when she began to suffer from a sharp pain in the side, and had an acrid and watery vaginal discharge, which has lately increased. There is pain in the back, left side and leg, so that she cannot sleep. She is very nervous and has had to take morphine on account of the pain. The discharge is now bloody and offensive. Five months ago an operation was performed for removal of a cancer from the cervix uteri. This operation only gave temporary relief to the symptoms. The fundus uteri has enlarged considerably during the last few months. Owing to repeated hæmorrhages which have occurred lately, the patient is quite weak, though able to be about her room part of each day.

On examination it was found that the cervix, or what remained of the vaginal portion, was cancerous, the disease extending to the posterior fornix of the vagina at one point, elsewhere seeming to be limited strictly to the uterus. The broad ligaments were not implicated. The uterus was freely movable but the body was enlarged to the size of a fist, so that it was very doubtful whether it could be delivered through the vaginal opening.

All things considered it was determined to remove the cancerous cervix at any rate, and to extirpate the whole organ if the conditions found on operation and the strength of the patient should permit.

The cancerous tissue was first scraped away with the spoon-saw, the bleeding checked by packing the cavity of the cervix, and the field of operation thoroughly cleansed. The cervix was drawn down by threads passed through it and by forceps, and the customary incision carried round it. This was a matter of great delicacy posteriorly, as it was necessary to carry the incision below the limit of the disease in the posterior fornix, and to dissect carefully in order to avoid the rectum. This took some time as the parts were vascular and it was necessary to control all hæmorrhage with stitches and ligatures, since the patient was in no condition to lose much blood. The broad ligaments were secured with ligatures in order to have as much room as possible for extraction of the fundus. This took so much time, however, that I finally put a clamp on each side, thus securing all except the upper portion of each broad ligament.

It now became evident that the uterus was so long that these portions could not be reached without retroverting the uterus, which was impossible on account of its size. It could not be drawn down sufficiently to split it in halves, as the peritoneal insertion was very high up, both over the bladder and posteriorly.

The patient's condition was excellent, and the quickest and safest thing to do seemed to be to open the abdomen to remove the rest of the uterus. This was done at once, the diseased portion of the uterus having first been amputated and the vagina well cleansed as well as the hands of the operator; fresh instruments and sponges were employed, such as would be used in any abdominal section.

The patient lay, however, in the lithotomy position. The abdomen being opened the fundus was drawn up easily with bullet forceps. A clamp passed into the vagina was made to grasp the remaining portion of the left broad ligament, which was then severed. A chain stitch of catgut was then made to include the tissue between the anterior surface of the uterus and the bladder, as well as the remaining portion of the right broad ligament. The fundus was removed, the pelvis well irrigated with hot Hygeia distilled water, and a twist of iodoform gauze, as large as the wrist, was drawn from above down through the vagina. The abdomen was then closed, not having been open over ten minutes.

The patient was put in bed in good condition; the gauze drain carried away all the irrigation fluid. There was no hæmorrhage and the patient rallied well. The day after the operation all seemed favorable except that the pulse was rather rapid and intermittent. The second night, however, symptoms of heart-clot supervened. Precordial pain, anxiety, rapid intermittent pulse, rapid breathing, and towards morning vomiting of gastric fluid.

The second morning the clamps and gauze were removed. The abdomen seemed to be quite in order, no pain nor distension. Temperature 102°. The pulse however, was rapid and feeble, and could not be felt after nine o'clock. Some vomiting still; cardiac distress; pulse in carotids, 180. Death at noon, forty-seven hours after completion of operation.

Autopsy.—No signs whatever of sepsis or peritonitis; no fluid nor lymph in peritoneal cavity. Intestines had adhered together sufficiently to roof over the site of the pelvic operation. Kidneys normal. In the heart, beginning at the tricuspid valve, there was a firm clot, interlacing with the muscles and tendons of the valve. This clot extended through the opening of the pulmonary artery, and followed the bifurcations of this vessel, as is seen in the specimen here presented to the fourth or fifth bifurcation, so that it ends in long fine tufts, forming a complete cast of the lumen of the pulmonary artery.

The uterus herewith presented shows very distinctly the cancerous disease of the cervix and the implication of the posterior fornix. The enlargement of the corpus was due to a nodule in the anterior wall, about one inch in diameter. What this was, of course, could not be determined during the operation, and was not sufficiently clear even on incision of the specimen. Under the microscope it appears to be a sarcomatous nodule, and such is the opinion of Dr. Whitney, who has kindly examined it. I have here very fine microscopic slides, prepared by Dr. S. P. Cottrell, showing the nature of the disease of the cervix and of the nodule in the fundus. The one under the microscope is for the examination of members of the Society.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, December 2, 1891.

Of course, the fatal termination of this case leads to a consideration of the causes of this result, and of any means which could have been used to prevent it.

Heart-clot or thrombosis of the pulmonary artery is not a very rare complication of operations when the blood of the patient has been impoverished by long suppuration or by continued hæmorrhages. It is thus peculiarly liable to follow hysterectomy for grave cases of cancer, or for myoma, when this has led to much hæmorrhage.

The obvious conclusion is that the operation should be performed early, before the system is exhausted and the blood is impoverished. It is a very unfortunate and unpleasant position for the surgeon to have to choose between refusing his aid to a patient, who without it is doomed to certain and painful death, or, on the other hand, operating when he plainly sees that the chances are unfavorable, owing to delay. The consensus of operating gynecologists is strongly in favor of early operations in all cases which will have to be operated on eventually, and in this respect there is little doubt that the profession and the public will gradually be educated into the same position in regard to pelvic inflammations and myomata of the uterus, which they are now holding in regard to ovarian tumors. In regard to carcinoma uteri, however, the case is much stronger, every day of delay increases the risk of relapse, and may increase the difficulty and risk of operation. There is practically no danger in vaginal hysterectomy if done early and while the patient is in good condition, provided the operation is done properly and the subsequent treatment is judicious.

When in Berlin, in 1885, I heard Martin declare that in his opinion the proper treatment for all cases of cancer of the uterus in the early stages, was vaginal total extirpation of the uterus. I was astonished, but time has shown that his position is the right one, and I think it will now be endorsed by those modern operators who have studied the question thoroughly and are free from preconceived opinions on the subject.

In cases, however, like the one here presented, where the patient is weakened from hæmorrhage and discharge, it is sometimes well to do a preliminary operation for removal by the spoon-saw and cautery, of as much of the diseased tissue as possible, and this I have done in several instances with the happiest results. The absorption of septic matter is thus stopped, hæmorrhage ceases, opportunity is given for systematic nutrition, and after two weeks the major operation can be performed with better prospect of success. The disadvantages of this course, however, are the increased danger of relapse, owing to longer presence of the disease, and also the disinclination of the patients to undergo two operations when one might answer. In hospitals, also, where surgical work is done which must be clean and aseptic, it is not safe or right to other patients to have among them a case where the uterus is cleaning up after curetting and cautery. Of course, this objection is of less force where proper isolation of such unclean cases can be had.

In the case reported I judged it wiser not to delay as the disease had reached the extreme limit where extirpation was possible, and as I feared further spread of the disease both in vagina and fundus, while during the operation no signs of shock were noticeable. In regard to the removal of the cancerous uterus by means of an abdominal incision, it is well known that Freund's operation was so fatal as to be abandoned, but the cause of the mortality is easily found in the fact that all the steps of the operation were done from above, and then the anterior and posterior edges of the wound were united, making a long, difficult, tedious operation, without systematic drainage, and where the circumstances of the case were such that the peritoneal cavity was pretty sure to be infected. It is far easier and quicker, however, to remove the fundus only from above, after all the lower parts of the broad ligament had been severed from below, and the separation of the uterus from the bladder has likewise been largely entirely accomplished from the vagina. This method is applicable to cases of hysterectomy for myoma as well as for cancer; the compression of the broad ligaments by a clamp introduced from the vagina, as described above, was first performed by a surgeon of Brooklyn, N. Y., and is a rapid means of enabling the uterus to be brought up. In cases of hysterectomy for myoma or more particularly for sarcoma of the body of the uterus, where it is thought desirable to remove the whole of the cervix, the operation may be commenced and finished from above, or when the upper part of the broad ligaments has been tied off, the cervix may be encircled with a rubber constrictor and divided above the latter, when the stump can be surrounded with iodoform gauze and replaced at the bottom of the pelvis, the rest of the operation being finished from below.

The question of the best method of removal of the whole of the uterus, where it cannot be done by vaginal hysterectomy, is a very important one, and one which is under active consideration and discussion at the present time, but it cannot be adequately treated within the limits of this paper, which has been written merely to record one case, as it is only by the consideration and comparison of a large number of such operations that we can decide as to the best manner of treating such difficult and dangerous conditions.

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Clinical Department.

CYST OF THE PANCREAS, TREATED BY LAPAROTOMY; DRAINAGE; RECOVERY.[1]

BY M. H. RICHARDSON, M.D., AND J. G. MUMFORD, M.D.

THIS case is interesting as showing an unusual condition coincident, but not associated with already existing disease.

The patient, Mrs. B., referred to Dr. Richardson by Dr. Cox, of Holyoke, was a robust woman of thirty-eight, with an excellent previous and family history. She was married at the age of nineteen, but never became pregnant. Up to the age of thirty-four her catamenia were painless and regular, every twenty-eight days.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, December 2, 1891.

Four years ago menorrhagia became noticeable, and increased in frequency for a year, when she sought medical advice. Two years ago she thought herself well, after the prolonged use of galvanism. A few months later, however, flowing returned, this time accompanied by the familiar train of symptoms which had not previously been prominent,— backache, headache, "bearing down" and frequent micturition.

By physical examination the uterus was found in the first degree of retroversion, enlarged symmetrically, about the size of a large orange, four and one-half inches in depth, the endometrium friable and bleeding easily. The patient's general condition was good; for the menorrhagia, though of ten days' duration each month, was inconsiderable in amount. Rest in bed, two thorough curettings and tonic doses of ergot and bromide of potash enabled the patient to consider herself well and to go about her household work after three months. This was January, 1891. Mrs. B. thinks that until about the 1st of May she had no further pelvic disturbance.

About the 10th of February, however, she had an attack of vomiting with pain in the epigastrium and for a month eating was followed by nausea. About the 1st of March she noticed a slight swelling in the region of the stomach, rather to the left of the median line. The swelling increased to the size of a small cocoanut. The pain seems to have been not excessive, though the patient appears to have taken much morphia. There was constant *malaise*, loss of appetite, dimness of vision, and morning headache with some constipation.

About the 1st of May the tumor entirely disappeared. The relief was temporary. The swelling returned slowly, and on the 1st of July, appeared to be two to three times the size of a child's head.

During these last three months, also, the uterine disturbances returned, and when admitted to St. Margaret's Home, the patient was suffering from a profuse hæmorrhage. Small doses of ergot and iron controlled the flowing after a few days, and the pelvic disorders were, for the time being, disregarded, an examination of the uterus and annexa showing no material change from the conditions existing nearly a year previously, except that the uterus itself had become much diminished in size.

The woman's general appearance was at no time bad, and there seemed to have been no great loss of flesh. Restlessness, lack of appetite and constipation besides genuine acute epigastric distress, were alone the noticeable symptoms.

In the upper part of the abdomen was a tumor centred about three inches to the right of and above the umbilicus, egg-shaped, eight and one-half inches long by five inches at greatest appreciable breadth, smooth, movable, tense, not adherent to the skin, fluctuant, not tender or painful on moderate pressure. The patient had at no time been jaundiced, the stools had been normal in appearance, the urine was not in any way abnormal. The liver was apparently crowded slightly upwards, but not enlarged. There was no increase in the area of stomachic tympany, nor had the symptoms for several months pointed to a gastric disturbance. The question of exact diagnosis could not be settled by any evidence so far obtained. Certainly the patient was suffering great pain and discomfort from a cystic tumor of large size in the right hypochondrium and epigastrium.

An exploratory abdominal section was decided upon, and performed by Dr. Richardson, assisted by Dr. Mumford, July 28, 1891. The incision was made as if for cholecystotomy. The cyst, thin-walled, non-adherent, and but slightly vascular, was reached and tapped. One and one-half gallons of fluid, as described in Dr. Whitney's report, were drawn off. When this was withdrawn there remained a deposit of grayish-looking, greasy material, not unlike cheesy tubercular glands in appearance, lining the cyst wall.

The depths of the cyst were explored with the finger, which followed easily down behind the stomach, towards the left, to the middle of the pancreas, its broad pedicle being intimately associated with that organ. The operation was carried no further. Considering the feeble condition of the patient and the extensive attachment to so vital an organ, it would have been highly injudicious to have attempted enucleation of the cyst. Its walls were therefore stitched to the abdominal parietes, the cut in the cyst left open, and syphon drainage established.

The subsequent history of the case was uneventful. As in all similar conditions, the closing-in of the cyst cavity by granulation and adhesion was slow, but at the end of six weeks the patient went home well, except for a sinus which discharged daily about half a teacupful of clear fluid.

The long confinement in bed, together, perhaps, with tonic doses of ergot and iron, vastly improved the pelvic conditions. Two catamenial periods had been normal and painless, and the size of the uterus had sensibly decreased. Three months after the operation the wound had nearly healed, a slight sinus still persisting, and there was no return of symptoms.

Dr. Whitney's report was as follows:

"July 28, 1891. Fluid from the case of Mrs. B. There was said to have been withdrawn eight pints, by abdominal section.

"Thin, slightly opaque fluid with considerable pinkish sediment. Specific gravity, 1007; reaction alkaline; albumen one-fourth per cent.

"Microscopic examination showed normal red corpuscles; numerous leucocytes of varying shapes; a few larger cells with a distinct nucleus, nucleolus, and a clear protoplasm containing occasional oil drops. Small collections of oil drops (granular corpuscles) and numerous masses of thread-like filaments which did not stain with methyl blue on cover-glass preparations. These were determined by Drs. Fitz and Harrington to be crystals of stearine.

"The fluid emulsified fat, and changed cane sugar to grape sugar."

There is no question but that the safest method of treating cysts of this kind is by drainage, without making any attempt at enucleation. It is obviously very difficult to dissect out a cyst which is in most if not in all cases caused by a dilatation of the canal of Wirsung or some of its branches. In the case of cyst of the pancreas, previously reported by Dr. Richardson,[2] the sinus became completely closed at the end of about ten months. The immediate effect of the secretion upon the skin is an irritating one, but by care this may easily be avoided. The discomfort of a persistent sinus is therefore not great. Bearing in mind the dangers which would attend the rupture into the epigastrium of a tense cyst of whatever origin, it is quite imperative that such collections should be investigated by early exploration, and treated in accordance with existing conditions.

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[2] See Boston Medical and Surgical Journal, Vol. cxxiv, No. 5, p. 111.

NOTE.— January 23, 1892. Examination of Mrs. B. to-day, at her home in Holyoke, shows a vast improvement in her general condition. There still remains a sinus in the centre of the epigastric wound, kept open by a small piece of iodoform gauze, which discharges about half a teacupful a day. The fluid is perfectly clear. The skin is in good condition, having been protected by the use of oxide of zinc. The director goes in about two inches and a half. The abdomen is soft everywhere, and no tumor or swelling can be detected by physical examination. There seems to have been no diminution in the amount of discharge since the last report, three months ago. I advised removing the cotton in order to allow the sinus to heal, if possible. — M. H. R.

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Medical Progress.

RECENT PROGRESS IN THE PATHOLOGY OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

MUSCULAR DYSTROPHY.

To the opening numbers of the new *Deutsche Zeitschrift für Nervenheilkunde*, Erb[1] contributes the most exhaustive monograph that has yet appeared upon this subject. The clinical types of dystrophies generally recognized are the "juvenile" form of Erb, beginning in youth, occurring in families, affecting primarily the muscles of the shoulder and upper arm, and often associated with true or false hypertrophy; second, the ordinary pseudo-hypertrophy; third, the "infantile" facio-scapulo-humeral type of Duchenne, recently described by Landouzy and Déjerine, and discussed in these columns;[2] and, lastly, the "hereditary" form of Leyden, beginning usually in the legs. Erb has collected nearly ninety cases, and a number of autopsies and reports of examination of excised mussles. He maintains the essential unity of these four forms. In the juvenile and infantile forms there is often pseudo-hypertrophy; in pseudo-hypertrophy there is often atrophy of the shoulder muscles: in both forms the face may be subsequently involved, all forms may be hereditary, and in the hereditary form the shoulder muscles may be involved. All forms agree in the characteristic attitude of the patient, the affection of certain muscles, the occurrence of hypertrophy and pseudo-hypertrophy, the absence of fibrillary twitchings, and the simple quantitative diminution of electrical irritability. One or two cases are reported in which there was reaction of degeneration, but Erb himself has never seen it. Furthermore, transition forms are not uncommon: in the juvenile form the face may be subsequently involved, as it may in pseudo-hypertrophy; the infantile form may show "juvenile" localization or pseudo-hypertrophy; pseudo-hypertrophy may have later a juvenile localization, and all may be hereditary. Finally, forms may occur which cannot easily be assigned to any one of these four types. Another argument in favor of unity is that in one and the same family several of these types may be found. From the harmony in all the essential clinical features, from the occurrence of transition forms, and from the occurrence of several forms in the same family, Erb therefore concludes that clinically these four forms are essentially one.

On the pathological side, Erb has collected the records of eighteen autopsies, and twenty-three examinations of excised muscles. He finds the characteristic changes to be hypertrophy of the muscular fibre, present in post-mortem examinations as well as in excised portions, and therefore not due, as Oppenheim and Siemerling have claimed, to the results of excision; atrophy of fibres; a change in the shape of the fibre, which loses its angles and becomes rounded; an increase of nuclei, with the presence of nuclei in the centre of fibres; a fissuring and division of the fibres; and the formation of vacuoles. These changes occur in various combinations, but it is impossible to make any anatomical distinction between the four forms. In all, for instance, hypertrophy and fissuring may be rare or frequent, and the fibres may be equal or may vary greatly in size. The interstitial tissue is usually increased in amount, and a deposit of fat is common in it. In general this proliferation of connective tissue and fatty infiltration is pronounced in pseudo-hypertrophy, but it is also observed in the other forms, and some of the muscles in pseudo-hypertrophy show it only in a slight degree. The complete autopsies show, as a rule, that the nervous system is intact. The muscular changes are the same in these cases as are found in the excised muscles. Erb concludes, therefore, that we do not find in the different forms of muscular dystrophy any essential and comprehensive distinction in the histological changes in the muscles, and that these types form one morbid entity, dystrophia muscularis progressiva.

In discussing the pathology he considers that the changes in the muscular fibre are primary and essential, and that the connective tissue changes are secondary, for changes in the muscle are often found alone, but changes confined to the connective tissue are never seen. The muscular changes are hypertrophy, atrophy, increase of nuclei, vacuole and fissure-formation. Hypertrophy is regarded as a distinct pathological lesion, not due to preparation for the microscope or to increased activity, and is probably the initial process, followed by atrophy; just as we find weakness the first symptom, followed by atrophy. The changes in the connective tissue, increase of nuclei and slight hyperplasia, followed, as the muscular fibres atrophy, by marked hyperplasia and lipomatosis, are secondary. The whole process cannot well be regarded as inflammatory. In spite of the absence of discoverable changes in the nervous system, and the present belief that the trouble is a primary myopathy, Erb is inclined to believe that the muscular changes are due to dynamic, as yet undiscoverable changes in the nerve centres; this opinion is based upon the heredity, the localization of the morbid process in definite muscles and nerve territories, and the coexistence of other nervous troubles, such as epilepsy and idiocy, and the occurrence of similar muscular changes in undoubted spinal disease.

THE PATHOLOGY OF FACIAL PARALYSIS.

Minkowski[3] has had an opportunity to make an autopsy on a patient who was recovering from typical "rheumatic" facial paralysis due to cold, and this autopsy contradicts the current belief that the paralysis is due to an inflammatory swelling of the connective tissue compressing the nerve in the Fallopian canal.

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[1] Deutsche Zeitschr. f. Nervenheilk., I., 13, 173, 1891.

[2] See this Journal, September 16, 1886.

[3] Berliner klin. Wochenschr., July 6, 1891.

No changes were found traceable to inflammatory processes in the neurilemma, the nerve was not adherent to the canal, there was no increase of the connective tissue or alteration in the vessels, and the perineurium was normal. From the geniculate ganglion outwards to the periphery the nerve fibres were found in a highly advanced state of degeneration, the degeneration being most marked toward the peripheral extremity of the nerve.

MULTIPLE NEURITIS.

Pal[4] has recently published a valuable monograph on this subject, giving a review of our knowledge, based on a very extensive bibliography, and a report of eight cases, four of which came to autopsy. In the enumeration of symptoms he notes that the knee-jerks are in rare cases exaggerated, that degenerative reaction may be found in nerves still performing their normal functions, that all forms of sensory disturbance including delayed conduction and double sensations, may be observed, that disturbances of the bladder and rectum and laryngeal and visceral crises may occur, and that the cranial nerves may be involved. His first case presented the picture of a rapidly developing paralysis, involving the ocular muscles, and attended with pain and nerve tenderness. The autopsy, beside peripheral neuritis, showed intense hyperæmia of the gray matter of the cord. The second case was of a subacute recurrent type, with paralysis, atrophy, pain on movements, œdema, and hyperæsthesia. The patient was tubercular and alcoholic. The autopsy showed pulmonary and intestinal tuberculosis, neuritis, and degeneration in Lissauer's tract in the lumbar cord, and in Goll's column in the cervical cord. The third case was also tubercular and alcoholic, with pain, weakness, œdema, diminished sensibility, normal electrical reactions, nerve tenderness and loss of reflexes. The autopsy showed neuritis and degeneration of Goll's columns and of the anterior peripheral portion of the anterior columns in the cervical cord. The fourth case was one of chronic lead-poisoning with optic neuritis, eclampsia, colic, paralysis of cranial nerves, ataxia, paresis, loss of knee-jerk and bed-sores. The autopsy showed neuritis, degeneration of the posterior roots and of Burdach's columns, and disseminated degenerations in the lateral and Goll's columns and the cerebellar tract. Pal disbelieves in Erb's hypothesis that neuritis is due to dynamic changes in the ganglion cells, for in his cases, with profound disturbances in the cord, the ganglion cells were intact. Individual portions of almost all the tracts of white matter in the cord were found affected, which renders it probable that the affection involves not only systems of fibres, but may be disseminated, and that the fibres of the conducting tract in the cord may be diseased in the same way as the fibres of the peripheral nerves. In tuberculosis we may find a latent neuritis characterized only by œdema and diminution of farado-cutaneous sensibility.

LANDRY'S PARALYSIS.

The pathology of this affection has recently been much discussed, and much doubt has been expressed as to whether it should be regarded as an independent affection. Ross[5] collected ninety-three cases, and although he admitted that in some cases no lesion could be found, he decided that Landry's paralysis was merely an acute form of multiple neuritis. Centanni[6] found acute interstitial neuritis in a case of Landry's paralysis due, as he thought, to a peculiar bacillus found in the endo-neural lymph spaces of the peripheral nerves. Nauwerck and Barth[7] report a case where the nerves of the cauda equina showed interstitial neuritis to a marked degree, with pronounced disappearance of the nerve fibres. The sciatic nerves and the nerve roots of the cord, especially in the lumbar region, were also involved. They conclude that a typical acute ascending paralysis, with slight sensory symptoms, without implication of the sphincters, and without electrical changes, may prove fatal, and no changes in the central or peripheral nervous system can be discovered. No sure proof has been offered that a typical clinical picture of acute ascending paralysis can be caused by any lesion of the central nervous system; but, if we include in the symptoms severe sensory symptoms, affections of the sphincters and electrical changes, such a condition may be caused by disease of the peripheral nerves. Hun[8] has recently reported a case which seems conclusive. A man of forty-five, gradually began to have stiffness of the legs, and heaviness of the feet. The muscular power and the knee-jerks were diminished. This weakness increased until the legs were wholly paralyzed and the arms began to be affected. Phonation and deglutition were also affected. Examination showed marked disturbance of speech and deglutition, left facial paralysis, great weakness of the arms and absolute paralysis of the legs, loss of reflexes, no muscular tenderness or atrophy, normal sensibility to pain, touch and temperature, normal electrical sensibility. Death followed in a few days from failure of respiration. The brain and cord were normal, a few of the larger and smaller veins in the spinal pia mater had their walls infiltrated with round cells, and in some instances the walls were thickened. No hyaline thrombosis, which Klebs[9] has regarded as a cause of the disease, was found in the spinal vessels. The anterior roots of the cauda equina showed degeneration in about one-tenth of the fibres. The other roots and the peripheral nerves were normal. No bacilli of any sort could be found. There was also a slight meningitis.

MORVAN'S DISEASE.

Charcot[10] has recently called attention to a rare affection first described by Morvan, a Breton physician, in 1883, and called by him, analgesic paresis with panaritium. The characteristic features of the disease are severe pains at the onset; paresis with analgesia, first on one side and then on the other, and panaritium. The paresis is associated with more or less atrophy of the hand and forearm, and analgesia develops later. There is also anæsthesia to touch and temperature, and Morvan claimed that the dissociation of sensibility seen in syringo-myelia — anæsthesia to pain and temperature and normal sensibility to touch — did not occur in this affection. Morvan[11] himself has since studied this point more carefully, finding tactile anæsthesia in every case. The affection is not uncommon in Brittany, Morvan having seen twenty cases in a population of 50,000, and it is commoner in men than in women. The panaritium is severe, leading to necrosis and incurable deformities of the hands. Morvan thinks there may be neuritis, but that that is subordinate to some disturbance in the spinal gray matter, and that there is never any cavity formation in the cord. Déjerine[12] shows that there may be pronounced neuritis in syringo-myelia, giving rise to tactile anæsthesia, and that syringo-myelia may rarely present a symptom complex identical with that of Morvan's disease, but, as Morvan has seen so many cases in a small district, while syringo-myelia is rare, he inclines to the belief that Morvan's disease is associated with some infectious cause, and is, perhaps, to be classed with the infectious or toxic neuritides. The question of the identity of the two affections, Morvan's disease and syringo-myelia, has been much discussed, and an autopsy by Joffroy and Achard[13] seems to throw some light on the subject, confirming Déjerine's position. A man of thirty had panaritium in both hands, with severe pains at first. Sensibility to touch, pain and temperature were diminished. Motion was impaired, but there was no atrophy. Kyphosis existed. The autopsy showed sclerosis of the posterior columns and a marked syringo-myelia, some muscular atrophy, and degenerative neuritis. The authors do not regard the dissociation of sensory disturbances as necessary symptoms of syringo-myelia, nor do they claim that syringo-myelia exists in every case of Morvan's disease; but it seems fair to assume that there is some lesion, not necessarily a cavity, in the same region of the cord in Morvan's disease as there is in syringo-myelia.

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[4] J. Pal: Ueber multiple Neuritis, Vienna, 1891.
[5] Medical Chronicle, November, 1889.
[6] Centralblatt f. klin. Med., November 13, 1889.
[7] Beiträge z. path. Anat. und z. allg. Pathologie, v, 3.
[8] New York Medical Journal, May 30, 1891.
[9] Deutsche med. Wochenschr., January 15, 1891.
[10] Progrés médical, 15, March 22, 1890.
[11] Gazette hebdom. de méd. et de chir., Nos. 35, 36, 1890.

CAISSON DISEASE.

Van Rensselaer,[14] in the Merritt H. Cash prize essay, has written a careful monograph on this subject, based on two cases, one with autopsy, and the recorded autopsies. He finds that the macroscopic lesions consist in congestion or softening of the cord, congestion of the brain, and congestion of the internal organs. Microscopic investigation shows that caisson disease is probably due to a lesion of the cord which attains its greatest intensity in the lower dorsal region, which attacks the white matter rather than the gray, and which is of a degenerative nature, or due to a diffuse parenchymatous myelitis. This degeneration is seen chiefly in the posterior and lateral columns, and the gray matter is usually unaffected; ascending and descending degenerations follow. Caisson disease he regards as due to congestion and malnutrition of the internal organs, especially the cord, and this congestion is due to paralysis of the vessel-walls from previous over-distention, and to a lack of *vis a tergo* of the blood-current, because the blood finds easier passage through the peripheral vessels, which had been partly emptied by the previous pressure. The exciting causes are long-continued pressure, great pressure, rapid removal of pressure, exhaustion and cold during removal of pressure, and possibly evolution of gas if the pressure be very suddenly removed, although he thinks the gaseous theory inadequate to explain the whole condition. The predisposing causes are obesity, old age, heart and kidney diseases, and lowered vitality.

(*To be continued.*)

A JOURNAL of pathology is about to be published at London, under the charge of Dr. Sims Woodhead.

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[12] Médecine mod., July 10, 1890.

[13] Arch. de méd. expér. et d'anatomie pathol., No. 4, 1890.

[14] Transactions New York State Medical Society, February, 1891.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

REGULAR meeting, Wednesday evening, December 2, 1891, DR. A. T. CABOT in the chair.

DR. GEORGE HAVEN read a paper on

RUPTURE OF THE UTERUS.[1]

DR. EDWARD REYNOLDS reported

TWO CASES OF RUPTURED UTERUS TREATED EXPECTANTLY.[2]

DISCUSSION.

DR. C. M. GREEN reported two cases of ruptured uterus treated without operation — both of which recovered. He said:

The first case was in 1886, in a non-pregnant uterus. The woman had had multiple fibroids of the uterus, the symptoms not being of sufficient gravity to warrant hysterectomy. At that time I do not think much was said about the electrical treatment; at any rate, it was not thought of at the time, and the plan was to dilate the uterus in the hope of finding and removing some simple intramural or sub-mucous growth, or to curette, in the hope of limiting the hæmorrhage. The patient was taken to a private hospital, and an attempt made to dilate the cervix in order to explore the interior with the finger. The steel dilator was used. During the dilatation I became rather tired and the dilator was temporarily taken in hand by another gentleman, who probably used more force than ought to have been used. At any rate, after beginning to explore the uterus the curette, which I introduced, practically disappeared. Then I took a long sponge holder and seized that with long dressing forceps, and that disappeared, so that there was no question about the fact of ruptured uterus. All further attempts at exploring or curetting were given up. I expected the patient would die then and there. There was a good deal of shock. A light tampon was put in the vagina, she was put to bed, and stimulants were used. She rallied after a time, and the next morning her temperature was a little over a hundred, but fell below a hundred that night, and the morning of the third day it was natural. There was no hæmorrhage at the time externally. She went on with normal temperature, but on the fourth and fifth days it was a little subnormal, on the evening of the fifth a little above a hundred, and the next morning normal. On the night of the seventh it was 102.5°, and from that point it gradually fell to normal. She made an entire recovery so far as the rupture went. The treatment was expectant. A report of the case may be found in Vol. XIII of the Transactions of the American Gynecological Society.

The other case was a puerperal rupture in 1888. The woman had a deformed pelvis, probably a small flat pelvis. She had been delivered once already by myself, with high forceps, the head having been engaged, and once before by somebody else. She was seen first by Dr. Edward Reynolds. The head was found high: occiput right posterior with extension: there was a deep laceration of the cervix down to the vaginal junction. Dr. Reynolds and I both realized the great danger of internal podalic version, and in consideration of the fact that the family was Roman Catholic, and the child living, and that we did not want to do craniotomy if possible to avoid it, we decided after some considerable trepidation, that we would undertake version and take our chances. As a result, the uterus was ruptured. It was not known that the rupture had occurred until it was sought to remove the placenta, and it was found there was no placenta in the uterus. It was found to have disappeared through a rent in the right wall of the uterus rather low down, and was found among the intestines, and removed through the rent.

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[1] See page 82 of the Journal.

[2] See page 80 of the Journal.

I wish to speak briefly in reference to the propriety of laparotomy in such cases. There are three great dangers after rupture — shock, hæmorrhage and sepsis. Of course, the septic danger comes later, but if a woman survives the primary shock and primary hæmorrhage, if she has one, there is one danger left to her it seems to me, and that is the danger from sepsis. Now, if men are aseptic, that danger ought to be entirely removed. If she has shock, that must be treated, and it seems to me it is rarely necessary for the patient to die from shock. Of course, they do sometimes. In the matter of hæmorrhage, if the hæmorrhage is severe, the patient may die before anything can be done: but if the hæmorrhage is slight, then there is time to make preparation for laparotomy to secure the bleeding points. In this case there was no hæmorrhage that could be detected. We concluded there was no internal bleeding. There remained the possibilities of sepsis. The uterus had firmly contracted, the rent closed, and we decided to wait. She had peritonitis, and was treated with opiates. I did not think there was sepsis at the time. It seemed like a traumatic peritonitis, localized. At the end of two weeks she was dismissed by the medical student who had the immediate care of the case. At the end of a month she said she was as well as ever. I will simply state the fact that after about two years she had another child, and she insisted on being delivered on the hands and knees so that the student was unable to say what the position of the child was. The child was born without assistance. I got there before the placenta came away, and thought I felt a cicatricial ridge along the right side of the uterus where the tear was. She made a good recovery.

As regards the treatment of obstetrical ruptures of the uterus, I stated in my paper upon this subject my own opinion at that time, and I do not think I have any reason to alter it.

Parvin, in the discussion of the report of my second case, said: "There is no treatment for ruptures of the uterus in childbirth, and the question to be settled is in what cases should the abdomen be opened, and in what simple drainage by the vagina can be relied upon; certainly, the results obtained by the latter in recent years are very encouraging. Probably the solution of the question is this, that where the tear is in such a position that vaginal drainage is perfect, the abdomen need not be opened; but if such drainage is impossible, or imperfect, then section is indicated."

It seems to me that that covers the subject well. If then, as Frommel found in some of his cases, that much detritus has not escaped into the abdominal cavity, if the child has not escaped there either wholly or in large part, and if a large amount of bleeding has not taken place making it necessary to clean out large quantities of blood-clots and tie bleeding points, it seems to me much can be expected from the treatment by vaginal drainage. If, on the other hand, as in Dr. Haven's case, or in most of the non-puerperal cases, there is sepsis, as unfortunately there is in many of them, then it seems to me there is nothing to be done but laparotomy, suture of the uterus and thorough flushing of the abdominal cavity; but I feel it is not to be taken as a foregone conclusion that because the uterus is ruptured therefore there must be laparotomy. Such cases will often recover without laparotomy, provided you can have good drainage.

Dr. M. H. Richardson: It seems to me that the most important point in both forms of ruptured uterus and in ruptures of abdominal viscera generally, is the matter of sepsis. I have always considered it very difficult to make the utero-vaginal canal perfectly aseptic. The dangers of septic infection are certainly great in abdominal hysterectomies, after the amputation of the uterus, where the uterine canal is exposed. I think the rules that have been laid down by Dr. Reynolds for the treatment of ruptured uterus, are very satisfactory. I do not agree with those who say that there is not considerable danger from shock in laparotomy. In my experience the danger is great in certain cases, proportional, perhaps, to the amount of exhaustion and anæmia present from the condition calling for the operation. In regard to drainage, I think that we have a most satisfactory form in vaginal hysterectomy. I saw the case Dr. Strong has reported. In this case there was a septic peritonitis of the fulminating and rapidly fatal variety, which might have been avoided had this woman received the proper drainage and aseptic care in the beginning. This might have been accomplished by the vaginal method. I have had no experience with rupture of the utero-vaginal canal into the abdominal cavity, except in one case where a woman sat down upon a glass syringe and made a hole in the posterior cul-de-sac. She recovered after suture.

In my opinion a general septic peritonitis from whatever cause, is essentially a fatal disease whether you treat it by laparotomy or salines or by any other method. I refer to those cases of rapidly-spreading peritonitis, accompanied by total peristaltic paralysis with continuous and uncontrollable vomiting, and my remarks in this connection apply to those cases in which I have opened the abdominal cavity before or after death, and have found physical evidence of septic general peritonitis. I have yet to see any case of this kind recover under any form of treatment, surgical or medical. In other cases with similar symptoms, where the diagnosis has been unverified either by operation or autopsy, I have met with the same disastrous results whether they have been treated by opium or by salines. I have seen such results in perforations of the stomach and intestines, appendicitis, and after laparotomies. In all there has been the same rapid progress to a fatal end, unchecked by any method of treatment whatsoever.

Dr. Haven: Dr. Reynolds spoke of statistics regarding ruptures treated by drainage and by laparotomy. He was, I think, particularly fortunate in the cases reported to-night. The statistics of all the cases I could find showed a mortality of about fifty per cent. when treated by drainage; on the contrary, Winckel had fourteen cases of rupture where he did laparotomy and four died. Besides that I have notes of eight cases with three deaths, in all twenty-two cases with seven deaths, or about sixty-six per cent. of recoveries.

Dr. Reynolds, I understood, would wait to see if hæmorrhage occurred after rupture. It seems to me that is a dangerous thing to do. The uterus is an erectile organ, and although it may be firmly contracted at one time, yet in the course of a half-hour or an hour it may be quite large and relaxed, permitting a short hæmorrhage to take place. You see this in the uterus after delivery, where it is hard and quite small at one time and a short time later quite relaxed.

As far as the treatment of septic peritonitis is concerned, I fully agree with him that the open treatment is the treatment *par excellence.* I have seen a number of cases among the out-patients of the Lying-in Hospital, and I have never yet seen a case that did not get well under salines and the open treatment, I do not doubt, however, that there are some where this treatment is of no avail.

In regard to Dr. Green's case, I think there is one thing to be considered, namely, the fibroids which were present; disturbing them might have caused a great deal of hæmorrhage, only to be controlled by total extirpation of the organ.

As far as the danger from sepsis is concerned, I do not think it is augmented at all by the escape of liquor amnii into the abdominal cavity. In the cases reported in which this occurred it made no difference. The escape of a macerated fœtus, on the other hand, was followed in almost every case by death.

One other thing that should be remembered is that the gut may come down through the tear and become gangrenous. This may take place several hours after the tear has occurred, and is one source of danger, which I think has not received due consideration.

I agree with Dr. Strong in regard to the fact that punctured wounds of the uterus do not call for laparotomy. I think such cases should be left entirely to nature.

Dr. Reynolds: I was a little surprised to hear two or three gentlemen speak of the cavity of the vagina and uterus as necessarily septic. My own experience with it obstetrically and surgically is that the vagina is about as readily cleansed as the abdominal wall. I think the fact that we are accustomed to expect asepsis in vaginal hysterectomy is good evidence of that fact.

In regard to one of Dr. Richardson's remarks, I should feel that in any case in which the drainage was not satisfactory that I should wish to open the abdomen for the treatment of septic peritonitis as soon as I felt that it was getting beyond the control of other means.

In response to Dr. Richardson's statement that he had never seen septic peritonitis, when once general and well underway, influenced by any form of treatment, I should like to speak of the most strongly illustrative case out of a good many that I have seen. I was called two or three years ago to one of the out-patients of the Lying-in Hospital, who had been by misunderstanding, neglected for about forty-eight hours after sepsis commenced. The interior of the uterus was septic, the woman lying on the bed with knees drawn up, abdomen tympanitic and swollen, vomiting constant, temperature 103° or 104°. I thought she was going to die without question. I curetted the uterus and directed the husband to give her a teaspoonful of Epsom salts in one-half tumblerful of water every two hours until the bowels moved. I called the next morning and found the woman lying flat in bed, and comfortable, pain gone, vomiting stopped, abdomen flat, etc. The husband said he had given her two teaspoonfuls every hour, and had counted the movements up to twenty, when he stopped.

As regards the statistics given by Dr. Haven, in which only five per cent. recovered without laparotomy, it is my impression that the statistics date back into the pre-aseptic period.

Dr. Haven: There has been no difference in the statistics in the two periods.

Dr. Reynolds: As regards the question of waiting to see whether hæmorrhage would occur, that is, whether reaction occurred or not, in the four cases I have seen, reaction occurred distinctly, there being no hæmorrhage, in fifteen or twenty minutes, and I do not think you would get ready to do laparotomy under an hour.

Dr. M. H. Richardson and **Dr. J. G. Mumford** reported a case of

CYST OF THE PANCREAS.[3]

Dr. Cushing asked whether any cyst fluid escaped into the abdominal cavity and whether there was any drainage.

Dr. Richardson: I think some must have escaped, but no considerable quantity. It was impossible entirely to prevent the escape of fluid. This was washed out by a superficial flushing. There was no drainage except of the cyst itself. In both cases the tumor was, to a certain extent, adherent to the transverse colon, so that the fluid did not escape freely into the abdominal cavity. It was impossible to prevent the escape of a small amount, however, but it did not seem to do any harm.

Dr. E. W. Cushing reported a case of

ABDOMINAL AND VAGINAL SECTION FOR UTERINE TUMOR.[4]

Dr. Cabot asked Dr. Cushing how he cleansed his hands after vaginal and before abdominal operation.

Dr. Cushing: With corrosive sublimate.

Dr. A. T. Cabot said that during the past summer he had been using peroxide of hydrogen in a fifteen volume solution quite extensively for the cleansing of his hands. He had found it especially useful in those cases where he was obliged to make a vaginal examination, and to follow it at once by a laparotomy. Cultures made from the hand by Dr. A. K. Stone seemed to show that the washing with peroxide of hydrogen added very considerably to the safety. This does not give any more thorough disinfection than washing with permanganate of potash in a saturated solution, and afterwards decolorizing the hands with oxalic acid; it has, however, the great advantage of being the quicker method, as the peroxide does not have any colorizing effect on the hands.

Dr. Cabot said that he was glad to hear Dr. Cushing speak of the importance of curetting and cauterizing fungous growths of the cervix in feeble persons, as a preliminary to vaginal hysterectomy, thus giving the patient a chance to pick up strength before the severer operation. He said he had followed this plan in several cases with a good deal of satisfaction, and found that the previous removal of the cervix did not add to the difficulty of the vaginal extirpation of the uterus.

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[3] See page 86 of the Journal.

[4] See page 85 of the Journal.

Dr. Cushing: I sometimes use creolin or naphthalin in connection with sublimate.

Dr. Reynolds: I should like to speak of my experience with creolin. When creolin is used in the vagina it dissolves the vaginal mucous so thoroughly that it leaves the vaginal wall macroscopically clean and accessible to the action of the corrosive, which, if used first, coagulates the mucus and leaves a layer of it over the vaginal wall. I take a gauze sponge soaked in creolin and scrub the vagina with it before an examination is made, and I think it not only saves dirt on the fingers but makes it possible to asepticize the vagina afterwards. It is in itself a good antiseptic.

Dr. Cushing then showed a compound antiseptic powder.

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AMERICAN ORTHOPÆDIC ASSOCIATION.

Washington, September 23, 1891.

DISCUSSION ON CONGENITAL DISLOCATION OF THE HIP, WITH NEW APPARATUS FOR ITS TREATMENT,[1]

by A. M. Phelps, M.D., of New York.

Dr. Henry Ling Taylor, of New York, said that there were at least two classes of congenital luxations at the hip, namely, those in which the luxation is produced at the time of labor, and those in which the condition is caused by an arrest of the growth of the acetabulum. He had had a case in which the luxation was unilateral, and in which there was a history of version and forcible delivery by traction on the luxated extremity. About six years ago he had presented to the New York Pathological Society a specimen of congenital dislocation which he had removed from a middle-aged man. In this case, not only were the acetabula shallow and narrow, but the entire pelvis was very light, and portions of the bones were as thin as an eggshell. Besides these, there was a fissure of the sacrum, giving additional evidence of the imperfect development of the whole pelvis.

Dr. N. M. Shaffer, of New York, had had two cases of unilateral congenital dislocation in children, which he had treated by the straight traction splint until the maximum amount of lengthening had been obtained, when a modified apparatus with a joint at the knee and a perineal support was employed. The best result had been obtained in a case which he had seen with Dr. Sands, and in which an attempt was made, under ether, to reduce the dislocation. After using considerable force this plan of reduction was found not to be feasible, but the manipulation produced, so to speak, an adhesive inflammation which was beneficial, and at the end of two years there was only about half an inch of shortening and a very firm joint.

Dr. Charles C. Foster, of Cambridge, said that the best recorded result had been obtained in the case treated by Dr. Brown. He had assisted in the treatment of that case, and could speak very positively of the great amount of faithful, patient work which had been required to bring about this result. The child belonged to a family a number of whose members had loose joints. The femur could be rubbed all over the pelvis, and there was an acetabulum so slight as to be almost inappreciable. The child was put to bed, and pressure applied to keep the bone in the acetabulum, and then by an arrangement of straps the limb was exercised in this position several times every day. As soon as there was evidence of deepening of the acetabulum, these exercises were modified. No splint was used at any time, but when the child was removed from bed it was placed in a sort of go-cart, supported on a saddle, so that it could be allowed very gradually to bear more and more weight upon the foot.

Dr. Samuel Ketch, of New York, said that about two years ago, he reported in Keating's *Encyclopædia of the Diseases of Children*, about fifty-six cases of congenital dislocation of various joints, discussing in succession the bearing upon this condition of heredity, parturition, location and treatment. Heredity did not appear to be an etiological factor. The vast majority of labors in these cases were absolutely normal, showing the fallacy of the old idea advocated by Mr. Brodhurst concerning parturition as a cause. In this collection of cases there were no anterior dislocations. He had been unable to determine whether these cases were examples of simple malformation or of lack of development. One case was very remarkable, inasmuch as it was an instance of congenital dislocation of almost every joint in the body. In this boy there were decided evidence of rickets. Regarding mechanical treatment, he was of the opinion that our chief aim should be to improve the gait, and secure a new position for the head of the bone giving greater length to the extremity. An ordinary long traction splint with the addition of a pad and surcingle to hold the head of the bone in position, will prove satisfactory in most cases.

Dr. Albert Hoffa, of Würzburg, said that the best that could be obtained by mechanical treatment was to pull down the head of the femur, and so improve the patient's gait. He thought the best results would be obtained by operation. The chief impediment to reduction is the shortening of the muscles running from the pelvis to the leg, owing to the trochanter major being nearer to the iliac crest than in the normal subject. The posterior leg muscles are also shortened. The reduction in adult cases is so difficult, that he would not advise attempting operative reduction in patients over eight or ten years of age. In children of from three to six years, the reduction is very easy. After cutting off the joint and separating all the soft parts from the upper end of the femur, it is very easy to pull down the femoral head until it is in the position of the old acetabulum. It is desirable next to enlarge this acetabulum. It has been said that it is impossible to do this, but by reference to the specimen exhibited by Dr. Phelps, it will be seen that the acetabulum is the thickest part of the pelvis, and there is no difficulty whatever in making a sufficiently deep acetabulum. In his first operations he used a periosteal flap which he sewed over the trochanter major, but subsequently he found that it was not necessary to make this flap, for, if the cavity be sufficiently deep, there is no danger of the head of the bone coming down. The chief feature of his operation consisted in saving the head, and thereby obtaining a healthy joint. His first operations were performed about two years ago, and about two months since he examined the first case and found a perfectly movable joint and the absence of the awkward gait characteristic of congenital dislocation. Even lordosis was absent. In all of his cases he had found a rudimentary acetabulum, which was triangular in shape. Some cases had been reported in France in which the site of the acetabulum was occupied by an exostosis, but no such condition had existed in any of his cases.

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[1] See page 77 of the Journal.

Dr. Howard Marsh, of England, called attention to the statement which had been made concerning the absence of any causal relation between these dislocations and heredity. He did not consider that this remark correctly represented the subject, for, many years ago, he had had a case of congenital dislocation of the hip brought to him whose mother also had the same condition with very free telescopic movement on the pelvic wall. The condition found in the child was exactly similar to that shown in the specimen just presented. The anterior position is the most favorable one because in these cases there is no lordosis, for the lordosis depends upon the extent to which the femur is displaced backward upon the walls of the pelvis. Congenital dislocations should be divided into (1) those in which the bone slips about on the walls of the pelvis, and (2) those in which it is fixed. In the majority of cases it is so fixed, and under these circumstances he did not think operative measures should be undertaken. Such measures were more properly applicable to cases where the head of the femur is high up and movable.

Dr. John Ridlon, of New York, had had an opportunity of seeing one of Dr. Phelps's cases. He had also had two cases of this condition in his own practice, and he desired to direct attention to the uselessness of mechanical treatment. Dr. Brown's case was a posterior one, and the result was good, and this was what might be expected. In his own first case, after the use of traction by the Taylor splint in bed for a year, until the shortening had been reduced, on placing the head of the bone over the acetabulum the entire limb was rotated inwards about ninety degrees. In the process of growth from birth to the age of eleven years, a distortion of the neck had occurred, and, therefore, simply replacing the bone only resulted in placing the feet at right angles — a worse condition than at the beginning. In these cases mechanical treatment is obviously of no benefit. He thought anterior dislocations more hopeless than posterior ones under mechanical treatment.

Dr. R. H. Sayre, of New York, had had a case of dislocation on the dorsum of the ilium. Here he had brought down the head on to the acetabulum, but it now had a tendency to become a pubic dislocation. He uses an instrument similar to the long traction splint, but with a joint at the pelvis, so that the head can, if desired, make movements at the hip-joint with the idea of assisting in creating a new acetabulum. He thought with Dr. Foster, that a grinding motion is an important factor in securing such a result, provided the head of the bone could be retained in the proper position. The iron ring in Dr. Phelps's apparatus he did not think would prove as good in practice as a strap, which could be removed from time to time. The cases in which the bone remained in a fixed position were best let alone.

Dr. E. H. Bradford, of Boston, referred to a case which he had reported on a previous occasion, in which he had been using a very light portable splint, which he desired to exhibit to the Association.

Dr. De Forest Willard, of Philadelphia, considered the movable cases the most hopeful ones for operation. In cases where there is slight movement, it is better to combine operative and mechanical treatment, beginning first with rather forcible attempts at reduction, in order to produce inflammation, and then making continuous horizontal traction, as well as employing systematic exercises with the idea of exciting sufficient inflammation to hold it in place. Lastly came the use of a retaining splint.

Dr. L. A. Weigel, of Rochester, during the past two years had seen three cases of congenital misplacement, two of them being unilateral, and in all of them, by simple traction upon the leg, the limb could be brought down to the normal length, and there was a perceptible play on striking the rudimentary acetabulum. In some cases the muscles on the affected side were rather imperfectly developed. He did not think that in old cases the shortening could be overcome.

Dr. Phelps, in closing the discussion, said, regarding the etiology, he had traced cases and had found that heredity appeared to play an important part. After his splint has been worn for a year the upper part of it is removed to allow of motion, and the patient walks upon it, discarding the crutches. The vast majority of the cases he believed were really dislocations *in utero* or at birth, with subsequent non-development of the acetabulum, and not congenital non-development of the acetabulum allowing of misplacement of the head of the femur, as has been taught and still is believed by a large portion of the profession. The pathological specimen presented appeared to confirm that idea.

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SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fourth Annual Meeting, held in Richmond, Va., November 10, 11 and 12, 1891.

FIRST DAY. — MORNING SESSION.

The Association convened in the hall of the Young Men's Christian Association, and was called to order by the President, **Dr. L. S. McMurtry**, of Louisville, Ky., at 10 A. M. Prayer was offered by the Rev. D. M. Hoge.

The first paper read was by **Dr. J. W. Long**, of Randleman, N. C., entitled,

ALBUMINURIA; ITS RELATION TO SURGICAL OPERATIONS.

He drew the following conclusions:

Neither ether nor chloroform injures healthy kidneys, as a rule. When renal disturbances from the use of an anæsthetic, the kidneys being healthy, do occur, they are due rather to prolonged narcosis, exposure of the patient, or perhaps to the combined influences of the operation and the anæsthetic. A mild degree of albuminuria or nephritis, especially if recent, is not a contraindication to the use of chloroform or ether. Even in the presence of advanced and extensive renal changes, an anæsthetic may be employed, provided the patient or family are advised of the additional risk. Of the two anæsthetics usually employed, it is yet a mooted question as to which is the safer so far as the kidneys are concerned, unless it be in obstetrical operations. While it is by no means the rule, profound functional disturbances and even organic lesions may be induced by an operation, apart from the influence of the anæsthetic. Such renal changes are due to reflex sympathetic action of sepsis, or both.

Operations in certain regions, notably the abdominal, genito-urinary, about the mouth and rectum, are specially liable to produce renal complications. A healthy condition of the kidneys, minimizes, but does not obviate, the danger referred to. Albuminuria is always indicative of renal lesions, and should be regarded with distrust; but it is not positive contraindication to an operation. When albuminuria is associated with other evidences of advanced renal changes, no operation should be undertaken without first candidly stating to the patient, or friends, the dangers incident to the condition of the kidneys. Paradoxical as it may seem, an operation will sometimes relieve an albuminuria due to acute affections. No surgeon is justified in undertaking an operation without first knowing the state of his patient's kidneys.

FIRST DAY. — AFTERNOON SESSION.

Dr. Joseph Price, of Philadelphia, Pa., read a paper on

COMPLICATIONS IN PELVIC SURGERY, AND HOW TO DEAL WITH THEM.

The author's reasons for choosing this subject were that the importance of recognizing the part that complications play in the work of the surgeon, are not appreciated by the generality of medical men, by general surgeons, and least of all, by the tyro in surgery, and by those who are anxious to begin their surgical investigations and trial-trips by an entrance into the domain of abdominal or pelvic surgery. The complications in this special branch of surgery are primarily those of surgery in general, with many things superadded to render them formidable. It may be the intention of the surgeon to remove the appendages for a bleeding fibroid. In ordinary operations the removal of the uterine appendages is to the skilled abdominal or pelvic surgeon one of the simplest of undertakings. If, however, he attempts to accomplish their removal, without holding in mind the complications that, as a rule, exist, or if he is a neophyte or an experimental dabbler, he will find too late in many cases, that he has attempted an operation that he cannot finish, or if he does complete it, he has also sacrificed his patient, or rendered her worse off than before. In other words, to accomplish a cure, he must abandon removal of the appendages and perform hysterectomy, which has but little in common with the operation originally proposed. If this idea is still further carried out, we shall find that complications do not confine themselves to one system of organs, but extend to all surrounding structures by reason of inflammatory adhesions. This is true of the bladder, ureters, intestine, omentum, stomach and liver. Adhesions are the bane of abdominal and pelvic surgery, and hence we see that the greatest mistakes and failures are made by those who, from a knowledge of abdominal surgery simply, have attempted to deal with pelvic inflammations. The abdominal surgeons who can be counted as really successful pelvic surgeons are therefore few. This is said with no intention of detracting from the importance of abdominal surgery. The strictly abdominal organs must always enter largely into the domain of surgery.

With regard to irrigation, we must get out of our heads the idea that it is dangerous. Very often in the writer's experience has hot water brought about a speedy reaction in patients whose lives were almost despaired of. We are told that cases do not need flushing, that they do badly under it. Dr. Price believes that they do need flushing if they are desperate cases, and if they do badly they do so, not on account of the flushing, but because of the operation that preceded it. Next, we have a resort in packing. Gauze packing accurately applied to the bleeding or oozing surfaces, so that it can be removed without interfering with the otherwise completed operation, is of infinite value in hæmorrhage. It can be suffered to remain indefinitely almost, broadly speaking; at least, up to sixty or seventy hours, if absolutely clean and fresh, either salicylated or iodoformized. The drainage tube controls hæmorrhage. The drainage-tube is currently spoken of as if it were an annex to pelvic surgery, easily dispensed with. The writer uses it almost without exception in adhesions. His results are better than those obtained without its use.

The plea of the paper was for absolutely exact, painstaking work that shall leave nothing for regret, nothing to do over, nothing to explain, but shall stand out in the light of results as justifiable, scientific and perfect when put beside methods that palliate without curing, and are no more a part of real surgery than is hypnotism refreshing sleep.

Dr. Cornelius Kollock, of Cheraw, S. C., read a paper entitled,

OVARIAN CYSTS, WITH THE REPORT OF A CASE OF OVARIOTOMY IN A YOUNG GIRL.

He said the causes of ovarian cyst seemed to be still a question *sub judice* in the minds of those who are the most progressive and who have made the greatest advancement in the science of gynecology. Various theories have been put forth by those of larger experience, who are earnest seekers after truth, and who are patient investigators of all unnatural and morbid phenomena. But no satisfactory decision has been obtained from all the patient and searching investigation that has been made as to the cause of this singular, unaccountable and sometimes fatal neoplasm, characterized by histological diversity from the viscus of which it is a production. Some of the theories seemed, at a glance, to be plausible, but upon close study we find they will not bear inspection.

Miss C. L. H., was eleven years, eight months, and nineteen days old; general health perfect in every particular. Menstruation first appeared about two months before she was eleven years of age, and continued with perfect regularity, never excessive or scant, nor was it accompanied by the slightest pain. Her physique was fine in every way. Though less than twelve years of age, she weighed 135 pounds; was strong and active. Her breasts are full and large as those of a woman at thirty-five. She was very handsome, had a fine voice and sang beautifully. She was very intellectual, and stood at the head in all her classes in a large high school. I saw her for the first time on the 9th of January, 1891. The abdomen was greatly distended, but facies ovariana was not very pronounced. I was confident she had an ovarian cyst, and I rather suspected she had two. On the 6th of January I made a section about three inches below the umbilicus, and removed a cyst from each side, the one on the left weighing twelve pounds, and that on the right seven pounds. A more prompt and complete recovery the writer had never seen from the simplest operation. Union by first intention took place, and the sutures (silver wire) were removed at the end of the seventh day. In twelve days she was up and about her room, and on the twenty-third day after the operation returned to her home, a distance of 200 miles.

It is now ten months since double ovariotomy was done on this young girl, and there has not been the slightest discharge from her of any kind. At each menstrual period, there was considerable commotion in the pelvic region, attended with some uneasiness in the head and back; but at each period these symptoms decreased, and the last two were accompanied by no pain whatever. The remarkable physical development in this case still continues. It is now ten months since the operation. She has gained six pounds in weight, weighing 141 pounds, and looks better than before she underwent ovariotomy. This young girl came from the purest and healthiest stock of people in this region. Not an individual on either side was ever known to have any constitutional trouble of any kind. Her mother and family physician say they never knew her to be the least indisposed in any way.

SECOND DAY.

Dr. William Warren Potter, of Buffalo, N. Y., read a paper entitled,

A MEDICO-LEGAL ASPECT TO PELVIC INFLAMMATION,

in which he said that pelvic inflammations in women have been described, discussed and debated from almost every point of view imaginable, until our periodical medical literature is flooded with articles on the subject, and medical society transactions are teeming and bristling with papers pertaining thereto. So far, however, he had not observed that any one had undertaken to discuss these intra-pelvic conditions from a medico-legal standpoint. It was his purpose to present that aspect of the question, taking for his text a case that developed an interesting problem in that respect.

After giving a history of the case, Dr. Potter emphasized the following points:

(1) The intimate anatomical relations between the pelvic organs and the larger joints of the lower extremities, especially the hip and knee joints; render them liable to reflexes.

(2) The importance of careful diagnosis at the outset lest grave errors, and possible disastrous consequences may result from treatment.

(3) The medico-legal bearing that errors of judgment in diagnosis and treatment may have in relation to the patient, as well as upon the reputation of the physician.

THE MEDICO-LEGAL ASPECT OF INTESTINAL SURGERY.

Dr. John D. S. Davis, of Birmingham, Ala., read a paper on this subject. He said many physicians and surgeons who condemn all mechanical aids for intestinal repair, know not how to use them; never saw them used; refuse to indorse a resection for gunshot or stab wounds; have been known to go in the witness-box for purposes of condemnation and disapproval when they knew no more about intestinal surgery than a wild Indian about school-teaching.

In this day of specialties in medicine, but few general surgeons have either the appreciation, opportunity or disposition to qualify themselves as expert operators in intestinal surgery; but many — to the discredit of the profession — voluntarily appear in the criminal courts of the country pretending to be such, wise and proficient. One of the greatest professional sins of the day is perverted knowledge of conceited ignorance. It is too often that physicians and surgeons weaken and invalidate their opinions to a greater or less degree by unscrupulous interest in behalf of those employing them, a fact cunningly turned to advantage for defendants in criminal prosecution, and for like reason may become dangerous to the operators they oppose and envy. To be able to do a laparotomy for stab or gunshot wounds of the intestines, inflicted by one with murderous intent and be able to evade civil and criminal liability, the operator must be able to show evidence of ordinary surgical knowledge in the requirement of the special operation to be performed; he must possess ordinary surgical ability for doing the special operation to be performed; he must exercise ordinary prudence in performing the special operation to be done, as to time, place, antiseptics, asepsis, assistance, nurses, and after-treatment; he must perform the special operation in an ordinary skilful manner. Hence, to prevent confusion, it will be well, if possible, to determine what constitutes ordinary surgical knowledge, ability, prudence and skill. Upon these depend the whole medico-legal status of the intestinal surgeon, and upon which the expert should be required to depend also. According to the practices and rulings of courts in this country, the word ordinary, in its surgical adjectiveness, means that the surgeon shall be capable of and exercise that surgical knowledge, ability, prudence, and skill with which a fair proportion of the surgeons of his given locality are endowed, and not that of the highest lights of his profession.

The President, **Dr. L. S. McMurtry**, of Louisville, Ky., delivered the annual address, taking for his subject

A PLEA FOR PROGRESSIVE SURGERY.

He said within fifteen years the entire practice of surgery has been revolutionized. New methods have been introduced and new regions invaded. Comparatively recent teachings have become obsolete in practice and modern treatises recast. The science and art of gynecology, which a few years since was limited to a small and narrow field, has grown into a great branch of medical science and practice. Formerly divided between midwifery and surgery, as a minor branch of one or both, gynecology has become an independent and essential department of the healing art.

When Marion Sims announced, through the columns of the *British Medical Journal*, that he believed the proper course of treatment in every case of gunshot wound of the abdomen is to open the abdomen, search for the bleeding points and secure them, and suture intestinal perforations, he was pronounced by many eminent surgeons to be a dreamer. The suggestion of Sims was most timely, and shortly afterwards Bull successfully executed the operation. For years the treatment of opium in full doses had been pursued, with death in waiting. Now there is scarcely a State in the Union in which one or more patients have not been rescued from certain death by prompt resort to operative treatment. He mentioned these circumstances to illustrate and emphasize the point that surgery is advanced more by the aggressiveness of the surgeon than by timidity. In the face of desperate conditions of disease and injury, where there can be no safety whatever in delay and palliation, the only treatment worthy of consideration is the aggressive course which promises success. Under such conditions the most heroic surgery is conservative, and any other course is not conservative.

Dr. Joseph Taber Johnson, of Washington, D. C., followed with a paper on

THE GROWTH OF FIBROID TUMORS OF THE UTERUS AFTER THE MENOPAUSE.

He said the object of the paper was to put on record cases and opinions in opposition to a common view of this important subject, and to aid in recasting our views and in modifying our practice.

He had within the past five years seen at least a dozen women with large growing and troublesome fibroid tumors of the uterus, who were over fifty years of age; some of them over sixty. These women had been assured by their physicians, that, if they could get along somehow until after the change of life, their tumors would not only stop growing, but they would lessen in size, and probably go away altogether; at least, the troublesome and dangerous symptoms would disappear. They had been advised against any radical operation, and encouraged to believe that as they grew older, they would get entirely well. In perhaps the majority of cases this might prove to be very good advice; but the point which the author wishes to make is, that as we are now better acquainted with the history and behavior of these tumors, that this is no longer safe advice to give. We cannot assure any woman that her tumor may not prove to be one of the exceptional cases, and that it may not grow more rapidly after the menopause than it did before, or that it may not present complications equally distressing and disastrous. When from forty to fifty per cent. of women subjected to supra-vaginal hysterectomy died from the effects of the operation, this was very safe and conservative counsel to follow. The possible dangers of the tumor were not equal to the probable dangers of the operation.

The "rule" stated in the text-books that uterine fibromata cease to grow after the menopause, has many more exceptions than is generally supposed. When they continue to grow after the menopause, they pursue a more disastrous course than before. They more frequently become cystic, calcareous or have abscesses develop in them. These conditions, requiring operation according to well-known rules of surgery, the patients are in a less favorable condition for recovery than before the menopause. If the above conclusions are admitted to be true, it must follow that they furnish additional indications for more frequent and early resort to the radical operation. In the hands of the best operators in cases where a pedicle can be secured, the mortality of supra-vaginal hysterectomy is rapidly approaching that of ovariotomy.

Dr. C. A. L. Reed, of Cincinnati, O., read a paper on

THE SURGICAL TREATMENT OF ANTERIOR DISPLACEMENTS OF THE UTERUS.

Anterior displacements of the uterus, when they exist to the pathological degree, are the opprobria of gynecology. It is indeed true that many wombs lean far forward without inducing symptoms, but it is likewise true that many of them that are thus malposed do entail symptoms, objective and subjective, that frequently baffle our resources. It is a misfortune, too, that many of all the displacements to which the womb is liable, those in which the organ deviates anteriorly to the normal axis, are vastly the more prevalent. Thus, in an aggregate of 494 cases by Nonat, Meadows, Scanzoni, Valleix and Hewitt, quoted by Thomas and Mundé, there were 294 ante-flexions, and 180 retro-flexions; while Mundé himself reports 294 ante-flexions, 33 retro-flexions and 10 latero-flexions in a total of 337 cases. As the latter authority is disposed to look upon ante-flexions in their minor stages as a physiological (even congenital) condition, it is legitimate to infer that his statistics are based upon observations of displacements in the pathological degree. The conclusion is forced upon us, then, that of all the displacements of the uterus, those of the anterior variety are more frequent; while the records of practice will force us, likewise, to the conclusion that of all the womb displacements those of the anterior variety are less amenable to treatment than are any of the others.

In the treatment, the term *surgical* is employed in contradistinction to any method of treatment by pessaries, tamponnade or electricity. It may be premised that all surgical methods devised for the relief of these conditions should be directed, first, to the removal, when practicable, of the causes of the diseased conditions proper, and finally, to the readjustment of the diseased organs to the normal physical forces of the pelvis.

In conclusion, the author desired the Association to consider:

(1) The etiological relationship of contracture of the utero-sacral ligaments to ante-flexion.

(2) The possibility of overcoming this condition by such conservative measures as rest, pelvic depletion and appropriate manipulations.

(3) The feasibility of removing the obstructive dysmenorrhea and the sterility usually incident to these cases by the plastic operation which he had described.

(4) The inexpediency of forcible dilatation for the relief of these cases, and its inability to effect a permanent cure.

THE PART THE SHOULDERS PLAY IN PRODUCING LACERATION OF THE PERINEUM, WITH SUGGESTIONS FOR ITS PREVENTION.

This was the title of a paper read by Dr. W. D. Haggard, of Nashville, Tennessee, in which he made the following suggestions:

The patient should occupy the left lateral decubitus, at least during the second stage of labor. Overcome rigidity of the vulvar outlet by the judicious use of chloroform. The presenting part of the child should be supported and not the perineum, during the passage of the head and shoulders. Support the head by pressing it well up under the symphysis pubis, by placing the right thumb in the rectum and fingers of right hand extended over the occiput. To retard the exit of the shoulders, pressure should be applied to the trunk and shoulder by placing the index and middle finger of the left hand in the rectum, with the thumb in the vagina to restrain its exit. Support the head and neck by pressure well over the symphysis pubis.

(To be continued.)

A Pharmaceutical Congress. — The World's Congress Auxiliary has issued the prospectus of a pharmaceutical congress, in which it invites all pharmaceutical societies and workers throughout the world to participate, to be held in Chicago, in May or June, 1893. It is suggested that the regular meetings of all pharmaceutical associations and societies be held in connection with this congress.

Recent Literature.

A Clinical Text-Book of Medical Diagnosis for Physicians and Students, Based on the Most Recent Methods of Examination. By OSWALD VIERORDT, M.D., Professor of Medicine at the University of Heidelberg. Authorized Translation, from the Second Improved and Enlarged German Edition, with Additions, by FRANCIS H. STUART, A.M., M.D. With one hundred and seventy-eight illustrations. Philadelphia: W. B. Saunders. 1891.

This book, the first German edition of which was published in 1888, was undertaken by the author as the result of the experience of more than four years of work as teacher of diagnosis in the medical clinic at the University of Leipsic.

The second edition gives the latest methods for examination of the contents of the stomach and of the organs of sense. In teaching the use of instruments and methods of precision, the author, we are glad to note, does not omit to urge the importance of the simple use of the senses, and of individualizing each case.

The book is an excellent one, and fills well a place hitherto unoccupied among medical publications in English. The translator's and the publisher's work is well done.

Zeitschrift für Orthopædische Chirurgie. Stuttgart: Ferdinand Enke.

In welcoming a new magazine, it is customary to state, by way of introduction, the need of such a publication; and in fact there have been but few journals devoted exclusively to orthopedic surgery, and this, we think, is the first to appear in Germany. Under the able editorship of Dr. Albert Hoffa, of Würzburg, it is to be expected that this magazine will have a brilliant future, and certainly, if we can judge from the opening number, it will fill a useful place. It begins with an article by Lorenz on the treatment of lateral curvature, which is both original and of value. This is followed by several articles of interest, among them, one by Hoffa, describing a new and original means of correction of deformity of rotation in lateral curvature. For details the reader will have to be referred to the article itself.

In the introductory notice of the editor as a preface to his journal, Dr. Hoffa frankly states his opinion in regard to the position of orthopedic surgery as a specialty; a subject which, as is the case with all new specialties, has given rise to some discussion. He is quite positive in the belief that orthopedic surgery, if restricted entirely to mechanical appliances, will not be destined to a brilliant future, and, in fact, is bound to degenerate, as it has hitherto done in the hands of previous orthopedic surgeons of the past generation who limited themselves to a narrow interpretation of their specialties. In fact, Hoffa is of the opinion that orthopedic surgery would not exist if it were not for the impulse given to it by Delpech, who first added to it operative measures of tenotomy. At the present time when this specialty has been reinforced by new operative procedures which require special skill and experience, the branch deserves renewed attention; but attention should be paid by those who are thoroughly schooled surgeons before they have devoted themselves to a special branch. The magazine is one which, if it maintains the standard of its first number, will be of great service in the medical world.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JANUARY 28, 1892.

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THE NERVOUS AND MENTAL PHENOMENA AND SEQUELÆ OF INFLUENZA.

IT has long been recognized that the poison of influenza in a large class of cases manifests its effects upon the patient especially by its influence upon the nervous system. Whether the cardio-pulmonary and digestive disturbances are due directly to functional or more serious derangements of the pneumogastric and vasomotor systems, whether cerebro-spinal meningitis, for instance, is simply a malignant form of influenza, is a fair subject for speculation; but that there is a class of cases in which the primary and secondary effects of the poison are felt by the nervous system, as manifested by pain and sensitiveness in various parts, by headache, and by disturbances of cerebration, there can be no doubt.

Dr. Charles K. Mills, of Philadelphia, has brought up the subject in a recent paper before the Philadelphia County Medical Society.[1] He bases his consideration of it upon the broad ground, that all diseases of infectious or toxic origin — epidemic, endemic, sporadic or accidental — may strike any or all parts of the nervous system with a result which will be proportionate: first, to the virulence of the infecting agent; and, second, to the resistance of the individual, whether this is due to constitutional predisposition or to the result of previous injury or disease. The microbes may differ, but a bond of union and close resemblance can be recognized between the effects on the nervous system of all contagious and infectious diseases.

In all these affections at the time of acute onset, if the illness is of a serious character, such symptoms are present as great mental and nervous debility, irritability, restlessness, sleeplessness, or the opposite states of torpor, stupor, hebetude, or coma; delirium; vertigo or syncope; headache, browache, napeache, backache and limbache; pains of all degrees of severity referred to various nerve areas; hyperæsthesia of the skin, of muscle-masses, or confined to nerve-trunks or branches; spasms, local or general, and with or without unconsciousness; sometimes mental disturbance amounting to true mania or melancholia. During the progress of such affections any one or several of these enumerated symptoms may be present. Supra-orbital pain, for example, may be the only prominent nervous symptom in a case of influenza; headache and backache in diphtheria; hyperæsthesia in mumps, diabetes, or gout; and mania in a case of puerperal infection. Any infectious or toxic disease may, in brief, produce the same symptom, syndrome, or train of phenomena; and — which is the main point — for the same reason, namely, because of the introduction into the system of an agent which directly and powerfully poisons nerve-centres, and possibly also nervous conducting tissues.

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[1] January 13, 1892.

Following all infectious, diathetic, or toxic diseases, moreover, or directly springing from them, common experience teaches that we may have great nervous or general weakness; forms of insanity of the depressive type; paresis and paralysis of every grade from an affection of a single muscle to that of all the extremities, and even more; localized spasm or cramp; general convulsions; pains in the nerves, muscles, and joints; and losses or perversions of sensation.

These symptoms and conditions, which may occur at the onset, during or after the subsidence of any infectious or toxic disease, are those which constitute the nervous features of the prevailing epidemic.

Dr. Mills then asks: How is the nervous system affected by influenza? What are its primary or direct effects on the nervous system, and what are some of the more persistent and permanent impairments, and how are these determined by the disease? What are its acute nervous and mental phenomena, and what are the most common sequences? What is the probable pathology of these states, and what treatment is best in view of the neurotic characteristics of the affection?

Acknowledging the great difficulties attending any attempt to classify the nervous and mental phenomena of influenza, he recognizes, firstly, symptoms and conditions which, although manifested in non-nervous organs, are directly traceable to a nervous origin; secondly, affections which would be recognized by all as properly referred to the nervous system; and thirdly, affections occurring in nervous tissues and organs, although, strictly speaking, not nervous diseases.

Without stopping to discuss the possible nervous origin of the fever of influenza, or to explain the catarrh, indigestion, etc., on some neurotic theory, as leading him too far from his immediate subject, the author emphasizes the fact that some of the most prominent pulmonary, cardiac, and vascular affections of influenza can best be explained on neural theories, and inclines to the conclusion, which has been previously advocated by Graves and others, that the pneumonias of influenza are often due to vasomotor paralysis, that they are, in fact, forms of blood stasis or passive congestion from vasomotor paralysis, which in its turn is dependent upon the action of the infection upon the pneumogastric centres and the nervous system in general. Many disorders in various parts of the body are, he thinks, best explained on this theory of local vasomotor paralysis.

The peculiar forms of pulse, and the uncertain or perverted action of the heart, extending in some cases to cardiac palsy and death, are in a strict sense nervous phenomena due to paralysis, partial or complete, of the inhibitory apparatus of the heart.

Of those symptoms and affections which would clearly be recognized as belonging to the nervous system, great nervous and mental prostration, both as an acute manifestation and as a persisting sequel, has engaged the attention and required the treatment of all practitioners. The mental depression often present as an initial symptom has been, in some cases, simply overpowering. Some of the patients are affected like individuals whose mental and motor centres have been poisoned to the limits of human endurance, while still permitting the retention of consciousness. In other cases even consciousness itself has been overwhelmed.

Dr. Mills finds that not a few patients who suffered from attacks of influenza during the early period of the present epidemic are still victims of profound neurasthenia, and this in cases which are not distinctively of the melancholic type. These neurasthenics are unable to endure a fair amount of work; their nervous forces are soon routed; they are weak, worrisome and unrecuperative. The cardiac weakness which has been left is undoubtedly, he thinks, in part the cause of this neurasthenia.

Among organic nervous diseases which have developed during the influenza or have been left in its wake, are in the order of their frequency, so far as Dr. Mills's personal observation has gone, neuritis, meningitis, myelitis and cerebritis, or various combinations of these inflammatory affections, as, for example, concurrent neuritis and myelitis, meningo-myelitis, or meningo-encephalitis.

He thinks that probably no single affection of the nervous system has been so common during and after influenza and particularly as a sequel of the disorder, as neuritis. Almost every variety of neuritis as regards location and diffusion has been recorded. Multiple neuritis, while not common, has not been rare. Isolated neuritis of almost every cranial nerve has been recorded, with such resulting conditions as optic atrophy, loss of smell and of taste, ophthalmoplegias, both internal and external; oculo-motor, facial, and bulbar or pseudo-bulbar palsies of various types, including true pneumogastric paralysis. Of the forms of local neuritis most common the supra-orbital, intercostal, sciatic and plantar might be mentioned.

The articular pain and other so-called rheumatic manifestations so numerous during and after attacks of influenza are after all best explained on the theory of infectious neuritis or myositis.

Those cases with articular and other pains, and with swelling, recall, in some respects, the endemic or epidemic form of multiple neuritis known as beri-beri.

The neuralgias and neuritis should be distinguished.

Practically those cases should be regarded as neuralgic, in which pain is referred to certain nerve lines or radiations; but in which pain on pressure, and the other phenomena of neuritis, such as anæsthesia, vasomotor, and trophic disorders and even paralysis, are absent.

Of diseases of the spinal cord proper, occurring as complications or consequences of influenza, the reported cases are important but not numerous. A few cases of myelitis have been put on record by native and foreign observers — one is cited by Dr. Mills in which all four extremities were paralyzed.

That meningitis, either cerebral, spinal or cerebrospinal, occurs during the decline of the influenza, cannot be doubted in the light of the evidence which has been presented by various observers, and particularly during the epidemic of the last three years. It is, however, according to the writer, a comparatively rare concomitant or complication.

The reports of cases terminating fatally because of meningitis, must be received cautiously and sometimes incredulously. The form of meningitis most likely to be present in influenza is inflammation of the pia-arachnoid or soft membranes, now often designated lepto-meningitis. This affection *may* exist without pain. A genuine meningitis, sometimes of malignant type, may appear, however, during the progress or closely following influenza.

With reference to the relation between influenza and the psychoses, Dr. Mills quotes and indorses the following conclusions reached by Dr. Leledy:

> (1) Influenza, like other febrile affections, may establish a psychopathy. (2) Insanity may develop at various periods of the attack. (3) Influenza may induce any form of insanity. (4) No specific symptoms are manifested. (5) The rôle of influenza in the causation of insanity is a variable one. (6) Influenza may be a predisposing or exciting cause. (7) In all cases there is some acquired or inherited predisposition. (8) The insanity is the result of altered brain nutrition, possibly toxic. (9) The onset of the insanity is often sudden, and bears no relation to the severity of the attack of influenza. (10) The curability depends on general rather than on special conditions. (11) The insane are less disposed to influenza than are the sane. (12) In rare instances influenza has cured psychoses. (13) The insane may have mental remission during the influenza. (14) There is no special indication in treatment. (15) Influenza may lead to crimes and to medico-legal issues.

A delusional melancholia is the most frequent type, and this sometimes assumes the form of melancholia agitata.

In each year in Cook County, Illinois, the epidemic of influenza has been attended by an increase in the number of proceedings for the commitment of the insane, which Church believes cannot be explained by increase or movement of the population of the county.

The use in influenza of hypnotics, narcotics, sedatives and motor depressants, Dr. Mills regards as a question of particular interest in connection with the study of the nervous and mental phenomena of the disorder, and expresses a belief, with which we heartily agree, that the truth resides between the two extreme opinions — the one which vaunts such agents as panaceas against all manifestations of the disease, and the other, which considers any or all of these remedies — phenacetin for instance — as absurd and irrational in all cases.

In conclusion Dr. Mills says: The epidemic influenza has impaired the *morale* of the community. Lack of spirit in work, and an apprehensiveness with reference to health, business, and all matters of personal interest are abnormally prevalent. The hysterical have become more hysteric; the neurasthenical more neurasthenic. Hypochondria has displaced hopefulness in individuals commonly possessed of courage and fortitude. In brief, certain neuropathic and psychopathic features have been impressed upon the community. We cannot afford even to dismiss entirely from consideration the bearings of the epidemic upon the increase not only of suicides, but of other grave crimes.

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RESTRICTING THE DISTRIBUTION OF SCARLET FEVER.

EARLIER in the winter the town of Brookline suffered from an epidemic of scarlet fever, which was especially active among the school children. The Board of Health, in consultation with some of the prominent practitioners of the town, took the matter in hand, and, exercising the authority delegated to it by the Public Statutes of the State as interpreted by the State Board of Health, issued a circular of advice, with some orders appended which, in connection with the usual tendency of an epidemic to eventually wear itself out by exhausting the fresh supply of susceptible material, has been followed by good results.

The period of incubation is accepted by the circular as varying from several hours to three, or possibly four, weeks. The time at which children, from a house where there has been a case of this disease, may attend school or mingle with other children, is fixed by this Board of Health, in common with others in this State, at six weeks from the commencement of the last case in the house; and no child that has visited a house in which there was at the time a case of scarlet fever, shall attend school until the expiration of two weeks following exposure. Every house infected with scarlet fever shall be placarded by a card furnished by the Board. Infected rooms and articles shall be disinfected by the Board, or by the family to the satisfaction of the Board. Another order provides against public funerals.

The circular is a good one, both in its suggestions and in its orders, but it also illustrates the difficulty of dealing with the subject satisfactorily. The *summum bonum* cannot be enforced, and an approximation to the next best thing must be aimed at. In the matter of disinfection it is recommended that sulphur be used, but its application is to be preceded by scrubbing with a disinfectant and followed by the admission of fresh air and sunshine, measures which probably insure the efficiency of the sulphur fumes.

The period of six weeks from the commencement of the attack is probably as good an arbitrary period as any, if one must be fixed, for raising the quarantine of the individual. But the decision as to the moment when desquamation has ceased to be a source of danger, can really only be made with accuracy in each case separately, and even then is sometimes sufficiently perplexing, as those having hospital experience with the disease well know. The difficulties of enforcing everything, are no excuse, however, for not undertaking to do something, and the local Boards of Health deserve the cordial support of their communities in these efforts.

THE BACILLUS OF INFLUENZA.

It was announced on January 7th at Koch's Institute for Infectious Diseases at Berlin, that the micro-organism of influenza had been successfully proved and cultivated. Dr. Richard Pfeiffer, chief of the scientific section, had succeeded in demonstrating a bacillus which is found only in cases of influenza, and in making a pure culture from which the disease can be induced in apes and rabbits. The same bacillus had been seen and photographed by him two years ago, but its significance could not then be proved. The reasons that this micro-organism has so long escaped detection are its small size and the difficulty in staining and in making a pure culture of it. In the cases of influenza under observation this tiny bacillus was found in immense quantities in the bronchial secretion, in uncomplicated cases in pure culture; their number keeping equal pace with the course of the disease. The bacilli appear as small rods, about half the length of the bacillus of mouse septicæmia.

Dr. Pfeiffer had only succeeded in cultivating the germ to the second generation, but Kitasato has been able to reach the fifth generation on glycerine agar. The colonies are so small that they may easily be overlooked, and possess the peculiarity of remaining separate from each other, instead of running together as is the case with the colonies of other bacteria. The bacilli themselves are immovable.

The same bacillus was discovered independently by Dr. Canon at the Moabit Hospital, and reported at the same time. Instead of searching the bronchial secretion, the blood of patients with influenza was examined. He feels justified in asserting that the micro-organism is always found in the blood of patients with influenza, at least during the stage of fever, and that it is not found in the blood of other persons.

The only suggestion for prevention or treatment of the disease based upon the discovery of this bacillus is that the sputum of patients should be carefully disinfected.

MEDICAL NOTES.

The Medical Fortnightly is the title of a new bi-monthly magazine which appeared for the first time on January 1st. It is edited by Dr. Bransford Lewis and is published in St. Louis.

NEW ENGLAND.

Boston Lying-in Hospital. — During the past year 527 patients were cared for in the hospital. In the out-patient department, the number of patients was 735.

Death-rate in Boston. — During the past week twenty-five deaths were reported as due to influenza, but all except three were complicated with some other disease. The death-rate appears to be steadily diminishing. The total number of deaths was 258, a death-rate of 29.2. The deaths from consumption were 34, pneumonia, 55, bronchitis, 24. The number of persons over sixty years of age was 48.

Bequests to Public Institutions. — By the will of Anne W. Davis the sum of $15,000 is given in trust, after the expiration of a life interest, two thirds of the income to be paid to the Massachusetts General Hospital and one-third to the New England Hospital for Women and Children. The will of Mrs. Elizabeth B. Bowditch contains the following bequests: The Massachusetts General Hospital, $5,000; to establish or support a home for convalescents, $5,000; House of the Good Samaritan, $5,000; Children's Hospital, $3,000; Old Ladies' Home, $3,000.

NEW YORK.

Mortality for the Week.— During the week ending January 16th, the number of deaths reported in the city was 907, which is 25 less than the preceding week, and represents an annual death-rate of 27.70 per thousand of the estimated population. The deaths from influenza and complications were 20 less than in the week preceding, being 69 in number.

Small-pox. — Some eight or ten cases of small-pox have recently been discovered among the Italian residents of the city, and the disease appears to have been brought from Newark, N. J., where it is said to have gained considerable headway. All the patients found were transferred to the hospital for contagious diseases on North Brothers Island, but three cases are known to have been secreted by their friends, and on the night of January 22d, a party of sanitary inspectors and policemen, headed by Dr. Cyrus Edson, Chief of the Bureau of Contagious Diseases, made an unsuccessful hunt for them among the slums.

Miscellany.

BERI-BERI.

On account of occasional report of cases of beri-beri among the fisherman on the banks off the coast of Newfoundland, the following description of the disease, as observed by Mr. A. W. Sinclair, a residency surgeon on the Malay Peninsula may prove interesting. He believes that the term beri-beri was derived from the Sanscrit "bhara," a weight, the repetition being used simply to intensify the meaning of the word. Every patient affected with the disease describes the principal symptom as a weight in his chest, legs, or

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[1] Lancet, December 26th.

arms, as the case may be. Beri-beri appears in the Malay Peninsula both in the endemic and epidemic form. It principally attacks the Chinese coolies working in the tin mines, but it affects other nationalities also, and men, women and children.

In considering the etiology of the disease, the author adverts to poor living, bad clothing, poor accommodation, and exposure as among the principal causes of the disease. It seems that, in many cases at any rate, beri-beri is preceded by repeated attacks of fever, ending in swelling of the abdomen and legs. The disease commences with a feeling of malaise, followed by weakness and rheumatic pains in the joints, and a dull continuous pain in the stomach and in the knees, passing down into the feet, attended by a feeling of numbness and swelling of the parts, with œdema. Occasionally there is atrophy of the muscles of the legs, with loss of power, without any swelling, and in those cases the arms are often similarly affected. The pulse is generally soft and compressible. There is a thrill over the region of the heart, and hæmic murmurs and strong pulsations in the sternal notch are present. Knee and elbow jerks are usually absent. The peculiar gait is well marked, the foot being thrown forward with a jerk and raised considerably, the toes coming to the ground first. There is generally an inclination to fall on closing the eyes and bringing the feet together. As a rule, there is no loss of sensation; sometimes there may be aphasia. There is a feeling of suffocation on laying down. The patient may die soon after the attack, or linger on for five or six months — rarely longer; he commonly dies suddenly and in much pain, described as of a burning character, in the chest and abdomen.

The post-mortem appearances are mainly indicative of congestion and enlargement of the internal organs, with dropsical effusions, especially in the pericardium, and œdema of the lungs. In the post-mortem examination of 100 Chinese dying of the disease the anchylostoma duodenale was discovered in the intestines in eighty instances, and distoma crassum in one. The blood of 100 typical cases of beri-beri was examined without the discovery of any micro-organism. The blood discs were found to be pale and few in number. Mr. Sinclair mentions that he inadvertently inoculated himself on one occasion, with the result that some symptoms resembling those of an early stage of beri-beri followed, but they passed away in about a week. He considers beri-beri a contagious disease induced by some micro-organism. Albumen was not present in the urine, which was in a number of cases strongly acid. Malarial cachexia was evident in all the cases. Anthelmintics were useful where internal parasites were suspected, and tonics of iron and strychnia were beneficially employed.

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THERAPEUTIC NOTES.

Treatment of Goitre by Parenchymatous Injections of Iodoform. — Mosetig Von Moorhof treats goitre by hypodermic injections of one syringeful of the following solution:

℞ Iodoform	1 part.	
Ether Olive oil	āā 7 parts.	M.

The trocar of the syringe previously disinfected is plunged to a depth of two to three centimetres and the injection is thrown into the parenchyma of the thyroid body. The injections are repeated at intervals of from four to six days. When the gland is very large, two or three syringefuls of the medicinal solution are injected at different parts of the tumor, the venous trunks being avoided. The local reaction is very feeble. Kapper[1] has treated fourteen patients by these injections, with marked diminution, in every instance of the volume of the thyroid after from two to four months of treatment.

Zinc Glue for Stiff Surgical Dressings.[2] — Treutler recommends a preparation, first suggested by Unna, for obtaining stiff surgical dressings, such as are applied to fractured or dislocated limbs. It is as follows:

℞ Oxide of zinc	10 parts	
Gelatin	30 "	
Glycerin	30 "	
Water	30 "	M.

This is thickly applied and rubbed into the muslin or gauze forming the bandage. A thinner preparation contains twenty parts of gelatin and forty parts of water, the other ingredients remaining the same.

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Correspondence.

THE TREATMENT OF CHRONIC SPRAINS OF THE FINGER-JOINTS.

Boston, January 22, 1892.

Mr Editor: — By the Journal of the 21st instant I am pleased to learn that Dr. Lovett has met with considerable success in the treatment of chronic sprains of the finger-joints. Many such cases have been sent to me for massage by physicians; and I am sorry to say that I have had but little success; indeed, I fear that I have even made some of them worse by over-zealness attempts at passive motion. It is rather puzzling why chronic sprains of the finger-joints should prove more intractable to treatment than chronic sprains of some other joints. They have no weight to carry, as do the joints of the lower extremities, chronic as well as acute sprains of which generally do well under treatment by massage. The less the objective symptoms about a joint the harder it is to relieve pain, which in some cases is probably due to neuritis.

The subject of Dr. Lovett's paper is not one of recent acute sprains, still it may be allowable to speak of them here. Even severe cases of this class do remarkably well under immobilization and massage from the very first, once or twice daily, removing the fixed dressing for this purpose. Under this combined method of treatment there is generally free use of the joint in seven or eight days. The orthodox treatment of absolute immobility alone in these cases has little else to support it than the dogmatism of centuries, from which it is almost impossible for a surgeon to free himself unless he has been the unfortunate victim of a sprain and had it treated with massage, and immobilization if necessary. Supposing that any one wanted to make a well joint stiff, to what more effectual means could he resort than first to give it a wrench or sprain, then do it up in a fixed dressing, so that the resulting inflammation would have an opportunity to produce adhesion of the tissues? The same plan of treatment is employed for the purpose of closing up a hole, namely, that of exciting adhesive inflammation, and unfortunately it sometimes closes the cavity of a joint also. Massage in recent sprains speedily removes the heat, the pain, the swelling, and prevents the formation of adhesions. The mode of applying it I have frequently described.

Very truly yours,

Douglas Graham, M.D.

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[1] Deut. Med. Woch.

[2] Therapeutic Gazette, December.

METEOROLOGICAL RECORD,

For the week ending January 9, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 3	29.65	40	45	35	80	58	69	S.	S.W.	11	9	O.	C.	.58
M.. 4	29.59	26	31	22	62	67	65	W.	W.	16	20	C.	O.	
T . 5	29.73	26	33	20	73	59	66	W.	W.	11	12	F.	C.	
W 6	29.53	28	37	20	74	100	87	N.	N.W.	9	12	O.	R.	.50
T.. 7	29.65	30	33	26	77	61	69	S.W.	W.	13	9	C.	C.	.01
F.. 8	30.11	27	34	22	76	52	64	S.W.	S.W.	12	10	F.	C.	
S 9	30.32	30	37	23	68	73	70	S.	W.	7	7	O.	C.	.05
☞	29.79	30	36	24	73	69	70			11	11			.16

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, January 9, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	972	330	14.17	22.61	.35	.31	.54
Chicago . . .	1,099,850	617	231	12.12	18.40	2.08	14.40	5.12
Philadelphia .	1,046,964	653	172	13.20	11.40	2.25	.75	9.20
Brooklyn . .	806,343	494	160	12.20	29.60	2.60	.40	6.40
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	339	76	5.60	34.52	2.06	—	2.36
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	172	46	12.76	21.46	1.16	1.16	8.70
Cleveland . .	262,000	95	25	10.52	27.30	1.05	—	7.35
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	88	33	22.80	20.52	4.56	5.70	11.3
Milwaukee . .	240,000	109	52	32.20	12.98	8.28	.92	21.16
Washington .	230,392	132	43	11.40	31.92	—	2.28	3.04
Nashville . .	76,168	40	17	5.00	27.50	—	—	2.50
Charleston . .	65,165	38	11	5.26	15.78	—	2.63	—
Portland . . .	36,425	17	2	5.88	47.04	—	—	—
Worcester . .	84,655	64	18	9.36	29.64	—	—	9.36
Lowell . . .	77,696	64	20	13.04	23.40	1.56	6.24	—
Fall River . .	74,398	37	11	—	32.40	—	—	—
Cambridge . .	70,028	52	13	3.78	26.46	—	—	3.78
Lynn	55,727	38	5	5.26	36.82	—	—	—
Lawrence . .	44,654	33	11	9.09	15.15	—	—	3.03
Springfield . .	44,179	28	5	17.85	42.84	3.57	3.57	7.14
New Bedford .	40,733	30	9	—	13.33	—	—	—
Salem	30,801	23	5	—	30.45	—	—	—
Chelsea . . .	27,909	18	1	—	38.85	—	—	—
Haverhill . .	27,412	26	4	3.85	15.40	—	—	—
Taunton . . .	25,445	—	—	—	—	—	—	—
Gloucester . .	24,651	11	2	9.09	36.36	—	—	9.09
Newton . . .	24,379	16	0	—	18.75	—	—	—
Malden . . .	23,031	9	0	—	22.22	—	—	—
Fitchburg . .	22,037	14	3	—	21.42	—	—	—
Waltham . .	18,707	11	2	9.09	18.18	9.09	—	—
Pittsfield . .	17,281	9	1	—	—	—	—	—
Quincy . . .	16,723	10	3	20.00	10.00	—	—	20.00
Newburyport .	13,947	14	2	—	28.56	—	—	—
Medford . . .	11,079	5	2	20.00	40.00	—	—	20.00
Clinton . . .	10,424	—	—	—	—	—	—	—
Hyde Park . .	10,193	2	0	50.00	50.00	—	—	50.00
Peabody . . .	10,158	4	0	—	50.00	—	—	—

Deaths reported 4,284: under five years of age 1,315; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 615, acute lung diseases 1,052, consumption 417, diphtheria and croup 263, typhoid fever 117, scarlet fever 101, diarrhœal diseases 53, measles 24, whooping-cough 22, cerebro-spinal meningitis 17, erysipelas 14, malarial fever 4.

From diarrhœal diseases Chicago 17, New York 15, Philadelphia 5, Brooklyn 4, Cincinnati, Washington, Lowell and Lawrence 2 each, Milwaukee, Charleston, Haverhill and Hyde Park 1 each. From measles New York 16, Brooklyn 4, Chicago, Boston, Cincinnati and Milwaukee 1 each. From whooping-cough New York 8, Chicago 3, Brooklyn, Boston, Cleveland and Washington 2 each, Pittsburgh, Portland and New Bedford 1 each. From cerebro-spinal meningitis Chicago 7, New York and Washington 3 each, Lynn 2, Brooklyn and Lowell 1 each. From erysipelas New York 5, Chicago 4, Brooklyn, Boston, Washington, Nashville and Lowell 1 each. From malarial fever Brooklyn 2, New York and Philadelphia 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 10,010,426, for the week ending December 26th, the death-rate was 22.8. Deaths reported 4,16[illegible]: acute diseases of the respiratory organs (London) 553, measles 170, whooping-cough 167, scarlet fever 39, diphtheria 34, fever 26, diarrhœa 25.

The death-rates ranged from 13.2 in Leicester to 45.1 in Newcastle-on-Tyne; Birmingham 16.5, Cardiff 22.4, Hull 16.9, Leeds 24.2, Liverpool 28.1, London 21.9, Manchester 27.1, Nottingham 20.6, Salford 25.2, Sheffield 26.0.

In Edinburgh 25.5, Glasgow 27.1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending January 2d, the death-rate was 36.4. Deaths reported 5,672: acute diseases of the respiratory organs (London) 1,317, whooping-cough 273, measles 224, diarrhœa 52, diphtheria 48, influenza (London) 37, scarlet fever 36, fever 34.

The death-rates ranged from 19.4 in Halifax to 45.3 in Wolverhampton; Birmingham 29.1, Bradford 32.0, Hull 26.7, Leeds 35.5, Liecester 20.5, Liverpool 42.2, London 42.0, Manchester 35.6, Newcastle-on-Tyne 37.0, Nottingham 26.2, Sheffield 26.3, Sunderland 25.0.

In Edinburgh 22.9, Glasgow 29.4, Dublin 45.8.

RECORD OF MORTALITY

For the Week ending Saturday, January 16, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	907	339	14.85	22.33	4.51	.44	5.50
Chicago . . .	1,099,850	600	244	23.57	22.74	2.82	11.45	4.45
Philadelphia .	1,046,964	—	—	—	—	—	—	—
Brooklyn . .	806,343	465	152	14.08	27.50	2.64	.88	9.24
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	286	66	70.00	37.10	1.75	.35	3.50
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	146	46	18.36	14.28	2.04	4.08	9.52
Cleveland . .	262,000	122	42	17.22	22.14	—	.82	13.12
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	119	51	21.00	20.16	2.52	5.04	10.08
Milwaukee . .	240,000	102	46	28.42	13.72	3.92	5.88	16.66
Washington .	230,392	145	45	8.36	36.48	—	.76	.76
Nashville . .	76,168	32	8	15.65	6.26	—	3.13	6.26
Charleston . .	65,165	44	9	4.54	6.81	—	4.51	—
Portland . . .	36,425	27	4	3.70	25.20	—	—	—
Worcester . .	84,655	52	13	9.60	34.56	—	—	7.68
Lowell . . .	77,696	76	22	10.56	25.08	1.32	3.96	—
Fall River . .	74,398	50	12	4.00	36.00	—	—	—
Cambridge . .	70,028	33	9	15.15	21.21	3.03	3.03	6.06
Lynn	55,727	39	8	2.56	35.84	—	—	—
Lawrence . .	44,654	34	11	8.82	26.46	—	2.94	—
Springfield . .	44,179	33	3	3.03	30.30	—	—	3.03
New Bedford .	40,733	22	7	—	4.55	—	—	—
Salem	30,801	32	5	—	15.65	—	—	—
Chelsea . . .	27,909	24	—	12.48	41.58	—	4.16	8.32
Haverhill . .	27,412	15	1	6.66	6.66	—	6.66	—
Taunton . . .	25,445	25	3	—	[illegible]	—	—	—
Gloucester . .	24,651	9	3	—	11.11	—	—	—
Newton . . .	24,379	7	1	—	42.84	—	—	—
Malden . . .	23,031	20	5	5.00	15.00	—	—	—
Fitchburg . .	22,037	8	1	—	—	—	—	—
Waltham . .	18,707	10	2	—	20.00	—	—	—
Pittsfield . .	17,281	4	2	—	75.00	—	—	—
Quincy . . .	16,723	11	3	—	27.27	—	—	—
Newburyport .	13,947	17	2	11.76	35.28	—	—	5.88
Medford . . .	11,079	5	1	20.00	—	20.00	—	—
Clinton . . .	10,424	—	—	—	—	—	—	—
Hyde Park . .	10,193	5	2	20.00	40.00	—	—	—
Peabody . . .	10,158	6	0	—	66.66	—	—	—

Deaths reported 3,532: under five years of age 1,168; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 518, acute lung diseases 867, consumption 331, diphtheria and croup 201, typhoid fever 108, scarlet fever 88, diarrhœal diseases 44, whooping-cough 24, cerebro-spinal meningitis 20, measles 16, erysipelas 13, malarial fever 3.

From diarrhœal diseases Chicago 14, New York 11, Cincinnati 4, Brooklyn, Boston, Nashville and Fall River 2 each, Cleveland, Milwaukee, Washington, Worcester, Lowell, Cambridge and Lawrence 1 each. From whooping-cough New York 7, Chicago and Washington 4 each, Cleveland and Pittsburgh 2 each, Brooklyn, Milwaukee, Gloucester, Malden and Newburyport 1 each. From cerebro-spinal meningitis Chicago 6, New York and Washington 3 each, Brooklyn and Lowell 2 each, Boston, Portland, Lynn and Lawrence 1 each. From measles

New York 12, Chicago 3, Milwaukee 1. From erysipelas New York 4, Chicago 2, Brooklyn, Boston, Cleveland, Pittsburgh, Washington and Lowell 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending January 9th, the death-rate was 28.7. Deaths reported 5,612: acute diseases of the respiratory organs (London) 1,084, whooping-cough 248, measles 165, scarlet fever 44, diarrhœa 37, diphtheria 32, fever 23.

The death-rates ranged from 15.7 in Croydon to 43.7 in Newcastle-on-Tyne; Birmingham 18.8, Bradford 16.6, Bristol 24.7, Derby 27.1, Gateshead 27.1, Leeds 26.4, Liverpool 36.3, London 32.8, Manchester 24.0, Nottingham 19.9, Sheffield 25.2, West Ham 29.5.

METEOROLOGICAL RECORD,

For the week ending January 16, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...10	30.61	22	27	16	70	46	58	N.W.	N.	8	15	C.	O.	
M..11	30.59	23	26	20	86	94	90	N.	N.	24	16	N.	N.	.05
T..12	30.41	30	35	25	100	100	100	N.W.	N.W.	10	8	R.	R.	.07
W. 13	30.14	37	41	33	100	96	98	E.	N.W.	5	2	R.	O.	1.07
T..14	29.99	51	63	38	100	91	96	S.W.	S.W.	22	12	O.	O.	.06
F..15	30.15	30	36	25	91	94	93	N.	N.W.	14	13	R.	N.	.48
S..16	30.47	20	25	14	77	66	72	N.W.	N.W.	15	10	O.	C.	T.
☞	30.34	30	36	24	89	84	88			14	11			.25

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 16, 1892, TO JANUARY 22, 1892.

Leave of absence for twenty-one days is granted **Major Robert M. O'Reilly**, surgeon, U. S. A., Fort Logan, Col.

Captain Louis Brechemin, assistant surgeon, U. S. A., will proceed, without delay, from the Presidio of San Francisco, Cal., to Vancouver Barracks, Wash., and report in person to the commanding officer of that post for temporary duty.

Captain Aaron H. Appel, assistant surgeon, U. S. A., is relieved from duty at Fort D. A. Russell, Wyo., and will report in person to the commanding officer, Fort Buford, N. D., relieving **First Lieutenant Julian M. Cabell**, assistant surgeon, who will then report in person for duty at Fort D. A. Russell, Wyo.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 23, 1892.

W. G. Farwell, surgeon, detached from Naval Hospital, Norfolk, and wait orders.

Drake, passed assistant surgeon, ordered to the Naval Hospital, Chelsea, Mass.

George McC. Pickrell, passed assistant surgeon, detached from Naval Hospital, Chelsea, and to Naval Hospital, Norfolk.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING JANUARY 16, 1892.

Irwin, Fairfax, surgeon. Granted leave of absence for seven days. January 13, 1892.

Carter, H. R., passed assistant surgeon. To proceed to Cincinnati, O., and assume command of the service. January 8, 1892.

Brooks, S. D., passed assistant surgeon. To inspect unserviceable property at Marine Hospital, Detroit, Mich. December 23, 1891.

Williams, L. L., passed assistant surgeon. Granted leave of absence for twenty days. January 12 and 13, 1892.

Pettus, W. J., passed assistant surgeon. To proceed to Buffalo, N. Y., and assume command of the service. December 21, 1891.

Magruder, G. M., passed assistant surgeon. Relieved from duty at Washington, D. C.; ordered to Marine Hospital, New Orleans, La. January 8, 1892.

Perry, T. B., passed assistant surgeon. To proceed to Cape Charles Quarantine for temporary duty. January 13, 1892.

DEATH.

Long, W. H., surgeon. Died at Cincinnati, O., January 5, 1892.

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, February 1, 1892, at 8 o'clock.

Readers: Dr. E. S. Wood, "Renal Albuminuria not Due to Organic Disease of the Kidneys"; Dr. C. P. Worcester, "The Relative Values of Certain Meat Extracts."

John C. Munro, M.D., *Secretary.*

Surgical Section of the Suffolk District Medical Society. — This Section will hold its regular monthly meeting Wednesday evening, February 3, 1892, at 19 Boylston Place.

Papers: Dr. E. H. Bradford, "Operations on the Tarsus for Club-Foot"; Dr. A. M. Phelps, of New York City, will describe his "Method of Open Incision for Club-Foot"; Dr. Augustus Thorndike, "A Case of Club-Foot in the Adult"; Dr. John H. Huddleston, "Pott's Paralysis"; Dr. Wm. N. Bullard and Dr. C. L. Scudder, "Spastic Paralysis"; Dr. E. G. Brackett, "Reflexes in Joint Disease"; Dr. R. W. Lovett, "A Case of Torticollis Due to Hæmatoma of the Sterno-Cleido Mastoid Muscle."

Charles L. Scudder, M.D., *Secretary.*

Norfolk District Medical Society. — The fellows of the Norfolk District Medical Society resident in Jamaica Plain will entertain the Society at the Club House of the Jamaica Club, on Friday, January 29th, at 7.45 P. M. [Please note change of date.]

Dr. E. W. Hill, "Some Cases of Malarial Epilepsy. Advantages of Sanitarium Treatment of Epileptics." To be followed by a general discussion upon Epilepsy by Drs W. Channing, J. H. McCollom, S. J. Mixter, H. R. Stedman and others

Collation at 9.30.

The Club House is located on Green St., corner of Rockview Street, Jamaica Plain, three minutes walk from Providence Railroad Station. Train from Boston at 7.35 P. M., return at 9.27, 10.40, 10.50. The electric cars of the Jamaica Plain and the Egleston Square lines stop at Green Street, at short intervals. James C. D. Pigeon, M.D., *Secretary.*

RECENT DEATHS.

Claudius Marcellus Jones, M.D., M.M.S.S., died at the Massachusetts General Hospital, January 24th, aged forty-six. Dr. Jones was born in Worcester in 1845, and graduated from Harvard College in 1866. He spent some years in teaching, before entering the Harvard Medical School, from which he graduated in 1875. He served for a year as house-officer at the Massachusetts General Hospital. He was, at the time of his death, physician to the Boston Dispensary, the House of the Good Samaritan and St. Monica's Home.

Daniel Ayres, M.D., died in Brooklyn, N. Y., January 18th, aged seventy-one. He graduated from the University of New York in 1844, and received the honorary degree of LL.D. from Wesleyan in 1856. He was Surgeon and Professor of Clinical Surgery in the Long Island College Hospital until 1874, when he was made Professor Emeritus.

John Witt Randall, M.D., died in Boston, January 25th, aged seventy-eight. He graduated from Harvard College in 1834, and from the Medical School in 1839. He devoted most of his life to the study of natural history, especially entomology.

Eugene Montard-Martin, M.D., Physician to the Hôtel Dieu, Paris, President of the Académie de Médecine in 1890, died recently in Paris, aged seventy.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of the Bladder and Prostate. By Hall C. Wyman, M.Sc., M.D. Detroit: George S. Davis. 1891.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P., F.R.S., Assistant Physician to the Edinburgh Royal Infirmary. Volume I, Part III. Edinburgh: T. and A. Constable. 1891.

The Prescribers' Pharmacopœia, a Synopsis of the More Recent Remedies with a Therapeutic Index. By a member of the Pharmaceutical Society of Great Britain. Second edition. Bombay: Kemp & Co. Limited. 1891.

Original Articles.

SOME DANGERS OF INFECTION INCIDENTAL TO PROFESSIONAL LIFE.[1]

BY JAMES C. WHITE, M.D.,
Professor of Dermatology in Harvard University.

I HAVE been consulted within the last ten years by so many physicians on account of diseases they have acquired by contact with patients, that I have thought that it might not be without interest, and perhaps profit, to members of the Society, if I were to present to them in a brief form some of the dangers to which they are thus especially exposed. It is not my intention in this communication to consider what possible relation every disease regarded as contagious or infectious may bear to our subject, but I shall confine my remarks to those affections which are largely, if not wholly, acquired by contact alone. I shall exclude, therefore, all mention of the so-called acute contagious or infectious fevers, the liability and consequences of acquiring which are well understood. It may be well also to state in the beginning that I shall use the terms infection and contagion indifferently throughout this paper. I shall make no attempt to present my subject in any systematic order.

ANIMAL PARASITES.

But little need be said with regard to the danger of acquiring any of the affections of this group. Of the three forms of pediculosis it is the variety *capillitii* only which the physician is liable to take. It is by no means an uncommon occurrence for him to "get lice," as the expression is, in the performance of auscultation, chiefly among the poorer classes in cities, with whom it is extremely prevalent, and to carry it home to his family. It is the wife, however, generally who is the chief sufferer in such cases, for it is in her longer hair that the parasite finds the more favorable conditions for breeding, whilst in the very short hair of the doctor, as now worn, it rarely establishes a permanent seat. I have known not a few such instances in the households of members of this Society.

Scabies is the only other form of animal parasitic disease which the physician is liable to acquire by contact with patients, for although he may often be annoyed by the bites of bugs and fleas, so frequently found in the homes and upon the persons of the poor and dirty, their brief action upon his skin is but a trifling matter. The itch, however, is a much more serious affair, and as it has become a very common affection amongst us in the last few years (sixty-one cases seen at my clinic since October 1st), and as physicians often fail to recognize it, even in the most exaggerated cases when consulted, opportunities for its acquisition by themselves cannot be infrequent. Their exemption under these circumstances (for in my experience such cases of transference are not common, I can recall but one or two) is due, no doubt, to the fact that patients with scabies are handled at the dispensary or consultation-room when their hands and general surface are by exposure at a lower temperature than is conducive to the activity of the parasite, and because contact with the affected parts during a professional examination is necessarily very brief. Transference of the animal from one person to another is most generally effected, no doubt, by holding the hand for some time, or by longer surface contact with other affected parts of the body in bed, or during impure sexual intercourse. All possibility of such infection can be positively removed by adopting the custom of washing the hands immediately after handling any suspected patient.

VEGETABLE PARASITES.

When I was a young physician I wrote a Boylston essay upon human parasites, and this portion of my subject then comprised only three surface forms of fungus disease. Now we know that the class of vegetable parasites has been greatly enlarged, and includes some of the most important and fatal affections. Those forms were the easily recognized *tinea favosa*, *tinea trichophytina* and *tinea versicolor*. I have known but a single instance of the probable communication of any of these mycoses to the physician by ordinary contact with patients. This was a long continued *tinea trichophytina* of the finger-nails. The other two forms are transferred from person to person with the greatest difficulty, even when inoculation is intentionally practised. All the forms may, I believe, be freely handled and examined with impunity, provided the hands and instruments be immediately and thoroughly washed after contact.

There are two affections as to the contagious character of which there can be no doubt, and which are frequently transferred from animals to man. These are anthrax and equinia.

Anthrax. — The former, or splenic fever of horned cattle, sheep, horses and rabbits, is capable of causing internal general anthrax in man by inhalation of the infectious material, the *bacillus anthracis*, as wool-sorters' disease, without any accompanying cutaneous manifestations, as well as the so-called malignant pustule, by direct inoculation, as seen in butchers, grooms, tanners, skin-dressers, and the like. It is apparent that the veterinary surgeon is also liable to acquire the disease by the care of affected animals, or by post-mortem examinations of the same. It is also evident that the physician may become inoculated by the dissection of patients who have died of the disease, but a question of more general interest is whether he may become infected by contact with its external forms upon man. I find no record of such transference from patient to physician, but I see no improbability in its occurrence.

Equinia. — In glanders also we have a bacillus disease which is readily transferred from horses and asses to man, and from the latter to animals again by inoculation. As it not infrequently affects grooms, so, too, the veterinary surgeon is especially in danger of acquiring it. The virus may also be received by driving behind an affected horse, through contact of the spray from the beast's nostrils with the mouth or eye. In the acute form of farcy in man only about one-third of the cases recover. A few instances are on record where it has been transferred from man to man. It is possible, therefore, that the physician may be inoculated during attendance upon a patient.

Diphtheria is another bacillus disease which has been often transferred with fatal results from patient to physician, generally accomplished by sucking out bits of membrane after tracheotomy. Two members of this Society have become infected during attendance upon patients, one fatally, by such direct inoculation. It should not be forgotten that the Klebs-Löffler bacillus may persist in the mouth for ten or more days after the disappearance of the membrane in the throat, and that the vitality of these germs may remain active for months after their removal from an animal basis.

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[1] Read before the Boston Society for Medical Improvement, December 14, 1891.

Gonorrhœa. — The dangerous consequences to the eye of the surgeon of contact with the specific discharge in gonorrhœa must not be omitted from this list of infective accidents.

Erysipelas. — With regard to the contagious character of erysipelas diverse opinions prevail, although there is no longer a question as to its parasitic nature. The micrococcus is found in the lymphatic vessels and spaces in all cases, and has repeatedly reproduced the disease after cultivation when inoculated into the healthy skin of man. One understands, therefore, how the affection might be transferred from person to person, from patient to physician. Common belief has it that there is great danger of such communication, an opinion largely held apparently by our profession as well. I do not doubt the possibility of such transference, but I believe that it rarely occurs; I refer to the ordinary superficial forms of the affection. In the great number of cases that I have treated I have not known a single instance in which a second member of the family, a nurse, or medical attendant has become affected. At a meeting of the American Dermatological Association, held a few years ago, during a discussion upon the disease I asked if any of the twenty dermatologists present had personal knowledge of such an occurrence, and but one member could reply that he had observed a case in which such communication seemed to have taken place. Considering the frequency of the disease, we may conclude that erysipelas is contagious in a very feeble degree only. Considering its frequency, we must also conclude that the germs are often at hand to gain entrance through some unprotected point, as the chronic picked or sore nose, sore eyelid, or other abraded and exposed surface. This almost necessary connection with traumatism must largely account for its prevalence in the surgical wards of hospitals. Practically, the physician with a sound epidermis is sufficiently protected against the contagion of erysipelas.

Actinomycosis. — Now that we know that the ray fungus, a streptothrix, — which produces in domestic cattle "wen," "osteo-sarcoma," "bony sarcoma," and "wooden tongue," in the horse "scirrhous cord," in the pig abscesses in the milk glands and about the pharynx, — is also capable of producing disease in the tissues of man, the alveoli, the tonsils, the glands, lungs, and bones, and that it may be cultivated and thereafter successfully inoculated into rabbits and other animals, we have one more possible source of infection to avoid in the manipulation of disease. Our knowledge of the existence of actinomycosis in man is of too brief duration to furnish the clinical data, by which the reality of such danger may be estimated.

Rhino-scleroma must not be omitted from our list of bacillus and possibly infectious diseases, but it is extremely rare, and, so far as I am cognizant, we have no evidence of its transference from one person to another.

Leprosy, Tuberculosis, Syphilis. — There remain to be considered in their positive relations to our subject three of the most important diseases which affect man, and which are the chief destroyers of the human race. These are leprosy, tuberculosis, and syphilis. The first two are known to be bacillus affections. The latter has not yet been demonstrated to be such, as the first had not been in 1879, and the second in 1881. Still, the bacillus was present in them all the while previous to these dates, just as I doubt not one has always been, and is in the tissues of every case of syphilis. We shall yet find the proper reagent for its recognition. All three of them are contagious in the sense of being communicable from one person to another under favorable conditions, by contact or inoculation. The question which immediately concerns us is, how far does ordinary professional intercourse between the physician and the patient make such transference possible?

Lepra. — In a communication made to this Society a year ago, I presented the evidence upon which modern belief in the contagiousness of leprosy is founded. These data, very briefly restated, were: a study of the history of the introduction of the disease into Europe in the twelfth and thirteenth centuries, and its disappearance under stringent laws of segregation; its lingering in force in certain civilized countries under the protective patronage of the doctrine of heredity, and its rapid shrinking from 3,000 to 800 cases in the same regions under a revival of the practice of isolation in the present generation; the enormous spread in our day of the disease on fresh introduction among virgin nations, whose customs and morals especially favor its transference by personal contact; the opportunities afforded of studying its restricted spread along family lines on its recent appearance in certain limited foci in the United States and adjoining British Provinces; and lastly, numerous well authenticated instances of servants, ward-tenders, nurses and priests becoming affected by the disease after prolonged attendance upon hospital lepers. In fact, I do not hesitate to state that we are acquainted with many more cases of leprosy acquired by hospital attendants than with instances of syphilis similarly communicated to nurses and ward-tenders in syphilitic wards. Nor should the successful results of the inoculation of the condemned murderer, by Dr. Arning, in the Hawaiian Islands, although not an absolute demonstration, be forgotten.

The presence of bacilli in all affected tissues, in the secretions and discharges, and the open condition of the numerous cutaneous lesions in leprosy, offer the most favorable conditions for inoculation on the part of the patient throughout the prolonged course of the disease. On the other hand, the protracted period of incubation after inoculation, from one to five years probably, makes the recognition of such instances of direct communication vastly more difficult than in syphilis. If these nurses and ward-tenders and priests may and do become lepers, in consequence of their attendance upon lepers, it is evident that physicians may also acquire the disease by personal contact with patients. Two Hawaiian physicians, not natives, are known to have become affected by it.

But, it may be said, this is a very remote danger to ourselves as practitioners, for leprosy is not a disease of our part of the world. It is true that there are not 250,000 lepers in the United States, as there are in India, and that they do not form a considerable percentage of our population, 1:15, as in the Sandwich Islands, yet the disease has established a foothold in many of our States — in South Carolina, Florida, Louisiana, Texas, California, Oregon, Wisconsin, Minnesota, Dakota, and Utah. Last year there were certainly six cases in New York City, four in Philadelphia, and two in Boston. These are the cases that have been recognized; they are but a part only, no doubt, of the number that really exist amongst us. Fifteen years ago it was scarcely known that outside of our Scandinavian States there was a leper in the country; now there are one hundred in one town in Florida alone. The disease is bound to increase with all these foci in our midst, if the national government do not take immediate steps for its exclusion by proper immigration laws, and for its segregation within our boundaries, while it yet remains in manageable numbers. Practically, there need be no dread on the part of the physician to handle any case of leprosy in the freest way under a few simple precautions: that the epidermal covering of his hands is intact, that he never allows himself to touch an excoriated lesion or the various discharges of the patient, and that he invariably washes his hands in the most thorough manner after his examination of every case.

Tuberculosis. — I have so lately expressed my views [2] concerning the unity and contagiousness of the several phases of this disease of many shapes, that I hardly need say more with regard to their recognition and interchangeable nature. In lupus, verruca necrogenica, tuberculosis cutis, and scrofuloderma, as in other forms less commonly well known, we find the same bacillus, the same as in tuberculous disease of other organs, capable of cultivation and of producing one and the same disease in animals on inoculation, from whichever of these clinical forms it is taken. Conclusive evidence has been collected moreover that one form may produce the same or another when inoculated or transferred from one tissue to another tissue of the same person, or to the tissues of a second person. The common nature and the common danger of all forms of tuberculosis having been established, the question which especially concerns us now is in what way and in what form is the disease most likely to be communicated to the physician or surgeon. We know the possible dangers incident to the inhalation of the air of wards for consumptives up to the recent date of our knowledge concerning the nature of sputa in that disease, and those connected with auscultation and other forms of close contact with contaminated garments and the patient's exhalations. There are other channels of infection not so generally appreciated.

The verruca necrogenica, or anatomical tubercle, has long been known as affecting the fingers of dissectors and autopsy-makers, but it is only within a few years that its tuberculous nature has been known. Lately a much more extensive verrucous affection of the integument has become recognized also as a true cutaneous tuberculosis, and entitled tuberculosis verrucosa. Both forms contain the tubercle bacillus, and are in fact anatomically identical in all respects. The first named clinical form is undoubtedly acquired in the dissecting and necropsy rooms by contact with tuberculous tissues of the cadaver. The latter, much more extensive and sometimes multiple, is often acquired, I believe, by contact with phthisical sputa and open scrofulous glands. I have seen it repeatedly upon the hands of consumptives, and those in attendance upon them and patients with scrofulous ulcers. One may therefore acquire cutaneous forms of tuberculosis by making dissections and autopsies, by examinations of all external forms of the disease, by surgical operations upon "scrofulous" gland, bone and joint disease, and by contact with phthisical sputa. That cases of inoculation among physicians, considering the great prevalence of these many forms of the disease, are not more common, may be attributed to the protective nature of a sound epidermis. That none of us may surely escape such danger will be apparent to you, when I state that two members of this body have thus acquired tuberculosis verrucosa, and I have treated several students with verruca necrogenica. It is indeed fortunate that such forms of the disease tend to remain strictly localized cutaneous processes for indefinite periods, and not to become foci for dissemination of the bacillus to internal vital organs, as do the softening varieties, lupus and scrofuloderma, in so large a percentage of cases.

Syphilis. — This is an affection, with the appearances of which the practitioner is presumed to be familiar, and with the dangerously infective properties of which he is fully acquainted. It might be supposed, therefore, that, being constantly upon his guard, it would be a rare occurrence that he should become infected through patients. Unfortunately the reverse is the case. This may be due to lack of proper knowledge of all the manifestations of this protean disease, to inattention to the necessary precautions in handling cases, or to the masked or concealed lesions with which he may come in contact during surgical or obstetrical manipulations. Certain it is that for one or all of these reasons physicians often become inoculated with syphilitic virus through their own hands. Another unfortunate feature in the history of these cases is that they rarely recognize the real character of the early lesion upon themselves, accepting every possible and often impossible diagnosis as to its nature, before the correct one is forced upon them. They, too, are apparently blinded by the commonly received opinion that syphilis is necessarily a venereal disease, and therefore disregard the liability of contracting it through extra-venereal channels, and the dangers of contact with other than genital lesions. Accordingly the digital primary lesion is generally regarded as a felon, a septic sore, a local tuberculosis, or even a malignant process at first, or until a perfectly defined syphiloderm, or other signs of general infection, make clear the nature of the former. I have seen all these mistakes made, and, when the later constitutional symptoms were slight or fugitive in character, have seen the erroneous diagnosis persisted in for months, in one instance until amputation was seriously considered by patient and surgeon as the only possible means of relief. It is astonishing how wide and deep may be the tissue changes in the integument, which in time develop around the primary inoculation in some such cases. In the beginning, however, the earliest manifestations may be of the most insignificant and apparently trivial character. The primary lesion of syphilis is by no means necessarily the expected standard chancre, it may be a small papule, an excoriation, or an ulcer of very misleading appearance. It is not, however, my intention even to touch upon the diagnostic features of any of the affections we are considering. I have notes of fifteen cases of syphilis in physicians, and I have seen and known of others, who were inoculated upon the hands during the discharge of their professional duties. The seat of the primary lesion was determined in the majority of them by inspection, in the remainder by data obtained from the victims. They were mostly severe cases, perhaps because, for reasons above given, the diagnosis was made late and, therefore, treatment was begun late, perhaps because there is truth in the common saying that physicians make bad patients, and treatment under the divided responsibility of the consultant and sufferer was negligently conducted. I know no disease which demands so absolute and constant a surrender of the patient's will to the control of the physician as syphilis. Three of these unfortunates, possibly more, died of the disease. All of them suffered greatly in mind, and were more or less physically disabled or disfigured for a time. Some of them might readily have communicated the disease to their own households or to patients, before the nature of the digital affection was recognized. I once treated a midwife with an open primary lesion upon her finger. I found that she had delivered thirty-two women whilst the sore was in this condition. How many of these lying-in women, or of the infants handled by her may she not have infected? Yet I believe that every case of syphilis may be handled as thoroughly as the needs of diagnosis demand. The sound epidermis is a safe shield against the reception of the virus as a rule, no doubt, but the hang-nail, or the slight fissure, or excoriation forms the fatal point of entrance.

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[2] Boston Medical and Surgical Journal, November 12, 1891.

Two practical lessons have enforced themselves upon me from my experience in this relation: First, always to wash one's hands immediately after an interview with a patient who has, or is suspected to have syphilis, without regard to the condition of the parts handled, or even if not touched at all. This should be made an invariable custom. Second, that the physician should regard every persistent sore upon himself of whatever seat and however innocent apparently, as a possible lesion of tuberculosis or syphilis, and seek competent advice without delay. Such advice is never found at home.

I have thus briefly, and very inadequately, I am aware, called your attention to some of the dangers to which the physician is liable in his daily work. The agents of all the evils we have been considering are among the most minute and lowest forms of organized life. In spite of recent disappointments in the resources of pure science applied to this end by the most eminent masters, let us not forget that one most destructive pest was long ago robbed of power over mankind by the keen observation alone of a plain country physician, and trust that, in the one way or the other, some day these affections, we have been considering, may likewise be rendered innocuous to us and all men by the protective action of some beneficent influence.

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WHAT IS A "FELON?"[1]

BY HERBERT L. BURRELL, M.D.,
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As a member of the Suffolk Board of Censors I have asked the above question of many applicants for admission to the Massachusetts Medical Society, and have received answers which have convinced me that the term "felon" is loosely applied. A search in the common text-books on surgery shows, as a rule, the neglect to clinically differentiate the inflammatory diseases of the finger.

There can be no question of the difference between a simple "run-round," which, although troublesome, is rarely dangerous, and that serious, destructive suppuration which destroys not alone the usefulness of the finger and hand, but occasionally ends fatally. Yet the distinction in name, at least, is frequently not made. I feel sure that most practitioners distinguish various affections of the fingers; and in this paper I shall place before you a classification that I have used in my work, which has enabled me to meet these cases with a greater sense of accuracy. It is an anatomical classification, and is as follows:

(1) Dermatitis.
(2) Paronychia.
(3) Cellulitis of the finger.
(4) Suppurative thecitis.
(5) Periosteitis, or osteitis of the phalanges.

I believe that it will be granted by all that it will be of value to differentiate these several affections, and, as a matter of fact, I have found it possible to do so in my clinical work. Whether I shall succeed in placing their clinical histories before you will be a matter of which you alone can judge.

I. DERMATITIS.

In a dermatitis we have a clinical history somewhat as follows: Usually the starting-point is some slight abrasion of the cuticle covering the end of the finger, and from this point there starts a reddened area with slight elevation of the skin, with a stinging, smarting pain, which is not intense enough to prevent sleep. The finger when held dependent is more painful than when supported. This red, slightly elevated area involves both the epidermis and the derma. Vesicles form from point to point, these become pustules, and the dermal inflammation which extends is temporarily checked at the different flexures of the fingers until it involves the whole finger, and occasionally spreads on to the palm or dorsum of the hand. Copper workers, zinc workers and paper-box workmen are particularly apt to have this trouble. It is purely a local affection, and is self-limited when the cause is removed. Its treatment may be carried out by the application of any one of the astringent lotions like liq. plumb., subacet., or, what is preferable, a 1–20000 solution of corrosive sublimate. This, in the course of forty-eight to sixty hours, will check the dermal inflammation, as a rule, and then exfoliation of the skin of the finger will occur.

II. PARONYCHIA.

This is a form of inflammation which occurs in the structures lying at the root of a nail, and it may appear when any crack has occurred in the skin overlying the luna of the nail. Usually a smarting, stinging, or throbbing pain exists for a few hours, definitely localized in a tender, reddened area at the point of infection; for I believe that usually this is the result of inoculation. (House-surgeons used to be particularly liable to this affection, but of late years have had less trouble). At the end of one or two days there is usually a small area of pus, and at this time by appropriate surgical interference a great deal of trouble can be averted. If, on the other hand, this is neglected the pus is retained by the tense band of the union of the derma at this point, and passes downward to the matrix of the nail, and then begins to burrow beneath the nail. This occurs at the end of four or five days, until finally the matrix of the nail is completely undermined, and the nail is thrown off at the end of several weeks or months. This process may stop and the pus be discharged from beneath the skin covering the luna of the nail, in which case the nail is not lost. When, however, the process passes down beneath the nail the pus continues to discharge, at times changing to a thin, straw-colored fluid, the skin at the root of the nail becomes a livid white, is sodden and saturated with purulent material, until relief is afforded by allowing a free exit for the retained fluids.

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[1] Read before the Boston Society for Medical Improvement, December 14, 1891.

The early treatment of this affection is very simple. The part of the skin overlying the luna should be thoroughly divided, so that pus is evacuated. It may be necessary to use primary anæsthesia or cocaine. Then a moist, hot, antiseptic dressing [1] should be applied and changed once in four hours, and usually at the end of twenty-four to forty-eight hours wrinkling of the skin, subsidence of reddening and pain having occurred, the process is checked. After this a dry dressing, like aristol, can be used to advantage; but if there is any recurrence of active inflammation, a moist, hot, antiseptic dressing should again be used.

Not infrequently this simple treatment is futile, for as soon as the moist, hot, antiseptic dressing is resumed the soft parts at the root of the nail become actively inflamed again, and when this occurs one may abandon an antiseptic dressing, and attach the free end of a narrow strip of adhesive plaster (three-eighths to half an inch wide and four-fifths of an inch long) to the side of the finger, and wrap it around the finger in a spiral. This attachment of plaster draws away the skin from the nail, and into the sulcus nitrate of lead may be dusted. This "drys" up the discharge, and is of assistance in checking an obstinate inflammation at the root of a nail.

When the pus has passed down beneath the nail, or the end of the finger has become sodden and club-shaped from the retained purulent material, the nail should be removed, care being taken to remove the lateral expansions at the root of the nail; this allows a free exit of the pus, and the use of any antiseptic dressing will quickly put the finger on the road to recovery. Nails grow in from four to six months.

III. CELLULITIS OF THE FINGER.

In the clinical history of this affection there is usually a story of a contusion or a direct inoculation by a pin or needle, and then within twelve or twenty-four hours there begins a throbbing pain distinctly localized at one point on the palmar surface of the finger. This gradually becomes reddened, slightly dusky, and the whole finger end becomes tense from the swelling. The throbbing pain continues, but is rarely sufficient to keep the patient awake the first, or even the second night. By the third night the pain is usually so intense that the patient will have simply "cat-naps." Usually before this a poultice has been applied, and the pus has more or less localized itself at some point on the extremity of the finger.

The treatment is simple, not imperative. It requires a limited incision into the pulp of the finger; a thorough evacuation of the pus; and the application of a moist, hot, antiseptic dressing.

Even if an incision is not made in the finger, after a proper amount of poulticing the pus will evacuate itself, and, although, possibly an unpleasant scar will be left on the finger no permanent impairment of the finger tip will occur; so that the prognosis of this affection is good.

IV. SUPPURATIVE THECITIS.

This affection may be due either to direct inoculation by a needle or pin; severe bruising of the soft parts overlying the tendons; or a long-continued use of the flexor tendons in a patient unaccustomed to their use; for instance, stone-masons who have been out of work for a time, and who on returning to their work have to handle rough stones which they have grown unaccustomed to, occasionally start up a serious suppurative thecitis which involves the fingers and palm of the hand.

The clinical history is as follows: A pulsating, throbbing pain referred to the whole finger is one of the first symptoms noticed. It comes often before much swelling occurs in the finger, and certainly before redness makes its appearance. This throbbing pain is severe, but for the first twenty-four hours does not keep the patient awake. With intelligent patients I have found that they could define accurately the limits of the suppurative process in the sheath of the tendon. Pressure laterally on the finger is painless, while pressure on the tendon is very painful.

The spread of the inflammation up the course of the tendon is delayed at the flexures of the fingers, and starting, for instance, in the middle finger in the second joint, it is usually forty-eight hours before the thecitis has spread to the palm of the hand. The finger is flexed on itself in order to render it less tense, and by the end of the third day the whole finger is involved in the process, and usually relief to the severe throbbing pain occurs suddenly by the bursting of the sheath of the tendon, and thus direct infection of the surrounding cellular parts occurs.

If no relief is afforded by surgical measures the whole finger is soon involved. It becomes tensely swollen; a livid red; exquisitely sensitive; the entire finger assumes the shape of a sausage; the joints are involved in the suppurative process; the sheath of the tendon becomes loaded with pus, and utter destruction of the finger is the result.

If the pus confines itself alone to the finger it will be most fortunate, but usually the inflammatory process extends upwards along the course of the tendons into the palm of the hand, beneath the annular ligament and into the forearm; until the palmar fascia is tensely distended, and the forearm and arm filled with channels of pus. When it reaches this stage often the patient succumbs to the absorption of purulent material, or at best escapes with a hand and forearm crippled by the permanent gluing down of the muscles and tendons.

The treatment of this affection differs so widely from the two preceding ones that it is on this account that I speak so strongly in reference to a division of the diseases known and classed under the head of felon. The earliest surgical interference under ether, with careful antisepsis, will save the finger and the usefulness of the hand.

Any patient who has an early clinical history of thecitis, I should advise to take ether and have a careful incision made down to the sheath of the tendon, which if found distended can be thoroughly opened, and if necessary further openings can be made at other points in the course of the tendon and the pus allowed to escape. Then the surface should be thoroughly cleansed with an active germicide, 1–2000 corrosive sublimate, and the finger and hand immersed in a hot, moist, antiseptic dressing. Immobilization of the fingers, hand and arm are imperative; for under these circumstances the slightest motion in the flexor tendon may inoculate a fresh surface in the tendon sheath.

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[1] This should consist of clean gauze or absorbent cotton wrung out in a solution of 1-2000 of corrosive sublimate; should be generous, that by its extent and bulk it may macerate all the surrounding parts; and it should be enveloped in some form of "protective," as oil muslin, macintosh or oiled paper, that the heat and moisture may be retained.

If, on the other hand, after making an incision down to the flexor tendon, at the end of twelve or eighteen hours we have no distension of the sheath of the tendon, useless or indiscriminate cuts, which I regret to say are not infrequently made into the palmar surface of the finger, may be avoided. I have notes of four cases where I believe a simple cellulitis of the finger was converted into a suppurative thecitis by an incision made "down to the bone." In one instance the patient's life was sacrificed; in the other the pus extended into the deeper structures of the forearm, and permanently impaired the usefulness of the arm and hand.

The treatment of these cases, when the pus has involved the palm of the hand and forearm, should be by free incisions into all the available parts. These various incisions can be enlarged by Bigelow's dilator, which is like a glove stretcher, and drainage-tubes should be placed connecting the various openings. The hand and arm should then be treated with a hot, moist, antiseptic dressing, changed frequently, or by a continuous antiseptic bath, which is a very useful measure in the severer cases. Amputation of the arm is exceptionally called for.

The prognosis of this affection, if seen early and treated promptly and surgically, is good. A certain amount of stiffness of the finger, the sheath of which has been opened, will remain for a limited period of time; but massage, and a constant use of the hand after healing, will at the end of a few months nearly restore the finger to usefulness. Where, however, the pus has extended into the palm of the hand, and especially when it has involved the wrist and the deeper structures of the forearm, a most guarded prognosis must be given, not alone as regards the use of the arm, hand and fingers, but as to life itself.

V. PERIOSTEITIS, OR OSTEITIS OF THE PHALANGES.

The clinical history of a periosteitis or osteitis of the phalanx is different from the preceding histories. As the result of some contusion, or occasionally by direct infection, we have, usually beginning in the evening, a severe pain definitely localized at some one point on the extremity of the last phalanx. This pain is so intense that sleep is out of the question. The finger may be slightly tense and perhaps glistening, but any marked degree of swelling has not occurred. The pain is so intense that the patient walks the floor, holding the hand and writhing with pain. This continues at varying intervals for from twenty-four to forty-eight and up to sixty hours, when the pain diminishes, the finger becomes more swollen and distended, and of a livid red color. This relief to pain is due to the bursting of the periosteum, and letting out of the pus into the surrounding parts; then we have added to the osteitis or periosteitis a cellulitis of the soft parts of the finger.

When the pain has persisted longer than three or four days, or has not been relieved by a free incision, I have inferred that there was an inflammation of the bone itself. Blebs then form on the tip of the finger, until finally pus is discharged, and the finger is converted into a rounded nub of a livid red color, and finally, at the end of from eight to twelve weeks, there is cast off the sequestrum of the necrosed bone. The mischief to the bone in these cases is done very quickly; for it is a form of jugulation of the phalanx that occurs from the pus collecting beneath the sheath of the periosteum.

After the sequestrum has been cast off, at intervals varying from four to eight months, the finger heals, leaving a misshapen extremity, a distorted, curved nail, and a permanently impaired finger-tip.

The treatment of this affection is one requiring the promptest surgical interference. In seven instances I have made a direct incision into a finger within twelve hours of the beginning of the pain, and in each instance found a small area of pus. Here, in each case, the incision was carried directly down to and through the periosteum. In two instances there was not complete relief to pain for two or three days. My belief is that in these cases the original trouble started in the osseous structure of the finger. If the incision is made early and thoroughly, we can frequently save the bone from becoming necrosed; but at the end of forty-eight hours I have found the bone irremediably damaged; and if a patient comes to me with a periosteitis or osteitis at the end of four or five days, I always warn them that the bone has been destroyed by the inflammatory process. This is an important point, for the patient often thinks that the surgical interference is the cause of the loss of the phalanx.

In those cases which come at the end of four or five days with the finger tensely swollen and filled with pus, a free incision hastens the recovery of the parts. In two instances I have removed the phalanx at this time endeavoring to save the periosteum, and in both instances have had a reproduction of a certain proportion of the phalanx.

Where a patient applies for relief at the end of several weeks, with the finger swollen, livid and distended with pus, which has opened at various places about the end of the finger, on introducing a probe one can feel the bare bone, and an operation is necessary for its removal. A certain amount of shaping can be accomplished by adjusting a finger splint to the dorsum of the finger to retain the general shape of the phalanx, and in one instance I was enabled to produce a more sightly tip of the finger in this way.

From the foregoing it will be seen that the prognosis is very grave as regards the fate of the phalanx unless an early operative interference is made. If, on the other hand, the periosteum is opened thoroughly at an early hour the finger-tip may be saved.

It is, perhaps, unnecessary to say that in attempting to classify these various affections I may have failed in making the definitions distinct; nevertheless, in actual practice the above classification has been of practical use to me. That these various affections run one into the other is equally true, and that at times it is impossible to make a clear distinction is true; but if by writing this paper I can throw any light on a more accurate understanding of the subject of felons my object will have been accomplished.

It has not been uncommon for me to meet cases which have been ignorantly treated. To make an incision down through the periosteum in a case of dermatitis is worse than useless; on the other hand, to fail to make an incision in a case of periosteitis or osteitis of the terminal phalanx at the earliest moment that the case comes to one is criminal negligence.

I have purposely omitted many little details of treatment in order to emphasize the importance of this differentiation of the various diseases which are known under the generic term of felon, and as a result of my personal experience I would suggest the following conclusions:

(1) That the term "felon" be abolished.

(2) That an anatomical classification of the inflammatory affections of the finger be adopted.

(3) That in all cases of periosteitis or osteitis of the phalanx an immediate incision is imperative.

(4) That in cases of suppurative thecitis an anæsthetic should be administered, and a careful incision made into the anatomical structures which are involved in the pathological process.

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Clinical Department.

TWO CASES OF CORNEAL WOUND WITH PROLAPSE OF IRIS.

BY ALLEN GREENWOOD, M.D., WALTHAM, MASS.

The treatment of these two cases was put under my charge through the kindness of Dr. E. R. Cutler of Waltham.

Case I. Was called in consultation February 27, 1891, to see J. G., a little girl of ten. About two hours previously she had been using a pair of scissors and accidentally stuck one of the scissor blades into her right eye. On examination the following conditions were found: In the outer margin of the cornea close to the sclera there was a perforating wound about one-eighth of an inch long and running parallel to the edge of the cornea. Caught between the edges of the wound was a bit of the free edge of the iris, it probably having been washed out by the escaping aqueous on the withdrawal of the blade. There was a little blood in the lower part of the anterior chamber. Chloroform was given, and by using a thin flat probe the protruding portion of iris was pushed back and smoothed out. The anterior layer of the iris had been slightly lacerated by the point of the blade. The pupil, which before had shown a V-shaped elongation to the wound, was again restored to nearly its original shape except for a slight nick at its outer edge.

As the prolapse showed no inclination to return, pilocarpine, in one-half per cent. solution was dropped in, and the eyes covered with absorbent cotton and bandaged.

February 28th. Bandage and cotton removed, but as there was no pain or discharge the dressing was re-applied without the lids being opened.

March 1st. Dressing removed, and the eye found in good condition. The corneal wound was healed, and the blood in the anterior chamber had disappeared. The iris showed no signs of inflammation; and the pupil was nearly perfect. Slight amount of photophobia. Pilocarpine was again used. Re-bandaged.

March 2d. Bandages removed for good, as the eye was in excellent condition, there being but little injection of the vessels near the wound. Pilocarpine used as before.

March 3d. The eye causes no trouble, and the pupil is perfectly round and responds normally to light and accommodation.

July 6, 1891. Examined to-day. Pupil normal, and the iris shows no evidence of ever having been injured. The scar being so close to the sclera does not show except on closest inspection. Vision perfect.

Case II. Was called in consultation June 20, 1891, to see Louise G., a little girl of five, who had had a three-inch board-nail enter her right eye. The nail had been thrown from some height above her, and she had looked up just in time to have it enter the eye. She immediately pulled it out and I saw her about an hour after the injury. As she would not allow the eye to be inspected, chloroform was given, and the following conditions found: The small end of the nail had entered the eye in the lower left-hand quadrant of the cornea, slightly involving the ciliary region. There was a jagged hole in the cornea, about one-eighth of an inch long and one-sixteenth of an inch wide, through which a large piece of iris was protruding. This portion of iris was much lacerated, and had been torn from its attachment at the lower part, as though the nail had taken a direction downward and outward as well as toward the interior of the eye. The anterior chamber was empty, and owing to the position and size of the wound the prolapsed iris would not remain in place when returned. In the upper part of the iris there was quite an extensive ecchymosis. Attempts to replace the prolapsed iris failing, that portion was snipped off and the remaining edges placed inside the anterior chamber as far as possible. A few drops of eserine sulphate were then dropped in and the eyes covered with absorbent cotton and bandaged.

The myotic was used, as was pilocarpine subsequently, to prevent the edges of the iris from entering the wound. The cotton and bandages were renewed every day for a week, and then discarded, as the wound had healed and the anterior chamber was again established.

For three weeks there was some photophobia and circumcorneal injection but no pain.

About four weeks after the injury the following conditions were present: A large irregular white scar in the lower left-hand quadrant of the cornea; shallow anterior chamber; and pupil nearly normal in size but drawn down to the scar, where the iris is attached.

Repeated instillations of atropine failed to dilate the pupil but slightly and since then the pupil has been steadily drawn down to the scar, in spite of mydriatics, until it is no larger than a pin's head. There have never been any symptoms of sympathetic trouble in the left eye.

January 5, 1892. Examined to-day. O. D. vision practically *nil*. The scar in the cornea, which extends from the sclera nearly two-thirds of the way to the centre, is not nearly as opaque as at last examination. In the lower part of the iris, exactly in the median line, there is a round opening, about one diameter across, showing through the corneal opacity. Just above and a little to the inside of this is the pupil, which is egg-shaped, about the size of a small pin's head, and having the portion of iris forming its lower point attached to the corneal scar. Except where the iris is attached to the cornea the anterior chamber has been preserved. That portion of lens which can be seen through the small pupil is white and glistening, showing that a traumatic cataract has formed.

Of course, with such an injury a very favorable result could not have been secured, but I think a much better pupil would have resulted if atropia had been used from the start. In regard to the appearance of the eye a better result was obtained than was expected, as the scar is becoming less opaque, and the pupil being so small renders the white lens less conspicuous.

From these two cases, particularly the second, I would draw the following conclusions:

In all cases of marginal wound of the cornea with protrusion of a portion of the iris, where the protruding iris can be successfully replaced, some myotic should be used.

In cases, however, where the protruding portion has to be snipped away and especially where the wound is large and lacerated, some mydriatic should be used from the start to secure ultimately as large a pupil as possible.

An exception might be taken to this last in cases where it was evident that the lens was injuried, and where a small pupil would render the subsequent cataract less conspicuous; but then there is the objection, that if a cataract-extraction becomes necessary, from subsequent loss of the other eye, it would be apt to be less successful than if the pupil were large and the iris less adherent.

Of course, every case has to be treated on its own merits, and it would rarely happen that two cases would present exactly similar conditions; but the point I wish to emphasize is, that, in cases of marginal wound in the cornea, the rule of always using a myotic should not be too blindly followed, and I think the use of a myotic in my second case was a mistake, and that a better result would have been obtained by the use of atropia.

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A NEW, SAFE AND SURE METHOD TO EXPEDITE DIFFICULT CASES OF LABOR.

BY MARSHALL L. BROWN, M.D., OF ALLSTON, MASS.

DR. PLAYFAIR, F.R.C.P., Professor of Obstetrics of King's College, London, writes recently of an "entirely modern oxytocic by manual pressure applied directly to the uterus to increase the force of feeble pains, etc."[1]

It is something like ten years since I commenced the use of the herein-described method[2] of expediting difficult and retarded cases of labor with pelvic or breech presentations. I have made use of the same method in difficult labors with vertex presentations, since that time, when the presentation was a safe one, and, from any cause, the expulsive pains of the patient seemed inadequate for the delivery of the child.

I well remember the teachings of our professor in obstetrics, Dr. Dix Crosby, of Dartmouth College, who was pre-eminently a practical man, who said that having made out the presentation, as a general rule, we were to wait patiently; we were not to use the blunt hook; we were not to get our finger into the flexure of the joint, at the groin; but we were to wait; nature would eventually accomplish the delivery. I had had a few cases of labor with breech presentations and followed these eminently practical directions and all went well. In the following case they did not work as satisfactorily.

Mrs. G., a closely-built, vigorous, young woman, weighing one hundred and thirty-five pounds, of sanguine temperament and florid complexion, was taken in her first labor in the afternoon. The night wore away — the following day, the next night, another day, to the third night. Up to this time, everything being natural, the parts cool and moist, the presentation having been early made out, we had kept her courage and hope sustained by telling her that as long as she remained cool, the pulse and temperature natural, the parts moist, there was no cause for anxiety or alarm, and that all would eventually come out right. During the evening the pains increased in strength and duration. The patient became excited at the delay, and called for ether and the instruments, and later in the night begged piteously for them. I finally gave her ether at the commencement of each pain, and while it continued. While giving the ether, in her writhing, she got crosswise on the bed, with her head towards the wall. I gave the towel cone, by means of which the ether was given, to the nurse, and, placing my hands well spread out over the fundus of the womb, I applied a gentle and continuous force in downward and backward pressure, while the pains were on, upon the womb and contents, in the line of the axis of the pelvis. When the pains ceased I stopped the pressure. As the patient made no complaint, I continued applying the force, gradually increasing it at each pain. After an hour or so, on making examination, I found that she was making progress, and the breech was engaging. I continued the application of this force; and after about three hours more of hard labor, on the part of the patient and myself, I had the satisfaction of knowing that the labor would terminate successfully. Meanwhile, however, the husband and friends had become panic-stricken (in spite of my assuring them that all was going on well) and desired counsel. I assented. While the husband was after the counsel, I gradually increased the force applied, until it was all I was capable of exerting with my hands, as before described, upon the abdomen of the patient.

After the breech had passed the upper strait, she made more rapid progress; and at the proper time, when the breech began to be delivered, I passed to the other side of the bed and rendered the necessary assistance and delivered her safely of an eleven pound girl, before the return of the husband with the counsel.

As this was the first time of my applying force in this manner, I felt not a little anxious as to the result although I had reasoned, that if the force was properly applied, and in the right direction, no harm could be done to the patient. I have to say, however, that she did not complain of any unusual tenderness of the abdomen, and she made as quick and perfect a recovery as any patient I ever had.

I searched the authorities for any description of the application of force applied in this manner, to expedite labor, and have thus far failed to find any mention or hint, of its ever having been before so applied.

From that time to the present, I have made use of this method, and have at times applied so much force as to be apprehensive lest some harm might come to the patient; but in every instance the patients have made speedy and perfectly satisfactory recoveries. From the experience I have had in the use of this method, I am satisfied that it is a safe, sure and satisfactory help in the delivery of difficult and retarded cases of labor, with either breech or vertex presentations.

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[1] Braithwaite's Retrospect, Part cii, January, 1891, p. 200, first two paragraphs.

[2] Read before the Boston Gynecological Society, 1884.

Briefly, the method consists in applying a force synchronously with the natural labor pains, by and through the hands of the obstetrician, so spread as to embrace as large a portion of the fundus of the womb, as may be possible, and applied downwards and backwards in the direction of the axis of the pelvis.

The following are directions which should be remembered and followed in making use of this method:

(1) As to the position of the patient. It can best be made use of when the patient is crosswise on the bed, in nearly the same position as when the forceps are to be applied.

(2) The hands of the obstetrician should be so spread as to embrace as large a portion of the fundus of the womb as possible.

(3) The force should be applied when the pain commences, gently at first, gradually increasing it to the end of the pain and should cease with the pain.

(4) The force must be applied downwards and backwards in the direction of the axis of the pelvis.

Finally, certain precautions should be borne in mind in the use of this method:

(1) It should not be used unless the presentation is a safe or deliverable one.

(2) It should not be applied spasmodically by jerks, but with a gentle, gradually increasing pressure.

(3) It should not be used unless the os uteri is dilated or dilatable.

Following the above directions, and bearing in mind the cautions given, this method will, I am sure, be found of great value in difficult and retarded cases of labor, and for the average general practitioner, safer than the forceps.

A CASE OF QUADRANT-ANOPSIA WITH RIGHT SENSORY AND MOTOR HEMIPLEGIA.[1]

BY J. J. PUTNAM, M.D.

A young man, eight years ago, fell on the ice, striking on the left temple. He has a depression in that neighborhood which I suppose may be the result of this fall, although on the other side of the head is an equally marked depression which is unaccounted for. At any rate he had a severe fall and was unconscious after it for two weeks. This was followed by severe headaches from which he suffered very much. They were not localized in the neighborhood of the injury, but were rather diffuse and especially felt in the frontal region. Two years ago, while taking his bath, he had suddenly a strange sensation come over him, felt his right hand suddenly numb. He became almost unconscious. It is a little doubtful whether he had a convulsion or not, but he became hemiplegic on the right side. This lasted only a limited time, about two weeks, and passed away, and at that time he ceased to be troubled with the headaches which had followed him until then. After this he worked steadily until last April, when he again became hemiplegic on the right side. He came to me first a few days ago. He has now partially recovered from his hemiplegia, but improves slowly.

The physical examination shows that this is a well-marked case of sensory hemiplegia, to begin with. The patient is unable to notice differences in temperature on the right side, and also his sense of position is almost abolished, so that with the eyes shut he is unconscious in what position his fingers or toes or foot or hand are placed. The sense of touch is pretty much abolished.

Not only has he a sensory hemiplegia, but he has a peculiar difficulty in his field of vision, the right lower quadrant being lost out of both fields. There is not complete hemianopsia, which is more common, but loss of a quadrant, which is, so far as I know, quite uncommon. When hemianopsia is due to a lesion in the internal capsule in the neighborhood of the optic thalamus there is generally, as in this case, sensory hemiplegia; but, so far as I know, no case has been reported in which a quadrant was cut out in both eyes from lesion in the capsule. Possibly this lesion took place at the time of the first attack, and he may have had a series of softenings in different parts of the brain. Dr. Seguin considers the cuneus as the probable centre of vision and quotes Dr. Hun's case to show that a lesion involving the lower portion of the cuneus may account for a quadrantic defect. If the pathology of this case is what it seems to be, that is, if the same lesion causes the hemianæsthesia and the loss of the quadrant, it would seem as if the optic radiations through the brain must be divisible into two parts just as the cuneus is.

The hemiplegia although well marked is not severe. He can extend his hand, although with some difficulty. With the eyes closed he has marked ataxic movements of the hand. It is interesting to note that the face is affected to a relatively considerable degree. The nasolabial fold is markedly less on the right side than on the other. That is interesting because the fibres for the facial nerve are thought to run quite far forward relatively to the other tracts in the internal capsule. The heart in this case is not diseased.

UNFAVORABLE SECONDARY EFFECTS OF SULPHONAL.

BY JOHN H. GRANT, M.D.,
Hospital Steward, United States Army, Plattsburg Barracks, N. Y.

Recently, I attended two cases of epidemic influenza (thoracic-nervous), one, a married lady of slight physique, who, after a week's illness, considered herself convalescent, but still suffering from sleeplessness — no sleep for forty-eight hours; sulphonal-Bayer, one scruple in four ounces of hot water, was given at bedtime, which, within a few minutes, caused profuse perspiration and, apparently, a profound sleep. Next morning the patient awakened to find herself unrefreshed and completely prostrated, muscles of the arms and legs flaccid, and unable to turn in bed (voluntary effort wanting) without help. In addition she complained of great constriction of the head and pain, as if, the patient expressed it, "a corkscrew had been inserted" at the vertex. For some days the patient, owing to the muscular weakness, was obliged to remain in bed; in fact, suffered a relapse of the influenza, although not having at any time left her room since first attacked.

The day following Case No. 1, the writer was called to attend a gentleman of middle age, who appeared to be convalescent from an attack of epidemic influenza — an excited imagination and inability to sleep were the subjective symptoms presented. Sulphonal-Bayer, one scruple dissolved in hot water at bedtime, was given, as in the previous case, and with the same immediate action. On calling the next morning the gentleman was found greatly prostrated, hardly able to move a limb, and with the symptoms of constriction and "corkscrew" pain at the vertex, exactly coinciding with the history given in the first case. A relapse of some severity followed, lasting nearly two weeks. In both cases a rapid, but weak and compressible pulse, was noted on the morning following the sulphonal. The sulphonal was preferred as a hypnotic agent because of the supposed "total absence of any injurious effect on the heart," even after continued use. That sulphonal, like all the other recent remedies obtained through the coal-tar series, has a depressant action on muscular structures (the heart included) is inferred; and its use contraindicated in all cases of prostration of the vital forces.

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[1] Read before the Boston Society for Medical Observation, November 2, 1891.

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Medical Progress.

RECENT PROGRESS IN THE PATHOLOGY OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, A.M., M.D.

(Concluded from No. 4, page 90.)

TABES DORSALIS.

Erb [15] has recently studied a large number of cases of tabes with reference to the ætiology, criticising the report of the German army surgeons, who found only 7.4 per cent. of syphilis in soldiers suffering from tabes. He found that 49 out of 51 officers with tabes had previously had syphilis. Out of 300 patients of the better class, who could naturally give more accurate information, in 33 there was no apparent syphilitic infection; in 267, or 89 per cent, there was infection, 190 having had secondary symptoms and 77 a chancre only. Of the 33 non-syphilitic cases, 19 had suspicious symptoms, and 24 had had gonorrhœa. In 12.3 per cent. tabes developed in from one to five years after infection, in 37 per cent. in 6–10 years, in 24.7 per cent. in 11–15 years, in 14.2 per cent. in 16–20, in 4.8 per cent. in 21–25 years, in 1.9 per cent. in 26–30 years, and in 0.7 per cent. in 30–35 years. Out of 5,500 other patients, men from the upper classes, 22.5 per cent. had had syphilis. The proportion for women with tabes was about the same as for men. Few, except those who have had syphilis, run the risk of having tabes. Out of 281 cases, in 27 per cent., syphilis was the only cause; in 11 per cent. it was associated with exposure to cold, in 6 per cent. with overwork, in 9.5 per cent. with sexual excess, in 5 per cent. with injuries, in 12 per cent. with neurotic heredity, in 13.5 per cent. with exposure and overwork, in 1.7 with exposure and sexual excess, in 7 per cent. with overwork and sexual excess, and in 4 per cent. with more than three of these factors. In the non-syphilitic cases exposure and sexual excess seemed to be most important factors. In only two cases was there direct heredity, and in only 28 per cent. was there a neuropathic taint. Sexual excess seems of some importance, being present in 15.8 per cent. Merchants and officers seemed most commonly affected, probably due to the fact that they are more frequently affected with syphilis. Although syphilis is the most frequent cause of tabes, tabes does not indicate necessarily a previous syphilis, for many cases of tabes are on record where no evidence of acquired or hereditary syphilis can be obtained.

Minor [16] has recently studied the question of the cause of paralysis in tabes dorsalis, especially the cause of transitory hemiplegia and paraplegia in the affection. He bases his study upon the case of a young woman, who, five years after an attack of syphilis, had paraplegia, with other symptoms of meningo-myelitis. During the paraplegia there was no rigidity, and the knee-jerks were absent; there was also paralysis of one abducens, contraction of the pupils, Argyll Robertson's symptom, and anæsthesia. Soon after shooting pains developed. The paraplegia yielded to anti-syphilitic treatment, but the patient remained with the classical symptoms of tabes. A year later she had severe headache, which also yielded to anti-syphilitic treatment, but it returned in three months, and, although again relieved by treatment, right hemiplegia and aphasia followed, and the patient died a month later. The autopsy showed typical degeneration of the posterior columns. In the cervical portion of the cord there were lepto-meningitis and three myelitic foci in the lateral columns, the thickened membranes containing many vessels with thickened walls filled with leucocytes. Characteristic syphilitic endarteritis was found in the cerebral vessels, with thrombosis in the basilar artery and softening in the left hemisphere. From a study of this case and of the literature, Minor dissents from the view that hemiplegia and paraplegia may be special tabetic symptoms; at least, he regards it as an open question. It seems to him most probable that in the majority of cases, as in his own, hemiplegia and paraplegia are symptoms of ordinary syphilis of the brain and cord, sometimes combined with degeneration of the posterior columns, which, in its turn, is dependent upon syphilis. He doubts if there be any true tabetic paralysis, but he is disposed to believe that all paralyses in tabes, including a part, at least, of the oculo-motor paralyses, are merely symptoms of syphilis of the cerebral nervous system.

Goldscheider,[17] reporting a case of tabes with marked weakness of the legs and moderate muscular atrophy, where the autopsy showed, beside degeneration of the posterior columns, limited degeneration of the left lateral tract, softening in the left lenticular nucleus, and degeneration of the nerves, considers again the question of the origin of paralysis and atrophy in cases of tabes. After a careful review of reported cases he recognizes, with Déjerine, that, although paralysis and atrophy are due in some cases to affections of the lateral tract and anterior cornua, in others sensory and motor symptoms depend upon peripheral neuritis.

Since Westphal some years ago maintained that if, in disease of the cord, the columns of Burdach at the junction of the dorsal and lumbar portion were involved, the knee-jerks were lost, but that if this region were intact, they were still present, it has been supposed that, in degeneration of the posterior columns affecting only the upper portions of the cord, the knee-jerks were preserved. Eichhorst [18] reports the case of a woman brought to the hospital unconscious with right hemiplegia. As the knee-jerks were absent, tabes was suspected. The autopsy showed, beside the lesion giving rise to hemiphlegia, complete degeneration of the posterior columns in the cervical and the upper two-thirds of the dorsal region. Westphal's zone, however, was intact. Further examination revealed extensive neuritis in both crural nerves, showing, therefore, that in cervical tabes the knee-jerks may be absent from coexisting neuritis.

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[15] Berliner klin. Wochenschr., July 20, 27, 1891.

[16] Zietschr. f. klin. Med., xix, 401, 1891.

[17] Loc. cit., xix, 444, 1891.

[18] Archiv f. pathol. Anatomie und Physiologie und f. klin. Med., cxxv, 25, 1891.

Raymond[19] throws some doubt upon Westphal's position. In a case of tabes of two years' duration, beginning with paralysis of the fourth cranial nerve and followed by thoracic crises, with hyperæsthetic areas, pains and muscular weakness in the legs and absence of knee-jerks, the autopsy showed that the lumbar segment of the cord was intact, and that the peripheral nerves were normal. No special mention, however, is made of the crural nerves. The interest of Raymond's case lies in the distribution of the lesion in the posterior columns, and this case is compared with the other autopsies of early cases of tabes. From these cases he finds that, although the location of the lesion is not always absolutely identical, the alterations always involve the centre of the posterior columns, in the form of a sclerosis which lessens from front to back, and which, at first, does not reach the outer edge of the cord. It is always separated from the gray matter by a zone of intact white matter, and, almost always, it involves exclusively the column of Burdach, affecting the column of Goll to a lesser degree if at all. Almost always, independently of this zone of sclerosis, there has been found at some level in the cord a smaller zone of sclerosis contiguous to the posterior median fissure in its anterior portions. In several cases the integrity of the peripheral nerves and the membranes have been confirmed. The regions first involved in tabes are those portions of the median radicular zone which have been found by Flechsig to be synchronous in development and to be the earliest developed in fœtal life. The regions which develop later are involved later in the sclerosis. True tabes is therefore a systemic affection of the central nervous system, and is independent of any change in the nerves or the meninges.

EXOPHTHALMIC GOITRE.

Möbius[20] gives an excellent digest of recent investigations in the pathology and treatment of this affection. The exophthalmos may, at the outset be unilateral. Stellwag's sign, — an unusual magnitude of the palpebral fissure and infrequent winking — is a symptom of irritation of the muscles that open the eye. Gräfe's sign, however, is present occasionally in other affections and is by no means constant in this affection. Insufficiency of convergence is not uncommon, and it is attended with no diplopia, but with merely a feeling of tension. Paralyses of individual muscles of the eye are not very uncommon. Tremor of the eyelids and nystagmus have been noted in a few cases. The cardiac symptoms are among the earliest observed. Beside the familiar rapid pulse, irregularity, arterial pulsation, palpitation, and angina pectoris may occur, and cardiac murmurs are not uncommon. Goitre is seldom absent, and it usually first affects the lateral portions of the gland. In a few cases of goitre due to other causes the symptoms of this special disease have developed. The resistance of the skin to the electric current is diminished in the majority of cases, due probably to the increased sweating, but a normal resistance does not invalidate the diagnosis, and it is sometimes present in other conditions. Pigmentation of the skin is occasionally seen, under the forms of vitiligo, bronzing, reddening and pigment spots, which are in rare cases seen in the mucous membranes. Increased sweating, loss of hair, and œdema are also noted. The respiration is often increased, cough is not unusual, and the expansion of the chest is below normal. Digestive disturbances are very common; diarrhœa is most frequently seen, usually of a paroxysmal character; vomiting, icterus, and intestinal atony are also noted. Amenorrhœa is a common symptom. Beside the subjective feeling of increased heat a definite and persistent elevation of temperature may occur. The chief nervous symptoms are a fine tremor (8–9 vibrations a second) one of the most constant signs of the disease; paraparesis, with giving way of the legs, cramps, muscular atrophy, and mental disturbances, varying from irritability, restlessness, and depression to pronounced delusional states. Among the complications are epilepsy, hysteria, paralysis agitans, diabetes, polyuria, tabes, myxœdema and syringo-myelia. Rapid pulse and goitre never fail, exophthalmos is almost always constant, and among the other most constant signs are pallor, emaciation, tremor, Stellwag's sign, and increased moisture of the skin. The great majority of patients are women in middle life, and the neurotic taint is an important factor. The course is very variable; a few cases recover, and death is usually due to the cardiac complications. The old hypothesis that the affection is due to disease of the sympathetic must be abandoned in view of recent autopsies. Changes, which Möbius regards as inconclusive, have been found in the medulla; and in a few instances the thymus gland persisted. In England iron, arsenic, and belladonna have met with the most favor in treatment. Digitalis and iodine are not only useless but injurious. Möbius himself has found most help from bromides Electricity usually gives some relief; generally in the form of galvanism, but of late faradism has proved beneficial in the hands of several observers. Baths, gymnastics, water-cures, and high altitudes have proved beneficial. In several instances treatment of nasal disturbances has given relief. In a number of cases, reported by various observers, very pronounced relief seems to have followed removal of the thyroid, and Lemke, who has operated successfully in two cases, says boldly, "Patients with exophthalmic goitre do not belong in the medical but in the surgical wards." Rest and the avoidance of accidents is imperative. Möbius rejects the theory of disease of the sympathetic or disease of the medulla, and he is not disposed to regard exophthalmic goitre as a neurosis, in the sense that hysteria and epilepsy are neuroses. The proximate cause of the disease is probably a morbidly increased activity of the thyroid gland. This hypothesis is supported by the similarity and points of contrast between exophthalmic goitre and other affections due to a diminished activity of the gland, cachexia strumipriva, myxœdema, and cretinism; by the fact that exophthalmic goitre not infrequently develops in old cases of goitre; and by the fact that operative treatment of the goitre sometimes has a material influence upon the disease. As to the cause of the primary disease of the thyroid we know as yet nothing, but it may possibly be due to some poison.

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[19] Revue de Médecine, xi, 1, January, 1891.

[20] Deutsche Zeitschr. f. Nervenheilk., i, 400. 1891.

CEREBRAL HÆMORRHAGE AND SOFTENING.

Dana[21] has made an elaborate study of 74 autopsies of cases of cerebral hæmorrhage and acute softening; 50 cases were hæmorrhage, 12 embolism, and 12 thrombosis, 14 of the hæmorrhages were meningeal, 32 affected the central ganglia, 23 of these becoming ventricular. Contrary to the usually accepted rule, two-thirds of the cases of embolism affected the arteries on the right side. In regard to the duration of life after a shock, he finds that if the hæmorrhage be ventricular the patient is likely to die in from one to three days, if cortical or central, in a week. After a week the patient is likely to live. In his cases hæmorrhage was commonest between the ages of thirty and fifty, contrary to foreign statistics, which leads him to speculate as to whether apoplexy may not occur at an earlier age in Americans. He gives the following table for differential diagnosis.

HÆMORRHAGE.	SOFTENING.
Between thirty and fifty.	Early or later age.
Hereditary history of arterial disease.	
Sudden onset with coma and paralysis occurring together, the coma deepening.	Premonitory symptoms and more gradual onset, or more transitory coma.
Initial and early rigidity.	
Very unequal pupils.	
Stertorous breathing and hard, rather slow pulse.	Presence of weak heart or endocarditis.
When convulsions exist, peculiar conjugate deviation, the eyes turning first to one side and then to the other.	Slight hemiplegia with anæsthesia.
Early rigidity.	Puerperal state.
Convulsions.	
Temperature subnormal at first, rising rapidly if case be likely to prove fatal, and temperature higher on paralyzed side.	

REACTION OF DEGENERATION.

Starr and Young[22] have made some elaborate electrical researches upon electrical reactions in degenerated muscles. Mr. Young is a practical electrician, suffering from acute anterior poliomyelitis. The reason why degenerated muscles do not respond to the interrupted current is because the current is of too short a duration. An apparatus was devised by which voltaic alternatives could be applied to the muscles, and by a commutator run by an electric motor any number of revolutions could be made. These revolutions were recorded on a chromograph. Starting at a low rate of speed it was found that the muscles responded separately to each reversal of the current. At a higher rate of speed the muscle became permanently contracted, the contraction increasing with the speed up to a certain point, when it began to relax, until finally, with a high rate of speed, no contraction could be obtained. That this failure to contract is not due to fatigue is shown by the fact that, when the speed is diminished, the muscle again contracts. The rate of alternation at which the muscle ceases to respond to a given current is called the critical rate. This critical rate was observed to become higher as the patient improved, and to be higher on the days when he felt vigorous, and these variations in the critical rate are regarded as having a distinct prognostic value. Furthermore under arsenic and strychnine the critical rate was observed to increase for about ten days, and after that to remain stationary or to decline. These tests, therefore, indicate that in giving these drugs in diseases of the cord it is better to give them for ten days, and then to stop them for ten days; resuming again in like manner. In this way the best results are obtained.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, November 14, 1891, the President, Dr. Frederick I. Knight, in the chair.

Dr. J. C. White read a paper on

SOME DANGERS OF INFECTION INCIDENTAL TO PROFESSIONAL LIFE.[1]

Dr. Edward Wigglesworth: The value and importance of Dr. White's remarks are self-evident. I wish to say one or two things in corroboration of what he has said. As to the animal parasites, I wonder whether it has occurred to physicians how commonly they are disseminated by horse-cars. I have had quite a number of cases of pediculi capitis the source of which could be traced pretty directly to horse-cars.

With regard to scabies. It is evident that scabies is increasing in a very marked way owing to immigration and to the massing together of our poorer population in tenement houses. Twenty years ago one might not see a case of scabies from one year's end to another, whereas now we have perhaps three to six cases a day in a clinic. It seems as if we were getting into a condition of things in which it was necessary for our hospitals to adopt the same plans as they do in Germany, and more particularly at the hospitals in Paris, for an immediate cure, by a practical flaying of the patient to such an extent as to get down to the neighborhood of the animal, then applying to the skin one strong inunction of something sufficient to kill the insect, regardless of the subsequent dermatitis of traumatic nature thereby occasioned and which will pass away subsequently under almost any or no treatment. We should have, I think, attached to our hospitals, baths for the treatment of scabies in this manner if we would make any headway against the disease.

Dr. White spoke of cases of dissemination of syphilis by midwives. There was one case that some twelve years ago fell under my own notice where I think seventeen people were infected by a midwife from Nova Scotia, who then returned to Nova Scotia for fear of the consequences of what she had done. I wrote to Nova Scotia to one or two of the men who had been in the school at the same time I was, and they reported her arrival there and the fact that several women had been infected by her before the disease was recognized. That merely adds one more to the cases to which Dr. White has alluded.

Now it seems to me the most important question at the present time is in regard to the establishment of syphilitic hospitals, or, at least, wards in the general hospitals. As Dr. White has shown us, leprosy has diminished markedly simply by segregation. If segregation can work that effect in the case of leprosy, how much more would it produce it in the case of syphilis, where the lesions are very numerous, often masked and so neglected by the possessors of them. It is a disease which is being daily disseminated through the community. I recently saw a case from kissing, where there was no reason to doubt the man had done anything else than to kiss. I saw a case two or three days ago on the finger, and if one chooses to look back through one's books there is no end of such instances. It makes no difference what part of the body is exposed; where there is a possibility of the entrance of the virus, there the virus, if allowed to stay long enough, is going to enter with all its lamentable consequences. Under all these conditions, with the fact patent that the disease is so easily communicable, is communicated to innocent wives and children, and knowing that the spread of syphilis must have already attained a very great degree in extent, if we are ever going to try to stop it, it seems to me we ought to begin in the most thorough way, and to try to have wards established in the general hospitals. I think there is nothing more important for the whole profession at the present time than to try to get such hospitals or wards established.

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[21] New York Medical Record, July 25, 1891.

[22] American Journal of the Medical Sciences, October, 1891.

[1] See page 105 of the Journal.

Dr. Austin Peters: I suppose, as a veterinary surgeon, the diseases transmissible from animals to man are those which particularly interest us. The reader mentions ringworm, glanders, anthrax, actinomycosis and tuberculosis. Two diseases transmissible, one from animals to man, and the other possibly transmitted in making post-mortems, not mentioned, are rabies and tetanus. The ringworm I think he did not mention so much as being transmissible from animals to man. I know a woman who a year ago had a cat which had ringworm and transmitted it to its offspring. That lady gave the kittens away and every person who had one of these kittens had ringworm appear in one or more of the family.

As regards glanders, we have more or less in Massachusetts. I suppose I see two or three glandered horses a year, and, of course, it is a very dangerous disease. I always make a practice of carrying a lot of corrosive sublimate tablets and wash my hands in a solution of 1 to 100 as soon as I am through examining one of these horses. Anthrax, I think, is very rare among cattle in Massachusetts. I have never seen a case. The only case of anthrax I ever say was with Dr. Ernst at the Massachusetts General Hospital. We saw a man with malignant pustule. I think the man worked in a tannery and carried hides on his shoulders, and his neck had been scraped with the edge of a hide and in that way he became inoculated. His neck and shoulder and left arm were tremendously swollen.

Rabies among dogs has been very prevalent the last year and a half or two years, but in many of the cases the dogs do not have a propensity to bite. Only a small per cent. of them have the violent form. Most of them have dumb rabies, become paralyzed, and die without doing harm; and consequently little attention is paid to them. Last summer I saw a man who had been bitten by a dog that had rabies. I asked Dr. Ernst's advice as to whether the man had better be induced to go to the Pasteur Institute in New York. Dr. Ernst advised it, and the man went. This was last July; the man is alive and well. Another case was where a small child was bitten by an old dog whose teeth were very dull and did not break the skin. Dr. Ernst was consulted about the case, but thought, as the skin was not broken, that there was no danger to the child. That was a year ago last summer, and the child is well to-day.

In reference to tetanus. A few years ago a young veterinary surgeon made a post-mortem on a horse that died of tetanus in Needham; he himself died of tetanus soon after, and the daily papers at that time said he inoculated himself by making a post-mortem on a horse that died of this disease. At that time tetanus was not recognized as a disease due to a bacillus, and the newspaper story was laughed at; but present knowledge would seem to indicate that it was possible.

Actinomycosis we see occasionally, but I do not think it is particularly transmissible from animals to man. It is very common in the West, particularly in Illinois.

Tuberculosis is of more interest to us all, because we see so many cases among dairy cattle, and because cows with general tuberculosis or tuberculosis of the udder can undoubtedly give the bacillus in the milk, and in that way they might infect a susceptible person or a child who is drinking a good deal of milk.

Dr. H. C. Ernst: There is one point I should like to emphasize in carrying out Dr. White's suggestion in regard to prophylaxis. He has spoken of the care the physician should exercise in washing his hands after each examination. I should like to add the caution that, so far as I know, is very little attended to, and that is that the physician should never use the same towel twice. I think there should be a very large supply of small towels, that they should never be used but once and then be thrown away and thoroughly steamed before being again employed.

The whole question is of great interest, and I think the fear of transmission of disease to the physician is perhaps more emphasized to one engaged in work like that done at my laboratory. It appears to me work of that kind gives one a certain sense of security because, I think, one realizes the best methods to handle it. From a general point of view it seems to me that Dr. White has emphasized those points very perfectly indeed.

Dr. Alexander Burr: Holding the position of inspector at the Brighton abattoir, I have seen the dangers to which many of the butchers were exposed. I think the general practitioner who is located away from the abattoir has the impression that most of the butchers have nothing but healthy animals to deal with, whereas one who has seen what they are at times called upon to dress, is surprised that there are not more cases of fatal nature due to dressing of the animals. Of the animals that come to the Watertown stock-yard, some arrive dead and some almost ready to die. Those that are dead are carted down to the dead-house, and those with any semblance of life left are generally carted to the slaughter-house to be dressed, and such as seem likely to die before the wagon reaches there, are generally shot and bled. and allowed to remain until the wagon arrives. There are, it seems to me, a great variety of infectious diseases which these men are called upon to handle.

In the case of anthrax, one of the most virulent of bovine diseases, during 1890 we had nine cases, five of which arrived there dead, and four which arrived at the yards showing symptoms of the disease. The first five were sent at once to the dead-house, and we made inoculation experiments from the blood of one of these animals upon two guinea-pigs, which died within two days. I remember going into the slaughter-house after one of the other four was drawn in, and when they get to the point where they hang the animal up preparatory to taking off the hide and withdrawing the intestines and abdominal organs, I was struck with the peculiar discoloration of the omentum. Upon looking at the spleen I found that that was considerably enlarged and of a black, soft, tarry nature. I was rather suspicious of anthrax at the time, and ordered the animal thrown away, the floors washed, and instructed the men to at once wash themselves. This seemed rather surprising to them as they had not been accustomed to wash themselves after such a case. This will probably recall to you the case of anthrax that occurred some years ago and proved fatal. They dressed one of these animals that was brought in in the wagon, and, as was their habit after washing an animal down, they run a cloth across the neck. This man had a scratch about the face. In the course of twenty-four hours he had considerable enlargement of that side of the face and glands, and showed symptoms of restlessness, vomiting, etc., and died in great agony at the end of four days.

Actinomycosis, I find, is quite a common disease there. I have seen thus far this year ninety-nine cases of it. I have never seen any ill effects from the dressing of such animals.

At the Massachusetts Veterinary College there have been one or two outbreaks of variola equinia, and in each case the students have had more or less symptoms of it in the hands from the handling of the animals. One common trouble at the abattoir is from rupture of the intestines and bladder, setting up peritonitis. It is surprising how these men will handle these animals. They seem to think there is no danger whatever.

Dr. Abner Post: There is only one thing I wish to say and that is in regard to one of the dangers from syphilis. Physicians, as a rule, have some idea of the precautions to be taken in handling a case of syphilis which they recognize as syphilis, but a good many of the inoculations among physicians occur from cases which are not recognized. They are cases either in persons whom the doctor feels sure cannot have syphilis, or still more likely in cases of syphilis of non-venereal origin. It is not safe at the present day, when syphilis is so widespread, to suppose that any person cannot have syphilis, or that any class of patients is exempt from the disease. The number of cases of accidental or non-venereal syphilis is increasing very largely, it seems to me, at least I see very many more such cases, and Dr. Wigglesworth speaks of the number of cases that have accumulated on his books. I have seen in the last fortnight at least six cases in which the syphilis was non-venereal in character. The danger from these cases is greater before the diagnosis is made. I recall very distinctly one case in which a physician inoculated himself in caring for a poor woman who had been accidentally inoculated. Her primary sore presented a curious question of diagnosis for a little while, and this physician seemed to have no idea that there could possibly be anything from which he could be injured, until the mischief was done.

Physicians ought to regard with suspicion any sore on themselves which is chronic and which fails to heal and which they do not understand. They ought to be equally suspicious of simple sores on their patients, and ought to be careful of bringing their fingers in contact with such sores.

Dr. White's caution that the physician should wash his hands after the patient visits him, even if he has not handled him, is a good one, I think. Many of these persons take pains to handle things within their reach, for instance, the doctor's books and chattels. It is a matter of surprise to me that physicians are not inoculated more frequently than they are.

Dr. J. T. Bowen: I have not had much experience with infection among professional men, but I should like to add my testimony as to the large number of extragenital chancres that are found in syphilis. During the last three weeks I have seen three cases of extragenital chancre in my office, and in two of them I feel quite certain the disease was acquired innocently. One of these patients was a trained nurse.

The only other point I had in mind which perhaps is not so directly connected with the subject as it might be, is as to scabies. It seems to me we cannot insist too much upon the importance of the recognition of scabies. I feel sure there is no other important skin disease in which physicians fail in a larger proportion of the cases to recognize the nature of the trouble. I have seen many cases of scabies treated by half-a-dozen different men without suspicion of the cause, where the diagnosis was not a hard one to one who had seen several cases.

Dr. W. C. B. Fifield: A case was published in a recent number of the London *Lancet*, of anthrax treated by ipecac, and if the case as given in the London *Lancet* can be followed by others, it would seem we have reduced the treatment of malignant pustule to a very simple matter indeed. I notice that in one of the London hospitals, I think Guy's, a horse slaughterer was admitted to the wards with malignant pustule somewhere near the eyelid. Relying on statements made by some scientists that ipecac was fatal to the bacillus of malignant pustule, the surgeon cut away a part of this malignant pustule then carefully sprinkled it with powdered ipecac, and continued so to sprinkle it, and together with this he administered every two or three hours to the patient, powdered ipecac guarded by a litttle morphia, and the result proved entirely successful. I say if this can be followed up by others, it is certainly a wonderful advance over anything we have known as to the treatment of malignant pustule, it being almost always, I think, fatal.

In regard to the non-recognition of scabies by practitioners, I confess that I think I have seen a good deal of skin disease in the course of my life, and I do not feel quite as sure as I did a good many years ago in my diagnosis. When I was at the St. Louis Hospital I used to be appointed to keep the bell-rope over my shoulder for the admittance of patients, and at that time I was very apt, indeed, to make a diagnosis by finding the burrow of the scabies insect. In those days we used to mark them out with ink, but cases that have come before me in this country do not present the burrow as often as those did, and I cannot find anything to ink. The scabies I see here seems to me somewhat different from what I saw in Paris years and years ago.

Dr. J. C. Warren: I think surgeons feel the importance more now of precautions against contagion than they used to five or ten years ago. I think the younger men show great care in dealing with contagious disease. The precautions are greater with each successive year now that we understand what contagion really means in disease, and now that many of the younger practitioners have had training in the bacteriological laboratory. Nevertheless, I find it requires all the circumspection which I possess to avoid contagion. I was one of those surgeons Dr. White alluded to as having contracted surgical tuberculosis. The diagnosis was not established microscopically, yet I had a little spot of anatomical tubercle on the dorsum of the thumb for some eight months, which I suppose was contracted from a case of tuberculosis of the hip-joint where I performed amputation and afterwards trephining of the acetabulum, and where probably I scraped the thumb with diseased bone, though at that time I was not conscious of having contracted any trauma at that spot.

I also felt somewhat disturbed last winter after dealing with a case of hydrophobia. A case entered the hospital and it was decided to try the treatment by very active bleeding, and blood was drawn from the radial artery one evening and from the vein the next day. I had one or two scratches on my fingers of the other hand and although I took precautions to cover them with collodion before the operation, there was one finger where the scratches were exposed, and blood trickled over that spot during fifteen or twenty minutes while the operation was going on. Some of the blood was taken to the bacteriological laboratory and inoculated into animals, with negative results, which was a comforting reassurance to me, and the statement was made in the laboratory that during the preparation of the cords of animals dead of hydrophobia, some of the broth thus prepared was occasionally smeared accidentally in the scratches of hands and with ordinary precautions no evil results had followed.

I should like to ask Dr. Jackson a question about a culture of tetanus bacilli which he had in his laboratory, and which he was inclined to think was dangerous if exposed by breaking of the tube. I would like to ask whether any experience in the laboratory has shown that the tetanus bacillus is more virulent when in the state of active culture than when in its ordinary state, as in dust.

Dr. Henry Jackson: I don't know as that question can be answered to-day. Mice and guinea-pigs died very rapidly when injected with the bacillus of which Dr. Warren speaks, but they may also be very easily killed by injections under the skin of ordinary garden earth and of manure. It seems to me that human beings cannot be as susceptible to the disease tetanus as are these lower animals, since if such were the case tetanus would be infinitely more common than it is. Slight abrasions of the skin constantly come in contact with garden earth, not only in gardeners and people of that kind, but in people of every class and degree. I should feel that the culture ought to be kept very carefully as we do not know whether it has increased virulent power when grown on a suitable medium. Such a condition does occur in other forms of bacteria, as for instance, the tubercle bacillus. That bacillus when grown in favorable media is much more virulent than when grown in unfavorable media. Also anthrax; so it is perfectly possible that the tetanus bacillus may just be able to exist in the garden soil, and retain its vitality, but become much more virulent when grown in a medium which is suitable for its development.

Dr. Warren: The reason I asked was, that I felt great responsibility in passing around the test-tube to the class.

Dr. Richardson: There is one source of disease in hospital wards in the summer-time which is never considered; I refer to the danger of infection by flies. It is very difficult, if not impossible, to keep flies out. Whenever a wound is exposed, especially if it is a foul one, two or three flies will at once alight upon it. It seems to me quite as reasonable that insects should carry the germs of disease from patient to patient as pollen from flower to flower. The remedy — screens — is very expensive and quite ineffectual.

In the Massachusetts General Hospital great care is taken that there shall be plenty of towels, and no surgeon there ever uses a towel a second time. Five thousand go through the laundry every week.

There is little if any danger of hand infection to-day in the dissecting-room. It is extremely rare to see any trouble of this sort in the anatomical department. I think this is because the subjects are better disinfected than formerly. I have repeatedly wounded myself in the past seventeen years without subsequent harm. We should avoid touching a wound with the fingers as strictly as possible in all surgical operations, unless the sense of touch is for some reason indispensable. I have carried out this principle for two years, and have avoided danger of infection both to the patient and to myself.

Dr. S. H. Durgin: I think this matter of disinfection is a most important one, and Dr. Ernst's remarks call to my mind the fact that disinfection with the bichloride of mercury, and in fact with all of the disinfectants in solution is performed, as a rule, with great haste. The fact is oftentimes forgotten that it requires time in contact with a disinfectant in order for disinfection to occur. I think there is a very common impression that the mere touch of a disinfectant or a few moments' contact with infected material is sufficient to do its work, which is far from being true. Even the strongest disinfectants require time to do their work. An infection of the hand may be washed away with running water and soap and the hand be made fairly clean, but the use of an ordinary towel or of a disinfecting liquid in a basin for a few moments only, does not fulfil the conditions which experiments have shown to be necessary.

I want to correct an impression which Dr. Burr unintentionally gave when he alluded to the dressing of diseased meat at the abattoir.

The handling of all diseased animals and meat is provided for in the basement of the building and none but healthy animals are allowed to be slaughtered on the main floor. If disease in the animal escapes detection by the inspector and is found on dressing, on the main floor, the meat is at once removed to the rendering tanks in another building and the floors are immediately cleaned, so that no fear need be entertained as to any injury being done to the wholesome meats.

The regulations of the Board of Health cover the entire conduct of the abattoir and their enforcement is entrusted to Dr. Burr whose care and efficiency are undoubted. For the last two years diseased and unwholesome meats have been detected and condemned at the abattoir to an extent which was not possible under the former unskilful inspection.

Dr. O. K. Newell: There is a law in this State which admits of the detention of a syphilitic case in the hospitals of public institutions. A syphilitic coming there may be detained for such time as is necessary to make it safe to liberate him, although there are no special wards as yet for the treatment of this disease.

Dr. White: On the very last day of the last session of the Legislature, the committee to which this matter was entrusted, were enabled to push the matter through, so that the measures which our committee advocated, were essentially adopted.

Dr. Fifield has alluded to not finding the burrows in all cases. If he found them in one out of five or six cases, he would, I think, find them in as large a percentage as they occur. We do not expect to make a diagnosis of scabies by burrows alone, and it is only in the small proportion of cases I mention that they are found, that is, burrows so distinct that they can be recognized beyond question.

Dr. H. L. Burrell read a paper entitled

WHAT IS A FELON?[2]

Dr. W. C. B. Fifield: A fair-sized volume might be filled with the anatomy, pathology, diagnosis and the treatment of what is called felon, sometimes known under the name of whitlow. The English surgical literature has contributed nothing, I may say, to the knowledge of this subject. Dr. Burrell would like to see the word felon abolished. I am afraid he can't. It is too firmly fixed.

To gain any knowledge of felon one must go to the French authorities who have occupied themselves with the subject for a good many years, and each one as he succeeds another has divided it into more and more classes, until the later surgical pathologists and anatomists have brought it down to three divisions. Dr. Burrell employs terms which are not familiar to me. The French surgeon, Bauchet, divides his cases into the superficial, subcutaneous and deep. By the superficial he would be understood to mean that which we know under the name of run-round. The commonest division that the French begin by is the subcutaneous, in French parlance, *bouton de chemise*, because the skin and the cellular tissue is elevated so that when the epidermis is raised by the purulent effusion, one finds a little hole beneath and leading down into the cellular tissue below the skin, through which pus escapes. The term abscess is very good, because we have the rounded place upon the top of the finger leading into an enlargement beyond. The real tendinous felon, such as Dr. Burrell has described, and to which he gives the name thecitis, is scarcely known to their pathology. Where pus exists in the sheath of the tendon, as it often does, it exists only in the two first phalanges of certain fingers. When pus exists at the terminal phalanges, the last phalanges, then it is necessarily periosteal, or inflammation of the bone, because the channel in which the tendon runs does not extend to the last phalanx. To that one must find exceptions, and the exceptions are these: in the little finger the tendon runs with the sheath to its very end; in the thumb the tendon runs with its sheath to the very end. This would follow, that, given a periosteal inflammation in the fore, middle and ring fingers, one is pretty sure that that does not follow the course of the tendon down into the palm of the hand. In fact, one never sees palmar inflammation follow disease of the terminal phalanges of the three first fingers, but let that disease attack the terminal phalanx of the little finger, and one occasionally sees the inflammation run, not only along the tendon into the palm of the hand, but crossing over extend up the tendon of the thumb to its very end, and *vice versa*, an inflammation commencing at the terminal phalanx of the thumb may end with inflammation of the terminal phalanx of the little finger. That is a point to remember with regard to felon.

There is another form to which the term of felon is applied, to which the French give the term of the carbuncular inflammation. That, I think, nothing is known about here, hardly. I don't think surgeons recognize it when they see it. This occupies the back of the hand, along the hairy surface of the fingers, but it also occurs on the palmar side of the phalanges, where persons have been pricked with bones, a large poisoned wound which oftentimes takes on much the appearance of the periosteal inflammation, and one would be much tempted to give the wrong prognosis.

There is another kind of felon where the inflammation occurs, that is, beneath the pad at the root of the fingers. When the inflammation occurs there one expects in vain that pus is going to come out this way through this part of the hand. It comes through the web of the fingers, and although a person may see this opening within the web of the fingers, yet if he seeks the true source of the pus he finds it beneath these finger-pads, where corns are often formed, called *durillons forcés* in French.

In regard to the treatment of the periosteal form, I taught the students at the City Hospital the importance of making quick incisions, and tearing out at once the phalanx from its bed, not waiting for it to be cast off. Of course, this refers to the last phalanges. In regard to the inflammations of the palm of the hand, which sometimes follow the inflammations of the phalanges of the thumb and little finger, a very good thing used to be taught by French anatomists in my day, and that was in regard to what they call the M majuscule of the palm of the hand, and that is a good guide for operation, knowing as we do where the vessels run in the fingers; at the side one may safely carry the knife as deeply as he pleases, if he does not trespass beyond the first line of the capital M. Beyond that line he will get hæmorrhage if he makes a deep incision.

There is a subject never taught here, I believe, by anatomists, and that is the palmar synovial pad, or sac, which resembles an hour-glass. By a careful dissection of the palm of the hand, getting off the palmar fascia and introducing the blow-pipe, you can inflate the whole of this pad so as to see that it extends beyond the annular ligament, and it is within this that pus forms in these destructive inflammations.

Specimen shown of finger removed from a patient with periostitis of the middle phalanx of the finger.

Dr. J. C. Warren: The etiology of these deep-seated inflammations about the bone and periosteum is an interesting one. The inflammation may be started in two ways. One is due to the bruising of the parts which disturbs the nutrition and renders it a soil favorable for the growth of the micro-organism which perhaps may be circulating in the system, that is, we may have an intravascular infection. My idea is that many of the inflammations known as felon occur without direct inoculation, but from within and through the agency of a trauma which interferes temporarily with the nutrition of the part.

Then again, the clinical history of this inflammation may possibly be known by the nature of the organism which plays a part; for instance, if we have the staphylococcus inflammation, we may have a localized abscess; if the inoculation of the streptococcus, we have the more rapid forms of spreading inflammation; therefore it may be due not merely to the anatomical nature of the part, but to the character of the virus which causes the spreading.

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[2] See page 108 of the Journal.

As to the locality, I should be inclined to regard the deep-seated inflammation, the true felon, as a periostitis in the majority of cases. It may possibly be in some of the cases an osteomyelitis, an inflammation starting from the interior of the bone itself.

In regard to the inflammations of the tendon, I should be inclined to regard them as more frequently secondary, as routes through which the suppuration may extend rather than as points of origin of the original inflammation.

In hearing what Dr. Burrell said about the treatment it occurred to me that a form of application which I use a good deal is, perhaps, as convenient and effective, and more comfortable than the hot poultice he recommended in the majority of cases, and that is carbolic acid in oil as a vehicle, in different strengths. It has a very soothing effect upon inflammation in this region, and it seems to exercise an antiseptic action. Many of the more superficial types of dermatitis or cellulitis, localized superficial inflammation, may be arrested by the application of a dressing with carbolized oil, 1 to 60 being sufficient for that purpose; and even after operations have been performed the dressing is a light one and pretty efficient. I have seen it stated that aqueous solutions of carbolic acid are dangerous to apply to the finger, the danger being that gangrene may follow. I never saw anything of the kind. I don't think pretty strong solutions of carbolic acid in oil are likely to do that.

Dr. G. W. Gay: Dr. Burrell's very careful, clear and concise paper shows that he has had long and useful experience in the out-patient department. There is where one sees felons in all stages and varieties. It seems to me his division is a practical one, and after a person has worked awhile among them he will be able to recognize and classify them under one of these divisions. I have come to regard felons as capital cases of surgery rather than minor cases. In fact, I have come to tell the students that there is no minor surgery nowadays, so much is expected of surgeons. I think as much judgment can be shown in the treatment of felon as in almost anything, so as to get the patient well quickly and without deformity. I think in the majority of cases the patient should have ether. The pus should be found, if any there be.

It should be thoroughly evacuated and the wound treated with just as careful antisepsis as one would treat an amputation or laparotomy. I have seen many a case heal up with one dressing when treated in that way, and that is far better than the old way of poulticing and parboiling and the nasty, disagreeable fingers seen in old times.

In regard to the dressing with carbolic acid of which Dr. Warren speaks, I have seen a few cases. I think there was a lawsuit a few years ago in an adjoining town, where a finger was treated by being put in a watery solution of carbolic acid. This very day a patient came to my office with the skin of the two last phalanges of the forefinger entirely denuded by having been treated by a cloth wet in carbolic acid. The carbolic oil we have used at the hospital with a good deal of satisfaction. I think, as a rule, a thorough, careful, antiseptic treatment, with incision, is the best way to manage the severe cases.

Dr. F. B. Harrington: I have been very much interested in this classification of Dr. Burrell's, and I think it is a good one. I have come, after seeing these cases daily in out-patient work, to feel that felons were merely septic wounds of the fingers. They are recorded as "septic wounds of the finger involving the bone," "the periosteum" or whatever part seemed to be most affected. I think, as Dr. Burrell has said, that these conditions very often run into each other. One can by seeking usually find the opening through which septic material has been introduced. If that is not possible, it is very easy to conceive of some minute opening being made through which septic material has passed.

The subject of destruction of tissues by the use of solutions of carbolic acid is one of great interest and importance. I have photographs of two cases in which fingers have been lost by the application of aqueous solutions of carbolic acid. This destruction of the tissues, carbolic necrosis, seems to take place most commonly where there is an incision or an abrasion of the skin.

It has seemed probable to me that the evaporation of the water had left the carbolic acid in considerable strength, and that its absorption into the tissues had caused the destruction,

Dr. Newell: It would seem to me that if the title of Dr. Burrell's paper is to be answered in any way to apply to what is a felon, it must be that either a felon is some single thing or it is not. I had always supposed surgeons understood by felon that condition which occurs when we have tenderness arising without any external or superficial indications of disease. Tenderness over the anterior surface of the distal phalanx of one of the fingers, followed by acute pain on pressure and by the subsequent well-known symptoms, being a deep-seated suppuration. Any other affections of the finger which seem to be in consequence of skin manifestations of some sort are primarily of superficial origin and cutaneous diseases. I have always described as felon the above-mentioned deep-seated suppuration, which I think never can be anything but accidental, because although bruises are constantly occurring over the distal phalanges in manifold occupations, yet this deep tenderness, followed by extreme pain, tenderness and suppuration, is comparatively rare.

Dr. Richardson: Nothing interests the anatomist more than the surgery of the hand. I think the first two classifications — the peronychias and simple inflammations of the skin — should never be confused with the more serious forms; but it seems to me very difficult to distinguish periosteal from thecal inflammations. I have taught for many years that the proper way to treat such deep-seated inflammations, whether thecal or periosteal, was by careful dissections under complete anæsthesia until the pus is reached. I think this is the only safe method. By following a fixed rule always to cut deeply we invariably open the tendon sheath. This is not only unnecessary in many cases but absolutely unsafe and indefensible, for the reason that we often infect an otherwise healthy part by indiscriminate incisions. Yet if we must lay down a rule, I have no doubt that, on the whole, we should do better to follow that of long and deep cuts. Such a rule, amended as follows, would, I think, be safe to adopt in all cases of deep inflammation in the palm or fingers, namely: A long incision should be made, under complete anæsthesia, by careful dissection, until the source of the pus is found.

In regard to the point raised by Dr. Fifield as to the anatomy of the hand, I would say that these points were taught to me long ago by Dr. Porter. I have repeatedly shown the communication between the thecal sheath of the flexor tendon of the little finger and the palm of the hand and also that between the thumb and wrist, through the sheath of the flexor longus pollicis. Dr. Mixter has made some very beautiful preparations to show this anatomical peculiarity. I have repeatedly observed the clinical confirmation of these anatomical tracts, not only by the extension of inflammation from the little finger into the palm of the hand and up to the wrist, but even extension into the terminal phalanx of the thumb. The reverse of this I have seen also; where the sheath of the flexor longus pollicis becomes infected, the inflammation extends to the wrist, breaks into the bursa of the common flexors, and appears not only in the palm of the hand but even in the tip of the little finger. I think most surgeons to-day are familiar with and apply these anatomical facts to the surgery of palmar inflammation.

Dr. H. W. Cushing: The paper has been a very interesting one to me, since I have found this classification or a similar one very satisfactory for clinical work, especially for deciding what course of treatment is indicated in each special case. The main part of the paper I understand is in reference to this classification, and I wish to add my testimony as to its value. It is important, as Dr. Burrell and later Dr. Richardson have emphasized, in regard to treatment by incision. It is often a very unsatisfactory and unscientific method to indiscriminately treat these cases by a deep incision which extends to the osseous structure. I meet yearly in my hospital-work assistants who seem to consider such treatment the only proper method and see patients who have to their detriment, been so treated. If only one rule can be given, perhaps, all things considered, such a one would be the safest, since the most dangerous cases would be properly treated; but the indiscriminate deep incision is not a satisfactory method. An accurate diagnosis of the seat of the inflammatory process and a careful dissection give more satisfactory results.

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SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

(Concluded from No. 4, page 97.)

Fourth Annual Meeting, held in Richmond, Va., November 10, 11 and 12, 1891.

THIRD DAY. — MORNING SESSION.

Dr. James A. Goggans, of Alexander City, Ala., read a paper on

ABDOMINAL SECTION IN A CASE OF CYST OF THE MESENTERY.

He stated that he had been induced to write a paper on the case from the fact that cysts of the mesentery are extremely rare, and that operations for their removal are most generally fatal. He said that he had been able to find the record of one case of cyst of the mesentery removed by enucleation, by Guyon. The patient died on the seventh day after the operation. One case operated upon by Sir Spencer Wells, the operator in that case incised and drained the cyst, but the patient died within a few weeks. Three cases operated upon by Pean, only one of which recovered. One case operated upon by Watts, but that he did not know the result in the case. One case operated upon by Cortes, who incised and drained the cyst, but the patient died from septicæmia and hæmorrhage. One case operated upon by Bantock, who removed the cyst by enucleation, and the patient recovered. The conclusion arrived at as to the origin of the cyst in that case, both by Dr. Bantock and the pathologist who examined the specimen, was that it originated from some fœtal structure, possibly some of the rudiments of the permanent kidney. He said that Dr. Greig Smith says, that he knows of two cases of mesenteric cyst removed by operation by his friend, but that he could not relate them to him as they had not yet been published. He said that the patient upon whom he had operated for a cyst of the mesentery was a young woman, twenty-one years of age, daughter of a physician of Columbus, Ga. She had not been well for two years, but did not know that her abdomen was becoming larger until three months before the operation. During those three months she had been treated for abdominal dropsy, and had suffered much uneasiness and pain in the abdomen, and at the time of the operation her pulse was 120, and temperature 100° Fahr. The cyst was quite large, occupied mostly the left side of the abdomen, extended from under the ribs into the left lumbar region, dipped downward into the pelvis, and extended three or four inches beyond the medium line of the abdomen into the right side. He said that he first removed about a quart of the fluid by aspiration, on February 7, 1891. The fluid was thin and of a dark color, and contained albumin, phosphates and chlorides. The patient was not benefited by the operation, and the abdominal section for the removal of the cyst was made on February 24, 1891.

The cyst was removed with omentum and mesentery, and loops of small intestine were embedded in its walls. An attempt was made to enucleate it, but hæmorrhage was so free that the idea of enucleation was soon abandoned. A point as remote as possible from bloodvessels and intestines was selected, the cyst incised and drained. More than one gallon of a thin dark-colored fluid was evacuated, the sac irrigated with hot water, the lips of the incised sac stitched to the upper angle of the abdominal incision and a glass drainage-tube introduced to the bottom of the cyst. The abdominal incision was then closed with silk-worm gut sutures. The author was confident that the cyst was retro-peritoneal. The time consumed in the operation was twenty-five minutes. The sac was irrigated three or four times in twenty-four hours, and the drainage-tube gradually withdrawn. The patient suffered much from nausea and vomiting, which he attributed to the close connection between the walls of the sac and the loops of small intestines. The patient made a good recovery within thirty days. He presented a picture of the patient which was taken the 1st of November, 1891, which showed her to be in perfect health.

THINNESS OF UTERINE WALLS SIMULATING EXTRA-UTERINE PREGNANCY, WITH REPORT OF TWO CASES,

was the title of a paper by Dr. Geo. J. Engelmann, of St. Louis, Mo.

The author said there are many difficulties in the way of a positive diagnosis of early pregnancy, even in cases surrounded by conditions less unusual, but they assume alarming proportions when aggravated by the curious complications which may arise in individual cases, and above all when conditions are simulated in which delay is dangerous and operative interference seems called for, when a decision is urgently demanded, a decision upon which a life, and perhaps two, may depend. Whilst the auditor may criticise at his leisure and readily differentiate the conditions depicted, it is only he who is to pronounce and to act who can realize the difficulties of this entangling and so knotty problem.

Case I. Patient, thirty-two years of age, had borne three children in the six and a half years of her married life, the youngest twenty months ago, which she was still nursing; and the menstrual flow has not as yet reappeared since the birth of this child. The patient came to his clinic for relief from a variety of discomforts from which she had been suffering more or less for the past three months. She complains of sick headache, vomiting spells, fulness of the stomach, belching after meals and an intermittent swelling of the abdomen; a pain in the groin appearing before such swelling, and a small tumor above the right groin, which she had first noticed three weeks ago, and, as she stated, then suddenly made its appearance. An examination revealed large varicose veins over the lower limbs; a solid, round, movable tumor above symphysis and right groin; the cervix low and large; the uterine body thickened lying low in the pelvis, with a certain mobility independent of the superimposed tumor; an applicator entering three and a half inches slightly ante. Notwithstanding the wine color of the pronounced cystocele and the cervix, pregnancy seemed out of the question, and the tumor was diagnosed as most probably a dermoid of the right ovary, hardly one connected with the uterine wall. In the course of an examination two weeks later, a very different condition of affairs was revealed. The tumor had disappeared, and a fœtus was found in the utero-vesical space, freely movable, apparently floating about, the small parts being distinctly felt as if underneath a wet towel both through the vagina and abdominal walls. So distinct did the small parts appear to the examining finger, that it seemed impossible to realize that even as much as a thickness of the vaginal tissues should intervene. and the abdominal walls must certainly have been very much attenuated to disclose the fœtal parts with such distinctness. Probe showed the uterine cavity free six and a half inches in length, still slightly ante, but never curving forward in the direction of the previous tumor.

The treatment for the supposed subinvolution was discontinued, the patient warned to keep quiet and to notify Dr. Engelmann upon the occurrence of any abnormal symptoms. He believed the case to be one of ectopic gestation, either within the broad ligament or in the abdominal cavity after tubal rupture, marked by the sudden appearance of the tumor five weeks ago, yet he was not sufficiently positive to warrant the immediate resort to the knife, and well that he did not do so, as persistent treatment and repeated examinations resulted in labor pains and the delivery of a five months fœtus in the most correct and natural manner.

Dr. Robert T. Morris, of New York, contributed a paper on

THE REMOVAL OF NECROTIC AND CARIOUS BONE WITH HYDROCHLORIC ACID AND PEPSIN.

The author said that it was sometimes desirable to remove dead bone without subjecting a weak patient to a dangerous or deforming operation. Attempts have been made, with some success, at clearing out this bone by a process of decalcification; but there are two chief reasons why failures have resulted, as a rule. In the first place, it was discovered that superficial layers of dead bone were decalcified easily enough, but the acids did not reach deeply through the mass, especially if portions were infiltrated with caseous or fatty *débris*. In the second place, cellulitis was pretty apt to develop during the course of treatment.

After much experimentation he had finally adopted a method of work which seemed to be complete. An opening is made through soft parts by the most direct route to the seat of dead bone, and if sinuses are present they are all led into the one large sinus, if possible. The large direct sinus is kept open with antiseptic gauze, and the wound allowed to remain quiet until granulations have formed. Granulation tissue contains no lymphatics, and absorption of septic material through it is so slow that we have very good protection against cellulitis. The next step consists in injecting into the sinus a two or three per cent. solution of hydrochloric acid in distilled water. If the patient is confined to bed, the injections can be made at intervals of two hours during the day; but if it is best to keep the patient up and about, the acid solution is thrown into the sinus only at bedtime. In either case the patient is to assume a position favorable for the retention of the fluid. Decalcification of exposed layers of dead bone takes place quickly, and then comes the necessity for another and very important step in the process. At intervals of about two days an acidulated pepsin solution is thrown into the sinus[1] and this will digest out decalcified bone and caseous and fatty *débris* in about two hours, leaving clean dead bone exposed for a repetition of the procedure. The treatment is continued until the sinus closes from the bottom, showing that the dead bone is all out.

Even in distinctly tuberculous cases the sinuses will close if apparatus for immobilizing diseased parts and tonic constitutional treatment are employed, as they should be, in conjunction with our efforts at removing the dead bone. If suppuration is free in any cavity in which we are at work, it is well to make a continual practice of washing out the cavity with peroxide of hydrogen before each injection.

It is a popular impression in the profession that living bone is not attacked by dilute mineral acids, but as it makes a good deal of difference whether the impression is correct or not, he experimented as follows: A portion of the keratinoid layer was removed from the carapace of a turtle (nanemy's guttatus), and the animal was then placed tail downward in a glass of five per cent. hydrochloric acid solution. In the glass he placed also a segment snipped from the plastron of the turtle, and a transverse segment from an old dry humerus of a man. The piece of humerus was completely decalcified in six hours; the segment from the plastron was soft in about twenty hours, and the carapace of living bone was decalcified at the exposed part in thirty hours. He was then curious to know what effect the acid had had upon the blood-vessels of the decalcified bone; and Dr. Smith of the laboratory of the Post-Graduate Medical School made for him several sections of the carapace, which included both decalcified and healthy bone. Investigation showed that all of the blood vessels were destroyed wherever the bone was softened, and the action of the acid had extended farther up along the larger blood-vessels than elsewhere.

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[1] He uses distilled water, ℥ iv; hydrochloric acid, m. xvi: Fairchild's pepsin ʒ ss.

The difference in time between decalcifications of the dead bone (six hours) and of living bone (thirty hours) is significant; a five per cent solution of the hydrochloric acid having been used. If we use a two or three per cent. solution of hydrochloric aicd, a wall of lymph and of granulation tissue is thrown out upon the surface of the living bone for protection, and only dead bone is attacked. This at least has been his observation in several cases in which the results of treatment could be easily watched.

Dr. Landon Carter Gray, of New York, in a paper entitled

THE PRESENT STATUS OF CEREBRAL SURGERY,

touched upon the modern aspect of intracranial surgery. The speaker first passed in review our present knowledge of localization of functions of the brain, stating that we were well acquainted with the functions of the motor area, of the third frontal convolution, the frontal lobe, the island of Reil, the two upper temporal convolutions, the cuneus, certain portions of the basal ganglia, the base of the brain and the cerebellum, and that we knew nothing of, or had still under discussion, the question of the localization of the centres for the sensations of touch, pain, muscular sense, temperature sense, most of the parietal lobe, and most of the tempero-sphenoidal lobe with the exception of the olfactory lobe. He stated that operations for fracture of the skull with or without hæmorrhage, for abscesses, and for tumors that were removable and localizable were usually successful; those for so-called idiopathic epilepsy were utterly valueless, as were also those for epilepsy supposed to be due to genital or ovarian irritations, whilst those done for epilepsy due to removable and localizable lesions of the intracranial contents were usually successful so far as the lesion was concerned, although it was a grave question as to whether the epileptic habit was ever cured. The latest operation for idiocy supposed to be due to premature ossification of the fontanelles was still under discussion and consideration, the cases being too few and too recent to permit of any conclusion; whilst the operations for hydrocephalus and for epilepsy due to such early infantile and fœtal lesions as parencephalus, hæmorrhage and meningitis were indefensible. He further impressed upon surgeons the great difficulty that there often was in finding a subcortical lesion of the centrum ovale that was deep-seated or small; and the fact should be borne in mind that there might be no decussation of the motor fibres from the hemispheres, so that a lesion would be found upon the same side as the paralysis.

THIRD DAY — AFTERNOON SESSION.

Dr. Christopher Tompkins, of Richmond, Va., followed with a paper entitled

A CASE OF INDUCED ABORTION FOR RELIEF OF NAUSEA AND VOMITING, WITH REMARKS.

On August 1, 1885, he was called to see Mrs. J., aged twenty-four, and, as nearly as could be ascertained, three and a half months pregnant with her first child. Patient was born in the mountainous part of Virginia; she had an active out-door life and grew up to be a woman of good height and of round full figure. January 14, 1884, she was married. While in the City of New Orleans, in stepping from the platform of a car, she sprained her ankle. This, although treated immediately by a physician of that place and subsequently in this city, caused her great suffering. Finally, refusing to yield to the usual treatment, the part was put in a plaster cast; she went about on crutches, and after many months recovered. In the mean time she became pregnant, and from the first was attacked with nausea and vomiting. Mild in the beginning, it gradually increased in gravity, till she sent for him on the 1st of August, 1885.

Her husband stated that she had had a fever for two weeks. Dr. Tompkins found her in bed, and learned that she had been there for days; her figure not robust, and her face thin and attenuated. What little she had eaten in the past ten days or two weeks had been apparently rejected, her temperature one degree above normal; tongue foul; sordes on the teeth, and the breath of a sour and bilious odor. The pulse was fairly good, considering her condition. Even the mention of food was distressing to her, and the sound of the dinner bell, though far off from her, caused such distress, that its ringing was discontinued by the family. The bowels had throughout her pregnancy been constipated, only moving once in two or three days. Although continuously retching, very little or no blood had been seen in the material vomited, except on two occasions, and then not a great deal, and such as there was, was of a florid scarlet color. No medicine had been given and no treatment taken, except the occasional use of lime water, which she said "did no good."

The patient did not improve up to August 7th, when Dr. Tompkins, thinking the case one of the greatest gravity, and that the question of abortion could no longer be deferred, invited Drs. J. B. McCaw and Aaron Jeffery to meet him in the afternoon in consultation. All agreed that abortion must be produced, in order to give the patient a last chance for her life, which was done.

Remarks. — The case is reported principally because it was an unsuccessful one, and because he wished to disabuse the minds of those who are not experienced in such operations of the notion, commonly believed and often expressed, that the induction of abortion for the nausea and vomiting of pregnancy is in skilful hands an undertaking devoid of danger and necessarily attended by success. In this case, he is of the opinion that death was the result of the protracted debility and enfeebled constitution, due to her long confinement and suffering, caused first by the injury to her ankle, from which she had not recovered when she became pregnant and was attacked by nausea and vomiting, this last continuing till her death. Under such circumstances the outlook was indeed very unfavorable, for to the shock of operation and depression incident to the use of chloroform, there was added fever and protracted prostration, both from injury to the ankle and from want of nutrition, the result of the long-existing nausea and vomiting. He had before and since operated on women for the nausea and vomiting of pregnancy and with success, whose apparent condition was much worse than that described in the above case, but without the history of a previous injury or disease.

The prognosis, always unfavorable, ought, when the case is so complicated, to be of the most guarded kind. The practitioner should not, however, hold his hands on this account, for the operation affords the poor sufferer the only opportunity of relief. The author uses metal dilators instead of tents, and completes the operation at one sitting. He is likewise convinced that the least possible chloroform used, the better the result.

The following officers were elected: President, Dr. McFadden Gaston, Atlanta, Ga.; First Vice-President, Dr. Cornelius Kollock, Cheraw, S. C.; Second Vice-President, Dr. Geo. Ben Johnson, Richmond, Va.; Secretary, Dr. W. E. H. Davis, Birmingham, Ala.

Place of next meeting, Louisville, Ky., second Tuesday in November, 1892. Chairman of Committee of Arrangements, Dr. L. S. McMurtry, Louisville, Ky.

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MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated meeting held January 25, 1892.

DISCUSSION ON EPIDEMIC INFLUENZA.

Dr. Edward G. Janeway opened with some remarks on the diagnostic features of the affection. An isolated case of it, he said, could not be put into the category of having fixed characteristics, but a number of cases taken together justified the diagnosis of epidemic influenza. Having spoken of the numerous phases assumed by the disease in different instances, he said that there was a tendency, in the presence of the epidemic, to class ordinary diseases under the head of influenza. Follicular tonsillitis, pneumonia and meningitis were some of the affections sometimes mistaken for it, and the early symptoms of small-pox might also be taken for those of influenza.

Dr. R. W. Wilcox thought that epidemic influenza has certain marked characteristics which clearly distinguish it from other diseases. Among these he mentioned: (1) the suddenness of the attack; (2) the multiplicity of the symptoms; (3) the variability of the symptoms; (4) an amount of depression not at all proportionate to the physical trouble; and, (5) the progress of convalescence, which is more tardy than in other diseases of the same severity.

Dr. Wm. H. Draper spoke on the complications and sequelæ of influenza, and stated that in his opinion most of the so-called complications were in reality manifestations of the disease.

Dr. T. R. Pooley, in speaking of the eye complications, said that it would take much less time to talk about the diseases of the eye which were not thought to occur in the grip, or as sequelæ to it, than of those which had been mentioned in this category, and he expressed the opinion that influenza was held to blame for many diseases of the eye with which it had nothing whatever to do.

Dr. O. D. Pomeroy spoke of the ear complications, and Dr. Beverley Robinson described a curious aural condition he had met with, in which the patient could not hear words spoken in an ordinary tone, but could distinguish the ticking of a watch placed at some distance from the ear.

Dr. H. D. Chapin, who spoke on influenza in children, coincided in the opinion generally held that they are less subject to the disease than adults. He called attention also to the necessity of caution in diagnosing as influenza diseases entirely distinct from it, and referred to an instance in which a whole family of children had been exposed for several days to measles, because a case of that disease was declared to be influenza.

Dr. Landon Carter Gray spoke of the nervous phenomena of the disease, and Dr. Francis Delafield, of the treatment. Dr. Delafield thought there was no treatment to prevent it, and none to affect its course, any more than there was in other infectious diseases. The chief things were that the patient should be kept in bed and properly nursed. There were, however, the frequent complications which called for interference. For the headache and neuralgic pains phenacetine was most relied upon. The bronchial affections should be treated in the ordinary way, and when there was a tendency to congestion of the lungs, it was advisable to work on the circulation, giving small and frequent doses of digitalis or aconite, with or without strychnia, and perhaps alcoholic stimulants.

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Recent Literature.

Age of the Domestic Animals: Being a Complete Treatise on the Dentition of the Horse, Ox, Sheep, Hog and Dog, and on the Various other Means of Determining the Age of These Animals. By Rush Shippen Huidekoper, M.D. Two hundred engravings. Philadelphia and London. 1891.

Dr. Huidekoper's reputation is *primâ facie* evidence of the value of this book. As would naturally be expected, the greater part of it is devoted to the dentition of the horse. The various conditions of the teeth are illustrated by a very large series of figures, rather grandiloquently called on the title-page "engravings." Much space is given to the important subject of dental irregularities. Under this head are included, not only anomalies of development and structure, but the effects of too much or too little use, of "cribbing" and also fraudulent changes. The determination of the age by the horns is discussed in the cases of cattle, sheep and goats. There is also a short chapter on the age and teeth of man, which contains nothing new excepting the statement that "from a practical point of view the question of the age of man is one of sentiment." In a scientific work it strikes us as very far from a sentimental question.

The chapter on the duration of the life of the horse begins as follows: "According to Buffon, the duration of the life of the horse is, as in all other species of animals, proportionate to the duration of its growth. Man, who is fourteen years in growth, lives six or seven times that length of time; that is to say, he may live to ninety or one hundred. The horse, which requires about four years to attain its growth, may live six or seven times that length of time, that is, to twenty-five or thirty years." The part of this which applies to man is too silly for criticism. The introduction of such passages tends to shake the reader's confidence in statements on matters with which he is unfamiliar.

A law has been passed at St. Petersburg that a doctor who takes charge of an accident which he may happen to attend on the street shall be paid by the police in proportion to the importance of the case.

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THURSDAY, FEBRUARY 4, 1892.

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TYPHOID FEVER IN CHICAGO.

Among the manifold advantages of Chicago from a sanitary standpoint, the superiority and perfection of its water-supply may well be reckoned as one of the greatest. Situated on the shore of one of the most magnificent bodies of fresh water on the face of the earth, its opportunity of securing an unlimited supply of this great necessity of life is unequalled. The purest water in the world and the best adapted for culinary and domestic purposes is to be had for the cost of pumping, and the consequence is that, this opportunity having been duly improved, the city to-day enjoys the supreme advantage of a constant supply of this most essential element.—First paragraph of a four-column illustrated article in the Chicago *Sunday Tribune*, December 13, 1891.

This article goes on to compare the water-supply of Chicago with those of other great cities of the world to the advantage of the former.

Health Commissioner Ware said yesterday (January 29th): I am certain that typhoid fever is not epidemic in Chicago, though I will say that it is more prevalent than I would wish. I think that fact is not unconnected with the condition of the river, due to the lack of sufficient pumping capacity at Bridgeport. It would be useless to deny that the river flows at certain periods right into the lake. I need not say how dangerous such a state of things is to the health of the city. The shore, too, has been growing towards our main crib. How I wish that four-mile tunnel could be in operation next summer, and that all our water-supply could be obtained from a part of the lake beyond pollution. — Chicago *Tribune*, January 30th.

There is something pathetic in Health Commissioner Ware's expressed anxiety for the extension of the water-tunnels into the lake and for the completion of the four-mile tunnel. Everything urged by Dr. Ware for the improvement of the water-supply in quality and for the increase in quantity ought to have been done months and months ago. . . .

There is no immediate prospect for that relief which the Health Commissioner so pathetically urges. Cannot the city authorities take note of the emergencies? Cannot Mr. Onderdonk hurry up the work on the four-mile tunnel so that it may be available next summer? Will not the Council, instead of wasting money in extending the north shore tunnel, use the money in extending the existing tunnels beyond the two-mile crib to a region of absolutely pure and wholesome water in the lake which the shore pollution cannot reach?

The four-mile tunnel, the completion of which is looked forward to with so much anxiety, since it is plain that the people must rely on it for pure water, as the Drainage Board will do nothing for them . . . —Editorial columns, Chicago *Tribune*, January 31, 1892.

A paper entitled "Statistics on Typhoid Fever in Chicago," by Prof. Wm. T. Sedgwick, of the Massachusetts Institute of Technology, and Mr. Allen Hazen, chemist to the Massachusetts State Board of Health at Lawrence, was read before the American Statistical Association on January 22d, and on the same day an abstract of the paper was published in the Chicago *Tribune*.

At the end of this original article on January 22d, Health Commissioner Ware, of Chicago, pronounced the statement "ridiculous," and when asked if there had really been 2,000 deaths from typhoid fever in 1891, as therein stated, said: "You may most emphatically deny the assertion; this is done probably to hurt Chicago, the assertions made are so ridiculous that they answer themselves. There is no sort of an epidemic of typhoid fever, and has not been. This scare is started to frighten people from coming to the World's Fair." But the *Tribune*, January 23d, showed from the returns at the Health Department that the figures given by Messrs. Sedgwick and Hazen were correct, and that there had been 219 deaths from typhoid fever already in January, 1892. Their conclusions are inevitable. The State of Illinois has appointed Dr. John H. Rauch, formerly Secretary of the State Board, to investigate and report on the subject.

We have headed these remarks by parallel columns merely to show the need of such an exhibit of the actual facts as that made in the paper of Messrs. Sedgwick and Hazen, but have nothing except praise for the instant and candid recognition of this by the Chicago *Tribune*.

Messrs. Sedgwick and Hazen illustrated their paper by several tables of figures and two diagrams showing most graphically the mortality percentages of typhoid fever in Chicago, Philadelphia, New York and Boston between 1870 and 1891, and the rate of subsidence of the disease in Chicago after 1872, 1881, and 1885, in each of which years the number of cases was very large. We regret that we cannot reproduce these, but append an abstract of the paper furnished us by the writers.

It does not appear to have been generally recognized that within the last two years, and especially within the last nine months, typhoid fever has been unusually prevalent in the city of Chicago. The fact, however, is that an epidemic of really alarming proportions has prevailed in Chicago within the last year, and the latest returns indicate that that city is still suffering very severely from this important disease. Inasmuch as a World's Fair is soon to be opened in Chicago, this unfortunate condition becomes of more than local consequence, and should excite grave apprehension. If any remedy exists it ought to be found and applied without delay. It is especially important that the sanitary condition of Chicago in 1893 should be above reproach, because that of Philadelphia in 1876 was not. At the time of the Centennial Exhibition there was much complaint of the sanitary condition of Philadelphia. Physicians can testify that numerous cases of typhoid fever, which came under their observation in 1876, appeared to be plainly traceable to infection received in Philadelphia.

There was apparently ground for suspicion and complaint, for the official report of the Board of Health of Philadelphia, for 1876, relates that before the opening of the exhibition "no little anxiety and solicitude for the welfare of the city was manifested, since many of the conditions favorable to the propagation of disease were present." This report also states that "no feature in the mortality records of 1876 is more interesting than the increase in the number of deaths from typhoid fever. There were 773 deaths from this disease, a number which is nearly double the mortality of the previous year, and which has not been approached in value since the year 1865."

By comparing the population of Philadelphia, in 1876, with the number of deaths from typhoid fever, we find that the death-rate from this disease for the Centennial year was remarkably high, namely, 9.36 per 10,000 inhabitants. The percentage of all deaths due to typhoid fever was also very high, namely, 4.09. Since 1876 there has been a great increase in the population of Philadelphia, and therefore in the annual number of deaths; but the number of deaths from typhoid fever per annum has never been as great as in that year, excepting once, and that only after twelve years, in 1888.

In the city of Chicago there has been for many years a large amount of typhoid fever. It was abundant, for example, in 1872, in 1881, in 1885 and in 1886. Between 1886 and 1890, however, it was less common, but in 1890 the death-rate from typhoid fever suddenly rose to a height almost exactly the same as that reached by Philadelphia in 1876, namely, to 9.16 deaths per 10,000 inhabitants, and 4.16 per cent. of all deaths which occurred in that year. In other words, typhoid fever prevailed as extensively in Chicago in 1890, as in Philadelphia in 1876. The actual number of deaths in Chicago, in 1890, from typhoid fever was, 1,008.

Remarkable as these figures were, they proved to be only the prelude to others still more remarkable in 1891. During the year just ended, Chicago has reported 1,997 deaths from typhoid fever, giving the prodigious death-rate from this disease of 16.64 per 10,000 of population, and a percentage of all deaths of 7.19. In the month of May alone, there were 408 deaths from typhoid fever reported. This is more than one-fourth as great as the whole number of deaths from this disease reported by the State Board of Health for the entire year before in the whole State of New York, containing six millions of inhabitants, and including two of our largest cities, New York and Brooklyn. In the single month of May, 1891, there were more deaths from this disease in the city of Chicago than in the city of New York during the whole twelve months of 1888 or 1889 or 1890 or 1891. In 1891 there were 383 more deaths from typhoid fever in Chicago than were reported in the previous year in the whole State of New York with five times the population, and nearly 1,400 more deaths than in London, with three and one-half times the population of Chicago.

As has just been stated, the whole number of deaths from typhoid fever in Chicago, in 1891, was 1,997. If we multiply this number by ten we shall have an approximate estimate of the whole number of persons affected by this disease during the year, namely, about 20,000. This indicates that more than one and one-half per cent. of the whole population was affected in 1891 by a disease which is now classed as preventable.

It does not seem probable that these extraordinary figures can be surpassed, or even maintained in 1892 or 1893, but as an indication of the sanitary condition of Chicago, they must be a source of constant anxiety to its citizens, as they certainly are a menace to the sanitary success of the World's Fair.

We may now turn to an examination of the history of typhoid fever in Chicago. The necessary data are given in the official reports of the Department of Health of the city of Chicago. We cannot agree with the author of the statement in the annual report of 1872, that "although the overcrowding and barrack-life incident to the months following the great fire in October, 1871, brought its legitimate result in an increased death-rate, during the year no epidemic existed." The fact is, that in that year the death-rate from this disease and its percentage of mortality to the total mortality were greater than they have ever been since that time, until the present epidemic had developed. After 1872, there was a marked improvement until 1879, when there was a slight increase, followed by a great increase in 1881. The fever then slowly subsided until 1885, in which year there was another marked increase, followed by a decline in 1886, 1887, and in 1888. In 1889, a rise began which obtained the proportions of an epidemic in 1890, and reached the great height already referred to in 1891. The epidemic of 1872 fell off very rapidly in 1873; that of 1881 declined much more slowly; that of 1885 also slowly, so that unless some special effort is made to hasten the decline of the present epidemic, there is fear that typhoid fever may continue to be very prevalent in Chicago in 1892 and 1893.

In the next place we may inquire whether typhoid fever has been, on the whole, increasing or decreasing in Chicago. From 1871 to 1880 the average death-rate per 10,000 inhabitants, from typhoid fever, was 5.86. From 1881 to 1890, 6.75. The conclusion is inevitable that typhoid fever has, on the whole, increased in Chicago since 1880, while, within the last two years, it has risen to an extraordinary height.

We may next inquire how Chicago regularly compares with other cities in respect to mortality from typhoid fever. Here we naturally turn first to the larger American cities. We may begin with New York and Philadelphia. The averages of these cities are as follows: Chicago, 1870–1891, death-rate per 10,000, 6.90; New York for same period, 3.19; Philadelphia, 6.24. The death-rate from typhoid fever of all the cities of Massachusetts, 28 in number, for the twelve years 1878–1889 was 4.62 per 10,000 inhabitants, that of Boston being 4.32. The rate for Chicago during these years was 5.85. Turning to foreign cities, we may compare the following with Chicago:

Dresden, 1889,	mortality	per 10,000	inhabitants	0.8
Leipsig, 1889,	“	“	“	1.7
Munich, 1889,	“	“	“	1.1
Cologne, 1889,	“	“	“	1.6
Berlin, 1889,	“	“	“	2.0
London, 1889,	“	“	“	1.4
Chicago, 1889,	“	“	“	4.7
Chicago, 1891,	“	“	“	16.6

From the foregoing facts it appears: (1) that typhoid fever has been excessive in Chicago for many years; and (2) we have already shown that it is, on the whole, increasing; while (3) within the last two years it has risen to extraordinary proportions.

In order to avoid misapprehension it ought to be stated, however, that the total death-rate of Chicago, as that term is best known and most often used, is not excessive. It has had since 1881 fewer total deaths in proportion to its population, than New York, and a much lower general death-rate. In respect to typhoid fever, however, the case is exactly reversed.

Although the paper is essentially statistical, the authors suggest that considering the prevailing views regarding the causation of typhoid fever, the question should be raised whether the water-supply is above suspicion. They prove briefly that this is by no means the case, for the paper closes with a number of quotations from the official reports of the health department of Chicago and the Illinois State Board of Health, describing the unsanitary condition of the Chicago River, and proving that the water-supply of Chicago is occasionally polluted with sewage. The authors urge, in view of all the facts, that immediate action be taken to check the epidemic and especially to protect the purity of the water-supply.

It is gratifying to learn that active measures are being taken to protect the water-supply by the opening of a new crib out some four miles, and by deepening the drainage canal towards the Mississippi.

The attitude of the *Tribune* is an indication that the public of Chicago will insist on having the necessary improvements carried out, and that they will not rest contented with the mere assertion that they have at their doors the best and biggest supply of drinking-water of any city in the world. In view of the World's Fair, and for those who realize how widely a few cases of typhoid fever may distribute the disease over a whole country, this is no longer a local question. The health commissioner of Chicago is ill advised in announcing that such a statement of figures from his own office is published "to injure Chicago"; or in attempting to break its force, as he now does, by calling in question the accuracy of the returns made by Chicago doctors, or attributing the cases of typhoid which he knows have occurred, to the bad air of the alley-ways! There probably are inaccurate returns of disease in Chicago as in other large cities, and there probably is some neglect to return at all; but we doubt if the Chicago practitioners are so pre-eminently inaccurate above those of other cities, or take especial satisfaction in returning this particular disease.

Given an unusual percentage of typhoid fever all the time, or at frequently recurring intervals in a particular city, and it is almost certain that something is wrong either with the water-supply or the drainage, or both. Bad drains and bad water are never so dangerous as when they are persistently proclaimed to be good.

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MEDICAL NOTES.

Vaccination in Italy. — On the first of the year, a new vaccination law went into force in Italy which makes vaccination compulsory. There is also a provision for re-vaccination under certain conditions.

The South American Medical Congress will meet this year in Cuba, in October, in order that it may be held at the same time with the celebration in honor of the four-hundredth anniversary of the discovery of America, to be held in that city.

The Therapeutic Gazette. — Dr. R. A. Smith has retired from the editorship of the *Therapeutic Gazette*, which will hereafter be under the charge of Dr. H. A. Hare. Dr. G. E. de Schweinitz will be editor of ophthalmic and aural therapeutics, and Dr. Edward Martin editor of surgical therapeutics.

The Influenza in London. — During the week ending January 16th, the number of deaths due directly to the influenza rose to 271 from 95 the previous week. This does not include the large number of cases in which influenza was reported as a complication. During the week ending January 23d the number of deaths primarily due to influenza rose to 506, and the total mortality to more than double the usual rate. There seems to be an excitement almost amounting to a panic among certain classes in the community. Since the death of the Duke of Clarence, the government has decided to institute an official investigation of the disease, with the view of taking any possible measures for its limitation. The Archbishop of Canterbury has issued a special prayer against influenza.

Lady Brooke's Remedy for Influenza. — It is reported by cable from England that Lady Brooke has been trying to raise a fund for the gratuitous distribution of about 2,000 bottles of brandy among the poor who were suffering from influenza, on the theory that stimulants are the best treatment for the disease. As might be expected, the project did not meet with a very favorable reception.

The New York City Insane Asylums. — The committee appointed by the Mayor of New York to visit the insane pavilions on Ward and Blackwell's Islands, have found that in all the eleven buildings provided for patients in different stages of insanity, there are accommodations for 1,091 at the utmost, yet there are now in the institution 1,817 patients crowded close together. Every single room in the main asylum has from four to six beds in it, when there should be only one. Even in the corridors, which were originally provided with alcoves to be used as sitting-rooms, beds are ranged along the walls so close together that the patients have to climb in over the foot-boards in order to get in at all. In what is known as the violent pavilion, about 280 unfortunates are crowded into rooms originally intended for 190 persons.

Laboratory of Hygiene, University of Pennsylvania. — It is announced that the laboratory of hygiene of the University of Pennsylvania will be opened for practical work on February 1, 1892. The work of the laboratory will be under the charge of the director, Dr. John S. Billings. Dr. A. C. Abbott has been appointed first assistant, and Dr. Albert A. Ghriskey, assistant in bacteriology. A course in practical hygiene and an elementary course in bacteriology, each of eight weeks, have been established.

NEW ENGLAND.

Assistant Port Physician. — Francis A. Lane, M.D., has been appointed assistant port physician by the Mayor in place of Rufus E. Darrah, M.D., resigned.

Last Week's Death-rate in Boston. — The number of deaths in Boston last week was 225, against 181 the corresponding week last year. The death-rate was 25.4. The number of deaths from consumption was 35, pneumonia 39, bronchitis 16. The number of persons over sixty years of age was 59. Seventeen deaths were reported as due to influenza, of which twelve were complicated with some other disease. Since the week ending January 9th the fatal results of the epidemic have been steadily diminishing.

Bequests to Institutions in Salem. — By the will of the late George Peabody, of Salem, $5,000 is left to the Salem Hospital, $2,000 to the Peabody Institute, $1,000 to the city of Salem, the income to be used to purchase fuel for the very poor.

The Use of Tobacco by Minors. — The Committee on Public Health of the Massachusetts Legislature will give a hearing to parties interested in a petition for legislation to prevent the use of tobacco by persons under sixteen years of age, on Friday, February 5th, at 11 o'clock.

Hospital for Epileptics. — The Governor of Massachusetts has sent a message to the House recommending a State institution for adult epileptics, with the report of the committee of the Massachusetts Medical Society appointed to consider the matter. The State Board of Lunacy and Charity has indorsed the recommendation. In conclusion, the governor says: "In my judgment, the facts and reasons stated in the communication entitle the recommendation to your early and favorable action. I specially commend the suggestion that the institution, if established, should be in the form of cottage hospitals."

Massachusetts Association of Boards of Health. — The annual meeting of the Association was held in Boston last week. Several papers were read and the following officers were elected for the year: President, H. P. Walcott, M.D.; Vice-presidents, S. H. Durgin, M.D., S. W. Abbott, M.D., Secretary, L. F. Woodward, M.D.; Treasurer, J. B. Field, M.D.

Drinking-Water of Massachusetts. — The report of the State Board of Health recently transmitted to the Legislature shows that the low water in the streams of the State during the summer and autumn has been accompanied by a much greater degree of pollution in those streams which receive sewage, than has been noted at any time since 1887. During the summer a large number of the spring waters sold for drinking purposes, were collected for examination and careful inspection of the surroundings of the springs were made. Some of these springs, situated in populous districts, were found to have a large amount of pollution. Much time has been spent during the year in the study of typhoid fever in relation to the water-supply. The Board recommends the continuance of the investigations already commenced, and also others indicated as desirable. For these purposes, it is estimated that $27,000 will be required.

Mortality of Newport, R. I. — During the past year there were 431 deaths reported, a large increase in the number for some years passed. The annual death-rate was twenty-one per thousand as against seventeen in 1890, and less than sixteen for three previous years. There was a marked increase in the number of deaths due to pneumonia and senile asthenia, undoubtedly due to influenza. The average age of the decedents was forty years, the average age of those dying from consumption was thirty-seven years.

NEW YORK.

A Diagnosis of Alcoholism. — A coroner's jury has censured the ambulance surgeons of the Chamber Street Branch of the New York Hospital, for refusing (on the ground that it was a case of drunkenness) to take to the hospital a man who was suffering from a fracture of the skull resulting from a fall into the hold of a steamship. The verdict in the case concludes as follows: "We recommend that in cases where there is any doubt whether an injured person is suffering from alcoholism or not, the same should, under all circumstances, be taken to an hospital for a closer examination."

State Care of Insane. — Mayor Grant has appointed an advisory committee of prominent citizens, one of them the President of the Tax Department, to report upon the advisability of the city's availing itself of the provisions of the law passed in 1890, relative to State care of the insane, which permits the city to turn over its insane to the State, if it should not desire to continue to care for them itself. Under the statute, if the city elects to entrust its insane to the care of the State, it must also transfer to the State all the buildings it now has in use for this class of dependents. In his recent annual message, the Mayor showed that the cost to the city of maintaining its insane is about

$500,000 a year, and that the overcrowded condition of its asylum buildings renders necessary the early erection of more, unless the whole matter is turned over to the State.

Health Officer of the Port.— The Governor has appointed Dr. William T. Jenkins, of New York, to the important position of Health Officer of the Port, which has been held since 1880 by Dr. William H. Smith. While this is a political appointment, it is generally regarded as an excellent one as far as the qualifications of the new officer are concerned. Dr. Jenkins was born at Holly Springs, Mississippi, in 1855. He studied medicine at Bellevue Hospital Medical College, New York, and at the University of Virginia, from the latter of which he graduated. He settled in New York. In 1882 he received the appointment of Coroner's Physician, and afterwards became Deputy Coroner, in which position he is now serving his fourth term. By his appointment Dr. Jenkins becomes *ex officio* a Commissioner of the New York Board of Health, the other members of which are Charles G. Wilson, President, Dr. Joseph D. Bryant, and President Voorhis of the Police Board.

A Case of Snake-Bite.— While handling her reptiles the other day in a dime museum on Fourteenth Street, a female snake-charmer was bitten in the cheek by a large rattlesnake. One of the other performers promptly put his lips to the wound and sucked out as much of the poison as possible, and after being well dosed with whiskey the woman was taken to the New York Hospital, where she is in a fair way to recovery. It is stated that this is the third time that she has been bitten by a rattlesnake.

Annual Election of Officers. — At the annual meeting of the New York County Medical Association held January 18th, the following officers were elected: President, Dr. S. B. Wylie McLeod; Vice-president, Dr. Wm. T. White; Recording Secretary, Dr. P. Brynberg Porter; Corresponding and Statistical Secretary, Dr. Augustus D. Ruggles; Treasurer, Dr. John H. Hinton; Member of the Executive Committee, Dr. Beverhont Thompson. The Statistical Secretary reported that during the year the membership had been increased by 148, and that there were now 701 names on the roll. At a meeting of the Section on General Medicine of the Academy of Medicine, held January 19th, Dr. A. A. Smith was elected Chairman and Dr. Charles E. Quimby, Secretary. The Board of Directors of the New York Post-Graduate Medical School and Hospital has re-elected the following officers for the ensuing year: President, Dr. D. B. St. John Roosa; Vice-president, Dr. George H. Fox; Secretary, Dr. Clarence E. Rice; Treasurer, Dr. L. Bolton Bangs. Four hundred and eighty-three practitioners of medicine, from the United States, Canada and the West Indies, attended the courses at the school during the past year, and as the present quarters are inadequate for the growing wants of the institution, the Directors propose erecting a new college building as soon as the necessary funds can be secured.

Miscellany.

BICARBONATE OF POTASH IN INFLUENZA.

Some months ago Mr. John Crerar[1] advocated the use of bicarbonate of potash in large doses, thirty grains every two or three hours, at the onset of an attack of influenza, on the theory that the blood, if made more alkaline, would resist the invasion of the micro-organism. His conclusions were that, "if used before the attack it prevents the disease. It destroys the power of the disease within twenty-four hours, generally within four or six hours. The strength is conserved, and the convalescence is short and satisfactory. Sequelæ are conspicuous by their absence. The death-rate is reduced to a minimum. It has more power over influenza than is exerted by any method of treatment over any other disease. If adopted by the whole profession it would make influenza non-existent in one week. It rests upon a sound scientific foundation."

In a leading article, the *Lancet* of January 23d, says that the last two conclusions may be open to question, but the preceding are statements which no medical practitioner of standing would venture to put forward without good cause. "We may fail to be convinced of his logic, and yet not refuse to accept his facts; and the evident sincerity of his statements, which are supported by the experience of others, and particularly by the personal testimony of a well-known teacher in Edinburgh University, together with the results of the treatment in the wards of the Edinburgh Infirmary, seem to warrant some attention being paid to them."

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OBITUARY. — CLAUDIUS M. JONES.

The subject of this sketch, whose early death occurred at the Massachusetts General Hospital, Sunday, the 24th of January, was born in Worcester, Mass., the 22d of February, 1845. He received his early education and preparation for college in the public schools of Worcester. In 1862 he entered Harvard College, and was graduated in due course in 1866, the third in rank in his class. During the next few years after graduation he taught as a private tutor in Great Barrington. In 1875 he received the degree of Doctor of Medicine from the Harvard Medical School, at the head of his class. He immediately began a service of eighteen months as house-officer in the Massachusetts General Hospital. This completed, he spent two years in study in various cities of Europe. The bulk of his work was, however, done in Vienna. He had the wisdom to prepare himself by study of the German language in Leipsic, before he went to Vienna, to receive the full benefit of his study in the latter city.

In 1877 he began practice in Boston, and the rest of his life was continuously and actively in practice. During this period he was always connected with the Boston Dispensary. At one time he had charge of two districts of the Dispensary with a room at the central office, in addition to his private practice. In late years he enjoyed greatly his service as physician to the Samaritan Hospital.

His personal character and his intellect were of the highest. Entirely self-reliant, he was at the same time modest and unpretentious. His scholarly tastes made intellectual pursuits his delight. He once said to the writer of this sketch that if he could find time he should enjoy following by himself the West Point course in mathematics. When very busy be found time to read some of the Latin classics. He read French as fluently as he spoke German.

Though often urged by his friends to take a much-needed rest he worked persistently to the end, which came at the age of forty-six.

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[1] Lancet, Dec. 19

He had received the highest degrees from the Masonic fraternity.

Correspondence.

SANITATION IN JAPAN.

YOKOHAMA, JAPAN, January 8, 1892.

MR. EDITOR:— Through the kindness of Mr. Nakahama (Japanese Navy) I am enabled to offer you this abstract from "A Summary of the Two Annual Reports of the Central Sanitary Bureau attached to the Home Department of the Imperial Japanese Government for 1888 and 1889," published in Tokyo, 1891.

During 1885 and 1886 the cholera epidemic prevailed so extensively that hardly any part of the country escaped. By this calamity, the attention of the people was called to the importance of sanitation, which was quietly developed in the course of the years 1888 and 1889, free from infectious diseases. Previous to this time, after each appearance of the scourge, measures for inspection and disinfection were taken, but these, being under the control of the local authorities, were incomplete, isolated and wastefully expensive. The central government has, consequently, employed a sanitary engineer to make plans, examine the question of expense, and superintend the work at the demand of subordinate governments. The construction of water-works and improvement of drains and sewers have been begun in every part of the country. This problem has not yet been solved in regard to Tokyo, where the great extent of space makes enormous outlay necessary. The use of wells, surface-drainage, cesspools, etc., is yet very general in Tokyo and throughout Japan. In Yokohama, good water is brought in pipes from a lake in the hills, some twenty miles distant. (It might be suggested that individual domiciliary attention to cleanliness, boiling of the drinking-water, and thorough cooking of food, are good preventives against spreading of infectious maladies.)

May 6, 1889, regulations as to the organization and powers of the examining committee for the practice of medicine were made known by Imperial Decree, examinations being held in Kyoto, Tokyo and Nagasaki. During this year 569 persons passed the examination (27 dentists); 331 graduated in native medical schools and three in foreign medical schools (one dentist); 21 were permitted to practice within a limited region; 1,198 licenses of practice were returned (1,129 of persons who died, and 69 of those retired from the profession). The number of practitioners who were stopped from the practice by a judgment of the Central Sanitary Board, according to Regulations, was 52. For this year, the total number of physicians was 41,405; of midwives 32,111; the number of licensed apothecaries was 517. There are detailed regulations regarding — (1) control of medicine; (2) manufacturers of medicines; (3) druggists; (4) apothecaries; (5) care and sale of poisonous drugs. Physicians yet dispense their own drugs in practice. The ultimate aim, touching this, is to bring about a separation of the work of the dispensing apothecary from that of practitioner; but such change is necessarily slow, because it is an ancient custom that physicians here make their living by sale of medicines; the people also find this way convenient.

In pursuance of the sanitation plan, the various local inspectors were ordered to the Central Office for instruction.

Examination by analysis has shown that native canned goods are liable to adulteration, some specimens of Japanese condensed milk were good, others bad. *Sake* (native wine-whiskey) was found at times to contain salicylic acid. Confectionery occasionally showed red-lead and other injurious ingredients. Some of the investigations have bearing on Medico-legal questions. The number of examinations of food and drink is greater than before, showing the spread of sanitary ideas among the people.

At the Medical Botanical Garden in Tokyo, good results have been obtained in the culture of a number of medicinal plants — the more important being *papavera somnifera, erythroxylon coca, atropa belladonna, rheum officinale* and *aspidium filix mas*.

Experiments at the Vaccine Farm (under control of Sanitary Bureau) showed that virus could be preserved for 200 days: glass tubes are used, and furnished to native and foreign physicians. Clothing, etc., is subjected to the moist-heat system for disinfection. "Sick-rooms should be cleansed with a strong carbolic-acid solution or lime-milk, the mats and screens, etc., exposed to the sun-light — the rooms being also thrown open to currents of air." Experiments showed the efficacy of quick-lime as a disinfectant for the cholera poison.

The total number of births for the whole population in 1889 was 1,209,910 or 30.17 per 1,000 persons, 26.31 being the average for the previous nine years. The deaths were 816,241 or 20.36 per thousand, 19.37 being the average for the previous nine years.

The report contains several tables giving details of the numerical relation of sex, births, deaths, population, health of the various territorial and political subdivisions, data concerning the investigations at the Vaccine Farm; and vaccinations, with ages.

Typhoid fever has been somewhat prevalent. A bacillus was found in connection with an epidemic of dysentery, "but it cannot be lightly taken as cause of the disease." Vaccination has greatly lessened the number of cases of small-pox.

At the present time, small-pox is so prevalent as to render revaccination of foreigners prudent.

Very truly yours,
F. B. STEPHENSON, *Surgeon, U. S. N.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 23, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	866	299	12.00	18.70	3.50	.50	5.30
Chicago . . .	1,099,850	646	249	20.10	19.35	2.25	9.30	4.95
Philadelphia .	1,046,964	544	187	15.84	12.96	3.24	2.34	8.82
Brooklyn . .	806,343	399	132	14.50	22.50	3.00	.25	8.75
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	258	67	6.63	30.81	2.73	—	2.34
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	137	52	8.88	20.72	.74	2.22	6.66
Cleveland . .	262,000	126	35	13.43	35.55	.79	.79	11.06
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	117	47	19.55	14.45	.85	5.95	10.20
Milwaukee . .	240,000	116	56	17.20	24.08	4.30	2.58	8.60
Washington .	230,392	135	41	7.40	39.22	.74	4.44	.74
Nashville . .	76,168	24	7	—	—	—	—	—
Charleston . .	65,165	34	16	—	2.94	—	—	—
Portland . . .	36,425	32	4	6.26	25.00	—	3.13	3.13
Worcester . .	84,655	35	10	5.72	17.16	—	—	5.72
Lowell . . .	77,696	77	18	6.50	24.70	—	3.90	1.30
Fall River . .	74,398	44	20	9.08	34.05	—	—	2.27
Cambridge . .	70,028	25	6	12.00	16.00	—	—	12.00
Lynn	55,727	27	2	—	25.90	—	—	—
Lawrence . .	44,654	30	2	—	13.33	—	—	—
Springfield . .	44,179	25	5	16.00	32.00	—	4.00	4.00
New Bedford .	40,733	18	3	—	11.11	—	—	—
Salem	30,801	27	6	7.40	—	—	—	—
Chelsea . . .	27,909	13	—	15.38	30.76	—	—	15.38
Haverhill . .	27,412	6	1	16.66	—	—	16.66	—
Taunton . . .	25,445	—	—	—	—	—	—	—
Gloucester . .	24,651	—	—	—	—	—	—	—
Newton . . .	24,379	10	1	—	—	—	—	—
Malden . . .	23,031	8	1	25.00	37.50	—	—	—
Fitchburg . .	22,037	11	4	—	18.18	—	—	—
Waltham . .	18,707	11	1	—	54.54	—	—	—
Pittsfield . .	17,281	3	0	—	33.33	—	—	—
Quincy . . .	16,723	9	2	11.11	—	—	—	11.11
Newburyport .	13,947	14	2	28.56	—	—	—	21.42
Medford . . .	11,079	3	0	—	—	—	—	—
Clinton . . .	10,424	—	—	—	—	—	—	—
Hyde Park . .	10,193	3	0	—	33.33	—	—	—
Peabody . . .	10,158	5	0	20.00	—	—	20.00	—

Deaths reported 3,937: under five years of age 1,276; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 547, acute lung diseases 824, consumption 387, influenza 160, diphtheria and croup 234, typhoid fever 112, scarlet fever 98, diarrhœal diseases 42, measles 14, whooping-cough 14, erysipelas 13, cerebro-spinal meningitis 12, malarial fever 8.

From diarrhœal diseases Chicago 19, New York 7, Philadelphia 5, Cincinnati, Pittsburgh, Springfield and Malden 2 each, Brooklyn, Boston and Washington 1 each. From measles New York 8, Chicago 3, Philadelphia, Brooklyn and Milwaukee 1 each. From whooping-cough Chicago 4, Fall River 3, Boston 2, New York, Philadelphia, Cleveland, Milwaukee and Newburyport 1 each. From erysipelas New York 6, Chicago 2, Philadelphia, Brooklyn, Cleveland, Pittsburgh and Lowell 1 each. From cerebro-spinal meningitis Chicago 6, New York 3, Brooklyn, Boston and Washington 1 each. From malarial fever Brooklyn 6, New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending January 16th, the death-rate was 33.0. Deaths reported 6,455: acute diseases of the respiratory organs (London) 1,248, whooping-cough 265, measles 161, diarrhœa 53, fever 52, diphtheria 43.

The death-rates ranged from 14.6 in Huddersfield to 57.0 in Portsmouth; Birmingham 20.0, Gateshead 35.3, Hull 25.7, Leeds 25.1, Leicester 17.1, Liverpool 42.0, London 40.0, Manchester 26.6, Newcastle-on-Tyne 31.5, Nottingham 22.5, Preston 22.5, Sheffield 20.3, Sunderland 25.5, West Ham 33.6, Wolverhampton 48.1, Bradford 15.7.

METEOROLOGICAL RECORD,

For the week ending January 23, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...17	30.64	20	31	9	77	72	74	N.W.	S.	7	12	C.	O.	
M..18	30.29	38	48	28	76	89	83	S.W.	S.	4	15	O.	R.	.04
T..19	29.83	37	50	24	86	94	90	W.	N.W.	12	20	O.	N.	.91
W. 20	30.23	13	17	8	80	63	72	N.W.	N.	15	4	F.	C.	.09
T..21	30.20	19	28	9	74	62	68	S.W.	W.	8	11	O.	C.	
F..22	30.21	25	34	16	72	71	72	S.	S.W.	5	17	O.	O.	
S..23	29.74	38	42	33	72	68	70	S.W.	W.	12	12	F.	F.	
☞	30.16	27	36	18	77	74	76			9	13			.15

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 23, 1892, TO JANUARY 29, 1892.

Captain Henry G. Burton, assistant surgeon, U. S. A., having been found incapacitated for active service by an Army Retiring Board, is granted leave of absence until further orders on account of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 30, 1892.

A. M. D. McCormick, passed assistant surgeon, detached from Receiving-ship "Minnesota" and to the U. S. S. "Charleston."

Geo. H. Barber, assistant surgeon, detached from the U. S. S. "Charleston" and to the Receiving-ship "Minnesota."

A. G. Cabell, passed assistant surgeon, detached from the U. S. S. "Newark" and ordered to the U. S. S. "Kearsarge."

James Stoughton, assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the Training-ship "Portsmouth."

M. S. Guest, assistant surgeon, detached from Navy Yard, Norfolk, Va., and to the Naval Hospital, Norfolk, Va.

SOCIETY NOTICES.

Massachusetts Medical Society, Suffolk District, Section in Obstetrics and Gynecology. — A regular meeting will be held at 15 Boylston Place, Wednesday, February 10, 1892, at 8 o'clock P. M.

Dr. Malcolm Storer will read on "The Radical Treatment in Certain Cases of Grave Accidental Concealed Hæmorrhage."

Discussion on "Pathology, Prophylaxis and Treatment of Puerperal Eclampsia," opened by Drs. A. D. Sinclair and Edward Reynolds.

George Haven, M.D., *Secretary.*

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, February 8, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Papers: Dr. J. C. Warren, "Operative Treatment of Goitre"; Dr. A. Coolidge, Jr., "Three Cases of Tuberculosis of the Palate."

The Society is reminded that this is the last meeting of the season at which new members can be proposed.

G. G. Sears, M.D., *Secretary.*

The Eighth Annual Meeting of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn, on Tuesday, May 24th, 1892. All Fellows desiring to read papers will please notify the Secretary,

E. H. Squibb, M.D., P. O. Box 94, Brooklyn.

RECENT DEATHS.

Charles P. Pengra, M.D., Ph.C., M.M.S.S., died January 31st, aged 31. He received the degree of M.D. from the University of Michigan in 1881, and of Ph.C. in 1883. He came to Boston in 1884, as Professor of Materia Medica and Botany at the Massachusetts College of Pharmacy. He was also Professor of Microscopy and Dental Histology at the Boston Dental College. He was a fellow of the American Association for the Advancement of Science, and a member of the convention for revising the United States Pharmacopœia in 1890.

Howard Smith, M.D., of New Orleans, died January 30th, aged sixty-nine. He served as a surgeon in the Confederate Army and had control of the entire medical service of the trans-Mississippi department. He afterward filled the chair of materia medica in the New Orleans School of Medicine.

William H. H. Mason, M.D. (Dart. 1843), of Moultonborough, N. H., died January 29th, aged seventy-four. He had served in the State House and Senate, on the Constitutional Convention and the State Board of Agriculture.

Lyman H. Luce, M.D. (Bowd., 1859), M.M.S.S., of West Tisbury, died January 30th, aged forty-six. He was the author of several articles on the climate and history of Martha's Vineyard, as well as on different medical subjects.

Harman W. Shove, M.D., of Woodbury, Conn., died January 25th, aged sixty-five years. He graduated from the Yale Medical School in 1853, and during the war served as surgeon in the navy.

Charles A. Savory, M.D. (Dart. 1836) M.M.S.S., of Lowell, died February 2d, aged seventy-eight. He had been three times President of the Middlesex North District Medical Society.

Sir George Edward Paget, M.D., F.R.S., died in London, January 29th, aged eighty-two. He had been President of the British Medical Association and of the General Medical Council of the United Kingdom. He was made Regius Professor of Physics at Cambridge in 1872.

Alfred Carpenter, M.R.C.S., L.S.A., Examiner in Public Health in the Universities of London and Cambridge and the author of several works on different sanitary subjects, died in London, January 27th, aged sixty-six.

BOOKS AND PAMPHLETS RECEIVED.

Thirty-sixth Annual Report of the Trustees of the Northampton Lunatic Hospital, for the Year ending September 30, 1891.

Water as a Local Anæsthetic — Its Discovery American and not German. By Robert H. M. Dawbarn, M.D., New York. Reprint. 1891.

De la Chloroformisation a Doses Faibles et Continues. Par le Dr. Marcel Baudouin. Deuxième édition. Paris: Revue des Sciences Naturelles de l'Ouest. 1892.

The Diseases of the Mouth in Children, Non-Surgical. By F. Forchheimer, M.D., Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio. Philadelphia: J. B. Lippincott Company. 1892.

Treatise on Gynecology, Medical and Surgical. By S. Pozzi, M.D. Translated from the French Edition under the supervision of and with Additions, by Brooks H. Wells, M.D. Volume 1. New York: William Wood & Co. 1891.

Four Congenital Tumors of the Head and Spine, all Submitted to Operation. I. Meningocele; II. Cervical Spina Bifida; III. Sacral Spina Bifida; IV. A Tumor of the Post-Anal Gut, in Connection with a Dermoid Cyst. By W. W. Keen, M.D., Phila. Reprint. 1891.

Original Articles.

LABOR COMPLICATED BY PROLAPSED TUMORS.[1]

BY EDWARD REYNOLDS, M.D.

Case I. On February 5, 1888, I was asked by Dr. Lamb, of Arlington, to see Mrs. F., who had at that time been in labor thirty hours. The patient stated that for many years she had had occasional attacks of sharp pains in the right iliac fossa, and had been treated for ovaritis by several different physicians.

Her first pregnancy was entirely normal, except for a somewhat unusual size of the abdomen, which at seven months corresponded to the usual size at term. Labor set in spontaneously at that time.

On vaginal examination, the finger encountered a hard, smooth, elastic mass almost filling the pelvis and lying between the vagina and rectum. No change had been noticed in her condition from the beginning of labor till the time of my arrival. The os uteri had not been reached. I succeeded in finding it some distance above the upper edge of the symphisis pubis, there being barely space to pass the finger between the symphisis and the tumor. The new growth was not connected with the cervix, and so far as I could judge, was not affected by the tolerably free motion of the cervix, which it was possible to effect by the combined motion of both hands. It was very slightly, if at all, movable. Its consistency would have accorded well with the supposition, either of a hard elastic solid, or of an extremely tense cyst.

After nearly an hour's taxis under ether, I succeeded in raising the tumor so far that two fingers could now be passed between it and the pubes, but entirely failed at any further progress. After waiting three hours, I found that the elevation which had been gained had not been lost, but no more had occurred. Temperature was then 101.5°, the pulse 90; a rise of two degrees in the temperature and of fifteen beats in the pulse since I first saw her.

The pains failing, the mouth and vagina being dry and hot, I again etherized, and after about half an hour of taxis, raised the tumor sufficiently to permit the passage of the hand between it and the anterior pelvic wall; but my utmost efforts failed to gain more than this.

The condition of the woman being such that further delay was very distinctly inadvisable, I passed the hand by the tumor and found that the os was about the size of a ten cent piece, but so extremely soft that its manual dilatation to a size which admitted the fist was easily accomplished in less than two minutes. The child's head rested against the upper surfuce of the tumor. It was readily turned and extracted, the operation consuming but five minutes from the time when the fingers entered the os until the delivery of the head through the vulva.

I had anticipated considerable difficulty in bringing even a small head past the tumor; but after the extraction of the shoulders I was surprised to find that the head was in the pelvis. The child was not asphyxiated.

Dr. Lamb readily expressed the placenta, while I was busy in wrapping up the child at the other side of the room. It weighed about four and one-half pounds, and died within a few hours.

On my return, I made a vaginal and bi-manual examination to ascertain the condition of the tumor, but, to my surprise, entirely failed to find it. Indeed, after making what I considered a careful palpation of the abdomen, I was equally at a loss to find any evidence of its presence. I was therefore inclined to believe that the tumor had been an ovarian or parovarian cyst, which had ruptured during the extraction of the child; and expressed the opinion that the after-history of the case would depend on the contents of the tumor.

I did not again see the patient until the eighth day, when I learned that her convalescence had been entirely uneventful, except that the temperature had been somewhat high at night, though normal in the morning. There were no special symptoms to account for this temperature, except considerable nervousness, some pain in the right iliac fossa, and an indefinite resistant mass in the same situation. This mass gradually dissolved and disappeared, and the patient made a complete recovery.

It was supposed that the cyst had been parovarian, and its contents therefore but slightly irritating to the peritoneum, until an examination at the end of some weeks demonstrated the presence of a globular and apparently unilobulated cyst of the right ovary, lying upon the right side of the uterus, and mainly within the true pelvis.

Some months later, the tumor was successfully removed by Dr. John Homans, and proved to be a thick-walled dermoid cyst, filled with the semi-solid material characteristic of this class of growth. It contained a considerable quantity of hair and some calcareous plates. The subsequent history of the case has been uneventful.

Case II. On July 17, 1891, Mrs. L., was referred to the Boston Lying-in Hospital by Dr. George E. Stackpole. She had had a considerable hæmorrhage before entrance, was somewhat blanched, and was still flowing moderately.

In my temporary absence from my office, she was seen by Dr. George Haven, who, however, kindly sent again for me and postponed interference in anticipation of my arrival.

The woman being already so anæmic that any further loss of blood seemed likely to be dangerous, I at once put her under ether. Vaginal examination demonstrated the presence of an extremely hard, somewhat lobulated tumor, of about the size of a seven months fœtal head, lying between the vagina and rectum, and crowded so far down that the posterior vaginal wall was pressed against the vulva.

The finger passed readily between the tumor and the symphisis pubis to reach the os, which was about opposite to its upper edge. The cervix was somewhat long, and although the os was patulous, we failed to ascertain the cause of the hæmorrhage. The tumor was apparently fixed in its position, and both Dr. Haven and I were inclined to believe that we could feel on its anterior and outer aspect a band which passed inward and upward, and which might well have been the Fallopian tube.

Although we felt that a definite diagnosis was impossible, we were inclined to think that the probabilities were in favor of its being a multilocular ovarian cyst. Some minutes of taxis in the lithotomy position proving unavailing, I had the patient placed in the genu-pectoral, where she was held by the house officers, and by Dr. W. H. Prescott, who happened to be present, and kindly rendered much valuable assistance.

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[1] Read before the Ostetrical Society of Boston, December 12, 1891.

After a taxis of fifteen minutes, the tumor suddenly receded above the brim, and passed beyond the reach of my touch. I then passed the finger into the os, and found that the surface of the placenta presented, the insertion being apparently very nearly central. I dilated the os manually, and detached the placenta upon one side until I was able to pass my fingers through the membranes at its edge, when I turned and deliver a very much exsanguinated, still-born child.

The woman made an entirely uneventful recovery. Dr. Haven kindly saw her with me on the day of her discharge from the hospital, when the tumor was found to have decreased to about the size of a six months head, was still of very firm consistency, and somewhat lobulated. We again thought that we could feel a tube extending from the right cornu of the uterus, and becoming lost on the surface of the tumor, and were inclined to adhere to our former diagnosis.

I saw her a fortnight later at the Staniford Street Dispensary for Women. The tumor was again decreased in size, the lobulations were less distinct.

Her next visit was at the expiration of another fortnight; that is, six weeks after delivery. The tumor was then of about the shape of a normal kidney, or perhaps a little larger, firm, elastic and resistant, freely movable, lying habitually at the bottom of Douglas's fossa upon the right side of the uterus.

I did not see her again until the expiration of fully three months from the time of delivery; since when I have seen her at weekly intervals, until ten days ago. The tumor has remained entirely unchanged. It causes no symptoms, whatsoever; but the patient, who is aware of its existence, was extremely desirous to have it removed; and at her request, I referred her to the Massachusetts General Hospital, where she was seen and recommended to enter by Dr. J. C. Warren. Dr. Warren informs me that he recommended her admission for the purpose of more careful examination and consultation before deciding for or against the question of operation. The reasons against the removal of the tumor are, of course, that its presence is causing no symptoms; but, upon the other hand, it seems a question whether the dangers of laparotomy for the removal of. a small and movable tumor, furnished, as this apparently is, with a long and slender pedicle, are not less than those which are likely to attend the presence of a tumor in this situation, in the person of a young, married, and presumably fertile woman.

The question of diagnosis is an interesting one. It seems hardly probable that an ovarian cyst would decrease so much in size during the puerperium. The situation of the tumor and the length of its pedicle seem to be somewhat opposed to the diagnosis of a subperitoneal uterine fibroma, while ovarian fibroid, though known to exist, is so rare a disease, that an attempt to establish such a diagnosis, prior to operation, would be decidedly rash.

The subject of the diagnosis and management of intra-pelvic tumors which are first discovered during labor, is one of considerable interest, on which but little is said in the text-books, but which, I think, is, nevertheless, amenable to clear and easily established rules.

For obvious anatomical reasons, the new growth, if intra-pelvic, must necessarily lie behind the vagina; its presence necessitates a differential diagnosis between a bony tumor of the posterior or lateral pelvic wall, an interstitial or subperitonal fibroid of the lower portion of the posterior uterine wall, an ovarian cyst, or a cyst of the recto-vaginal septum. Osteoid tumors are to be distinguished from the other forms by the relation which they bear to the rectum, which must necessarily lie, to a greater or less extent, across the anterior surface of any exostosis. Cysts of the recto-vaginal septum rarely attain a very large size, and are differentiated from the other tumors mainly by the absence of any pedicle when the tissues above them are compressed between the two hands; the fingers of one being passed into the rectum behind the tumor, and those of the other employed either in the vagina or through the abdominal wall. In case such a cyst should attain a size which rendered a bimanual examination impossible, its differentiation from a cyst of the ovary would probably be impossible until after the failure of taxis had compelled a resort to operation.

At first sight, it would be thought that the consistency of an ovarian cyst would be so unlike that of a fibroid that no further test would be needed; yet in my limited experience, which comprises only these two cases of ovarian tumor, and but three of intra-pelvic fibroids, the tumor was in each case rendered so tense by the pressure from above, that this test was considered worthless in each of the five cases; and the only evidence which seems to me of real value is the demonstration of the presence or absence of a firm connection between the uterus and the new growth. This is to be made more by the results of abdominal palpation than by vaginal examination; since the region in which the connection, if present, would be found, is almost necessarily beyond the reach of the vaginal finger. If the tumor be a fibroid, motion imparted to the fundus and body of the uterus would almost necessarily affect the tumor; since the rapid growth which is characteristic of fibroids during pregnancy, must almost necessarily involve the conversion of even a slender pedicle in a subperitoneal fibroid into an attachment which is, at least temporarily, tolerably firm. The establishment of the diagnosis between these two forms of new growth is of considerable practical importance; since the ultimate treatment which they demand is radically different.

Besides the three cases of fibroids with which I have been personally acquainted, I have knowledge of three others which have occurred in this immediate vicinity. One of these latter cases was subjected to Porro's operation at the advent of labor; the other five were delivered either by normal labor, or by low forceps, after the spontaneous recession of the tumors, in spite of the fact that in each case the size of the latter was such that delivery by any other means than the Cæsarean section seemed at first sight impossible.

The explanation of this occurrence is easy. The non-pregnant uterus contains but a small amount of muscular tissue. So, too, uterine fibroids under ordinary circumstances are made up mainly of connective tissue, which is, however, interspersed with a small amount of unstriped muscle; the histological structure of the uterus and the tumor being closely similar.

The pregnant uterus is, upon the other hand, well known to be composed almost wholly of muscular tissue, which is developed during pregnancy. Although I am unable to quote any post-mortem examination of fibroid tumors of the parturient uterus, it seems highly probable, both from analogy and from the fact of the rapid growth, and altered consistency which the tumors assume during pregnancy, that their structure at term is again so closely similar to that of the uterus at the same time, as to explain the reduction of volume and the recession upward which is observed to occur, as being the effect of a muscular contraction and retraction of the fibres, such as is observed in the substance of the uterus.

It is then my belief, and I think that of most obstetricians, at least in this vicinity, that intra-pelvic fibroid tumors should be left to nature; at least, until the advent of marked exhaustion renders immediate delivery necessary in the interests of the mother; when in the probably somewhat rare case of the failure of retraction on the part of the tumor, abdominal section and the performance of Porro's operation would undoubtedly be indicated.

With prolapsed ovarian tumors, upon the other hand, no such result can be expected. The tumor must either be raised above the brim of the pelvis by properly directed taxis, or else the delivery can be effected only by the employment of some cutting operation. Taxis must consist of upward pressure upon the lower surface of the tumor through the vagina and rectum, or through both combined. Its successful performance usually requires the administration of ether, and is greatly helped by the assumption of the knee-chest position, as was apparent in my second case; though it was also evident to all who were present that the maintenance of this position in an etherized woman would necessarily require an amount of assistance which would often be obtained with difficulty in private practice. The advantages of the position are, however, so great, that I should be inclined to make strenuous efforts to obtain it in any future case, no matter how situated.

Taxis should be persistently employed for as long a period as seems possible without undue exhaustion of the patient; and if unsuccessful, should be repeated at intervals, until the appearance of the familiar indications which demand immediate delivery.

If at this time a final effort at taxis should prove unavailing, three courses are open to the attendant; namely, laparotomy for the performance of the Cæsarean section and the removal of the tumor, aspiration of its contents per vagina, and vaginal ovariotomy.

Vaginal ovariotomy, that is, the incision of the posterior vaginal wall, the evacuation of the tumor, its removal through the incision, and the ligature of its pedicle, would probably under these circumstances become a tolerably easy operation. It is, however, rendered inadvisable by the great vascularity of the vaginal wall during parturition, and by the liability of extension of the incision into undesirable localities by laceration during the subsequent delivery; in addition to which we must still deprecate the entrance of lochia into Douglas's fossa, which must necessarily follow, and which would certainly increase the dangers of the case; though in the light of recent experience, it is probable that under aseptic conditions, this danger is much less than is generally supposed, the more especially as the situation of the incision would necessarily insure the best of drainage.

Aspiration of the cyst through the vaginal wall is a measure which, in these days of successful laparotomy, need hardly be considered. It would hardly be likely to result in the complete evacuation of any but a unilocular parovarian cyst, since the multilocular character and viscid contents of a true ovarian cystoma, would almost certainly frustrate the purpose of the operation; and it is attended by very great risks of serious peritonitis.

The Cæsarean operation, when performed before the advent of really serious exhaustion, and in the absence of visceral disease of the mother, has yielded of late years so very high a proportion of successes, that it is probable that it should be unhesitatingly adopted in any case in which taxis fails to remove the obstacle. Its prognosis would in all probability be but little complicated by a simultaneous ovariotomy; but, should the condition of the patient forbid any prolongation of the operation, this could be left for a second laparotomy.

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SO-CALLED SPONTANEOUS COMBUSTION.[1]

BY B. H. HARTWELL, M.D., AYER, MASS., *Medical Examiner.*

On the 12th day of May, 1890, while making a professional call in the outskirts of the town, I was summoned into the adjacent woods by a messenger, who stated that her mother was "burned alive."

Hastily driving to the place indicated (about forty rods distant) a human body was found in the actual state of conflagration. The body was face downward; the face, arms, upper part of the chest and left knee only touching the ground; the rest of the body was raised and held from the ground by the rigidity of the muscles of the parts. It was burning at the shoulder, both sides of the abdomen and both legs. The flames reached from twelve to fifteen inches above the level of the body. The clothing was nearly all consumed. As I reached the spot, the bones of the right leg broke with an audible snap, allowing the foot to hang by the tendons and muscles of one side; those of the other side having burned completely off. Sending my driver for water and assistance, I could only watch the curious and abhorrent spectacle, till a common spading fork was found with which the fire was put out by throwing earth upon it. The flesh was burned from the right shoulder, exposing the joint, from the abdomen, allowing the intestines to protrude, and more or less from both legs. The leg bones were partially calcined. The clothing unburned consisted of parts of a calico dress, cotton vest, woollen skirt and thick, red, woollen undergarment.

The subject of the accident was a woman, forty-nine years of age, about five feet five inches in height, and weighing not far from one hundred and forty pounds; of active habits and nervous temperament. A wife and mother, she was strictly a temperate person, accustomed through life to hard work, one, who in addition to her household duties, went out washing and cleaning, besides doing a good share of the work in a large garden. On the fatal afternoon, she had — as the place showed — been clearing a lot of stumps and roots, and had set fire to a pile of roots from which it had communicated to her clothing, or it had spread into the woodland and had set fire to the clothing during her endeavors to stop it. The body lay about two rods from the burning pile. As proof that the flesh burned of itself, and nothing but the clothing set it afire, it may be stated that the accident occurred after a rain; that the fire merely skimmed over the surface of the ground, not burning through the leaves; that there was nothing but charred leaves under the body; that her straw hat which lay several feet distant was simply scorched; that the wooden handle of the spade was only blackened.

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[1] Read before the Massachusetts Medico-Legal Society.

The above case is interesting in several particulars. It is the first recorded case in which a human body has been found burning (that is, supporting combustion,) by the medical attendant. It differs from nearly all of the recorded cases, in that it occurred in a person in middle life, not very fat, and not addicted to the use of alcohol. It is interesting in a medico-legal sense. It proves that under certain conditions — conditions that exist in the body itself — the human body will burn. We have abundant proof in the many recorded cases of so-called spontaneous combustion (seventy-three are chronicled in medical literature) that the body has been more or less completely destroyed by fire, under circumstances that show that it will support combustion, and this has given rise to the belief in the spontaneous origin of the fire.

Up to the first part of the present century, the belief in spontaneous combustion was almost universal. Dr. Ogston, professor of medical jurisprudence in University of Aberdeen, in an able article in the *British and Foreign Medico-Chirurgical Review*, 1870, says there cannot be the least doubt that the weight of authority is in favor of spontaneous combustion, or at least, increased combustibility.

Of fifty-four writers on the subject, thirty-five have expressed an opinion. Of these, five are skeptical, Drs. Caldwell, Casper and Taylor and Chemists Bischoff and Liebig; three believe in increased combustibility, Dupuytren, Stillé and Guy and twenty-seven (including many illustrious names) believe in spontaneous combustion.

Dr. C. A. Stockwell, in the *Therapeutic Gazette*, March, 1889, page 168, in a lengthy article, carefully reviews many of the reported cases, and while neither admitting, nor denying spontaneous combustion, the paper appears to defend its possibility.

We know how quickly decomposition sets in, in certain cases without apparent cause, in well authenticated cases even before death takes place.

Sir William Gull, in London *Medical Times*, April, 1885, mentions a case of sudden death of a man of intemperate habits. The following day though cool, while there were no signs of ordinary combustion, the body was remarkably distended, and gas from punctures made in the skin burned like carburetted hydrogen. By the actual contact with fire, combustion of the body, more or less complete, might have taken place in this case.

The account of the mysterious death of Mr. Krook in "Bleak House," "call the death by any name your Highness will, attribute it to whom you will, or say it might have been prevented how you will, it is the same death eternally, inborn, inbred, engendered in the corrupted humors of the vicious body itself, and that only spontaneous combustion, and none other of all the deaths that can be died," calls forth this explanation from Mr. Dickens:

"The possibility of what is called spontaneous combustion has been denied since the death of Mr. Krook, and my good friend Mr. Lewes, quite mistaken (as he soon found) in supposing the thing to have been abandoned by all authorities, published some ingenious letters to me at the time when that event was chronicled, arguing that spontaneous combustion could not possibly be. I have no need to observe that, I do not wilfully or negligently mislead my readers. Before I wrote that description, I took pains to investigate the subject. I do not think it necessary to add the recorded opinions and experiences of distinguished medical professors, French, English and Scotch; contenting myself with observing that I shall not abandon the facts until there shall have been a considerable spontaneous combustion of the testimony on which human occurrences are usually received."

"The opinion of Stillé and Wharton on this subject is interesting. Admitting that the phenomena of spontaneous combustion, so-called, are incongruous with the laws of combustion, so far as they are known, it does not follow that we should reject as unworthy of belief, the many curious and authentic facts on record."

"These may be true, although incorrectly accounted for. Indeed, there are many examples of the spontaneous combustion of organic and inorganic matters which chemistry is unable to explain; but the number of cases now known, the uniformity in the description of the phenomena, and of the age and habits of the persons attacked, require us to regard them as scientific facts, yet unexplained."

"We do not hesitate also to affirm that a belief in the actual occurrence of the phenomena referred to (spontaneous combustion) may be entertained without a satisfactory scientific explanation."[2]

It is difficult to understand how the authorities just quoted could have held such opinions at a time when Levoisier and Davy had shown what takes place during, and what conditions are necessary for combustion, and so shortly after the exhaustive report of Liebig and Bischoff, proving the theory of human spontaneous combustion to be false, and making the statement that in the living body it is impossible, it shows that the belief in the spontaneous combustion of the human body is still extant.

It is not easy for us to comprehend how the human body, having seventy-two per cent. of water and only five per cent. of fat, can support combustion, even when in contact with fire, much less when independent of this; yet, from a review of the facts, we are forced to admit it, while denying the spontaneous origin of fire in the human body.

In all of the cases which have been subject to an investigation, proof has been given that the fire caught from burning clothing or other combustible substance; not by the evolution of heat through the chemical action of their own elements, and therefore not spontaneous. Those which have not been investigated have occurred at such a time, and in such a manner as to admit of an easy explanation of the fire from natural causes.

Much stress has been laid on the more or less complete destruction of the body in these cases, without corresponding combustion of surrounding combustible substances — large holes burned in the floor, partly consumed furniture, and so on, without destruction of the building; but this is not infrequently seen in accidental or set fires in buildings, when the supply of oxygen is small. I have seen a case, in which a woman fell in the night, with a lighted lamp, burning oil from which set fire to, and burned through the straw matting and floor. The woman was found in the morning burned to death, as she fell, but the fire had gone out of its own accord. Nearly all of the cases reported have been women advanced in life, very fat, and accustomed to imbibe large quantities of alcohol in some form, and supposed to burn more readily on that account, but it has been found that tissues soaked in alcohol do not burn more readily than others.[3]

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[2] Medical Jurisprudence, pages 880 and 815.

The well-known fact that the consumption of alcohol aids the deposition of fat in the human body [4] is the probable cause of the more frequent occurrence of combustion in these subjects.

Professor Ogston, in paper mentioned, relates a case in the experience of his father, in which so much alcohol existed in the blood that the serum in the ventricles of the brain caught fire and burned from a lighted match, and he has seen in a death from alcohol poisoning, the smell so marked in the ventricles of the brain, that it was possible to ascertain the nature of the beverage used.

He also mentions the experiments of Dr. Beveridge, Pathologist of the Royal Infirmary at Aberdeen, in relation to the combustion of human flesh. He found that when a section having no fat, like muscle, is placed next to the flame, the charring which results is slow, while with the cutaneous surface the cutis is speedily destroyed, and cracking permits liquefaction and flowing out of the subcutaneous fat, which taking fire, quickly reduces it to the condition of a black, greasy substance, resembling cinder. Soaking in alcohol makes no difference as to result, neither accelerating or retarding it. First the alcohol is burned, then the tissue, as if no alcohol had been present.

The number of recorded cases of so called spontaneous combustion is too large, the reliability of the witnesses and reporters too great for us to deny that many bodies have been burned more or less completely after the simple ignition of some combustible substance in contact with the body; yet we know that ordinarily it is very difficult to burn the human body. This is seen in the length of time required to consume the bodies of persons burned at the stake, and in the partly consumed bodies of the victims of accidental fires.

In the celebrated Countess Goerlitz case, in which Stauff was tried for murder, experiments were made by Dr. Graff, for the purpose of ascertaining the amount of heat necessary to effect equal destruction of the body, as was observed in this case, the result of which was, that more than one hundred pounds of wood were required to produce even partial combustion of a human body.[5]

Of the forty-five cases of spontaneous combustion, cited by Dr. Frank, of Berlin, in an article published in 1843, it is only assumed that three took place without the immediate presence of fire, and Liebig shows that these cases are wholly unworthy of belief, and adds in relation to the claim of writers that excess of fat and the presence of alcohol in the body bring about an abnormal condition of easy combustibility, "that hundreds of fat, well-fed brandy-drinkers do not burn when by accident or design they come too near a fire."

From an analysis of all the cases on record up to 1851, Liebig arrives at the conclusion that the great majority agree in the following points:

"They took place in winter. The victims were brandy-drinkers in a state of intoxication. They happened where the rooms are heated by fires in open fireplaces and by pans of glowing charcoal, in England, France and Italy. In Germany and Russia, where rooms are heated by closed stoves, cases of death ascribed to spontaneous combustion are exceedingly rare. It is admitted that no one has ever been present during the combustion. None of the physicians who collected the cases or attempted to explain them, have ever observed the process, or ascertained what preceded the combustion. It is also unknown how much time had elapsed from the commencement of the combustion to the moment when the consumed body was found."[6]

The only reasonable and intelligent explanation of the cases of so-called spontaneous combustion is, that human bodies occasionally possess increased combustibility by reason of an unusual deposition of fat, and that age and spirit-drinking are factors only so far as they aid in fat accumulation. Combustibility exists not in the same degree however, even in fat people. This can be accounted for on the supposition that fat, especially when it exists in large amount, occasionally has lowered vitality — more fat globules and less tissue than normal, thus furnishing more fuel for combustion. We know that the gross appearance of some fat warrants this assumption.

We are told by butchers that in some animals — usually the old and very fat — the fat is harder and has a granular appearance, and in extracting the fat from such, much less residue remains.

In the spontaneous combustion of mineral and organic substances (except that resulting from the action of strong acids, which is immediate), the action is slow, the process before combustion being that of heating from simple oxidation or fermentation.

If we are to admit the possibility of human spontaneous combustion, we can only do so on the supposition that it is a slow process, one of increasing heat passing into combustion. There is no account of this intermediate state ever having been observed, nor has exhumation of the body showed the results of spontaneous combustion. The record of reported cases is that the body is found more or less consumed, having been seen alive only a short time before.

That inflammable gases may be generated from rapid or slow decomposition of the body is possible; but that spontaneous combustion is a mode of death, as was once believed, is not possible, and there can be no such thing as human spontaneous combustion taking place after death, while combustibility must be admitted.

International Congress of Dermatology. — In connection with the second congress to be held in Vienna, in September, there will be an exhibition of all objects relating to the skin, such as scientific works, drawings, photographs, anatomical preparations, microscopes, instruments, and pharmaceutical preparations. The Minister of Finance has agreed to allow all articles from foreign countries intended for this congress to come in free of duty.

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[3] Liebig.
[4] Virchow, Huss.
[5] Stillé and Wharton, p. 887.
[6] Letters on Chemistry, ed. 1851, p. 282.

OBSERVATIONS ON ALBUMINURIA IN SCARLATINA.

BY JAMES W. DUDLEY, M.D.,
Medical House-Officer, Boston City Hospital.

For a long time scarlatina has been know to be a disease peculiarly liable to renal complications and sequelæ. But only within a comparatively short time has it been considered incumbent upon a careful physician to watch the urine before any manifestations of renal trouble, such as œdema, had occurred. It is now a common practice to examine the urine frequently, not only during the latter part of the disease when severe renal complications are most apt to occur, but also during the earlier part, with a view of recognizing at once any threatening trouble on the part of the kidneys and of averting it if possible.

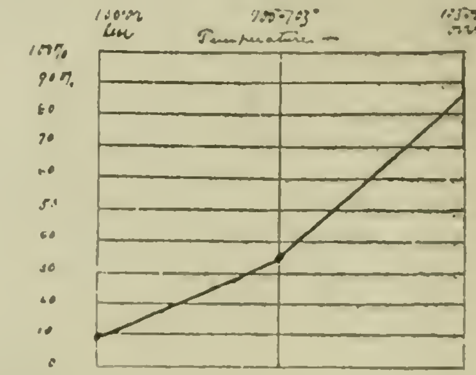
At the Boston City Hospital it is customary to have the urine of every patient with scarlet fever examined at least every other day from the beginning to the end of the disease. The writer has had the opportunity of doing a considerable amount of this work and has found the results, although made up of rather minute and perhaps somewhat trivial details, yet, it seemed to him, of sufficient interest and importance to record. To the results of the examinations which have been made by the writer have been added the results of the examination of the urine from enough other cases to make a total of one hundred urines examined from the beginning to the end of the disease. It is the aim of this paper to compare the results of these examinations with a view of determining, *first*, the frequency and importance of the albuminuria which sometimes occurs early in the course of scarlet fever, and *second*, the character and frequency of nephritis, with such other facts bearing upon the subject as have been observed by the writer. The slight evidences of kidney irritation spoken of by some authors as *renal catarrh*, which are said to occur without the presence of any albumen in the urine are not generally considered to have any clinical importance and the writer has thought it unnecessary to regard any urine as abnormal unless it contains enough albumen to be appreciable by the common heat test. Most of these urines were examined by the nitric acid test, but the results were confirmed in many cases by the heat test. The term renal catarrh has been applied in this paper to a slightly different condition from that referred to above. It should also be said that the urines examined were from *all* the cases during a number of consecutive months, no selection or omission of cases having been made.

Of the total number of patients with scarlet fever in the hospital during the period covered by these one hundred cases, three died before any specimen of the urine could be obtained. In the following statistics these three cases therefore are omitted as it is of course impossible to say whether there was albuminuria or not. In each of these fatal cases where urine could not be obtained the temperature was high, the lowest being 103°, the highest 104.2°. Cases with suppression of urine in each instance ended fatally.

At some time during the progress of the disease albumen can be found in the urine in about one-half the cases. Out of the 100 there were 49 in which there was found albuminuria to a greater or less degree, 51 being free from albumen from first to last. By far the most common time for the occurrence of this phenomenon is in the early part of the disease, when the temperature is highest, but high temperature alone cannot account for the presence of albumen as it was noticed in some cases where the temperature was uniformly low. On the other hand a high temperature was not in all cases accompanied by albumen in the urine. Out of 21 cases in which the temperature was 103° or more at entrance (the rash being on the average in its second or third day), 17 cases had albumen, four cases did not; that is 81% of all cases with a temperature of 103° or more, had an appreciable amount of albumen in the urine during the high temperature. This would seem to show that the early albuminuria was, to a certain extent, dependent upon high temperature, or that the too high temperature and albuminuria, have a common cause. We know that in other diseases with high temperature albumen is frequently present in the urine during the height of the fever, and that it should be so in scarlet fever when the same condition is present is not surprising, and in the majority of cases no other explanation seems necessary.

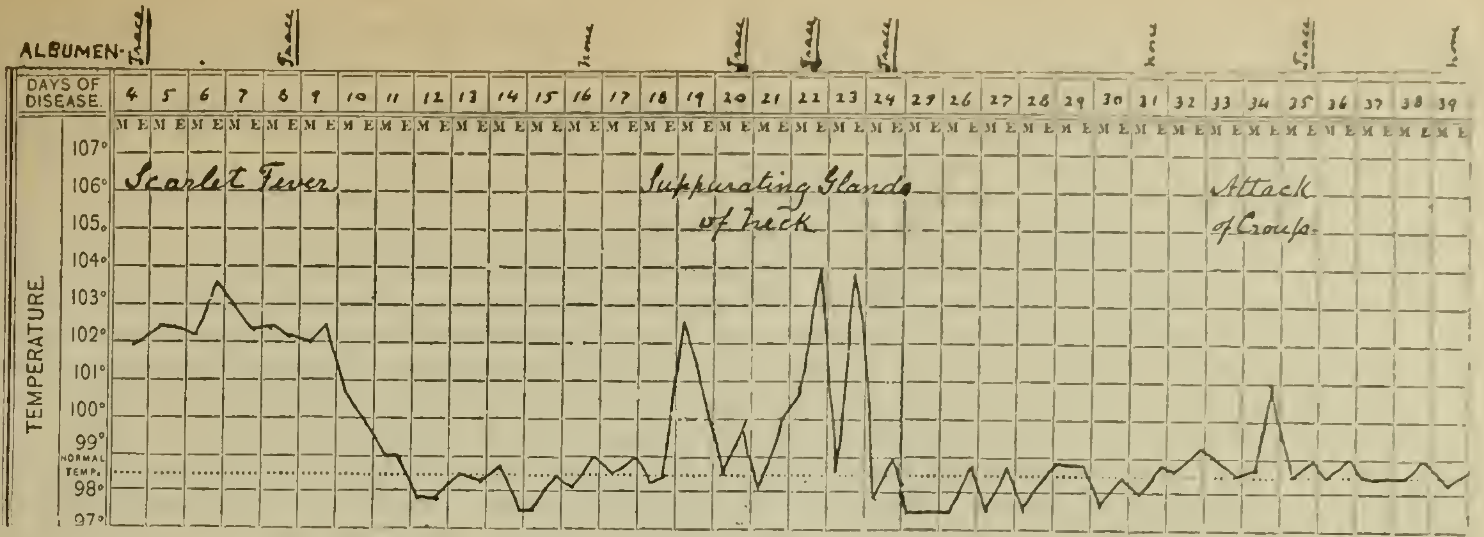
Whatever the cause of the fever, adults are more easily influenced by high temperature than children, and accordingly in this series of cases it was found that in case of all the adults 20 or more years of age who had a temperature of 103° or over (six in number) albumen was present during the height of the fever. In four of these six, the albumen disappeared as the temperature declined without any evidence of nephritis; in the urine of two there were found a few hyaline and granular casts, and in none did the albumen at any time exceed a trace in amount. All of these cases did well.

Dividing the whole number of cases into three divisions according to the height of the temperature at the period of efflorescence, and estimating the percentage of cases having albuminuria in each of these divisions, the same result is obtained, namely, that as a rule, the higher the temperature the more frequent is the albuminuria. This may be seen in the following tracing:



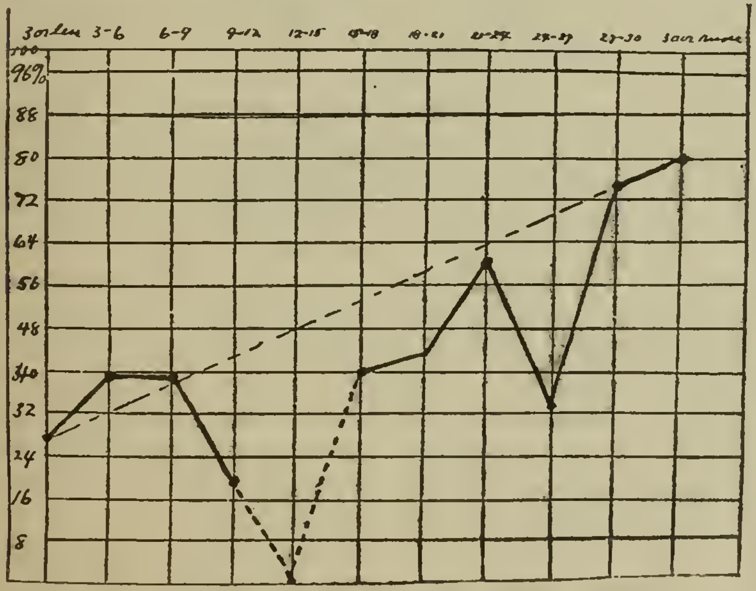
Eight and seven-tenths per cent. of all cases having a temperature of 100° or less had albuminuria; of those with a temperature of 100° to 103°, 36%; while of those with a temperature of 103° or over, 86%. Early albuminuria seems therefore to be, if not the result of high temperature, at any rate an almost normal accompaniment of it and of no prognostic value as regards the subsequent course of the case.

The apparent dependence of albuminuria on temperature in scarlet fever, may be seen in the accompanying chart. The cause of the rise in temperature was a different one at each elevation, but in each instance there was temporary albuminuria. It is not



improbable, however, that the kidneys were in such a condition that their function was easily deranged by a rise in temperature although no serious renal trouble was threatening.

Early albuminuria appears to be more common in adults, whatever the temperature, than in children. Twenty-seven out of the 100 cases were in persons twenty years of age or over, and in 56% of these there was early albuminuria. Of those adults having a temperature over 100°, 75% had albumen, and as stated above, all the adults with a temperature of 103° or over, presented it. Taking the whole 100 cases according to the age of the patients, we find on the whole a pretty steady increase in the proportion of cases with albumen, as the ages of the patients increase. The percentage of cases presenting albuminuria at different ages is graphically shown in the following curve, the horizontal lines marking the percentage of cases with albumen, and the vertical lines the ages of the patients.



Strange to say, there was but one case between the ages of twelve and fifteen, and that case had no albumen. The drop of the curve at that point, therefore, indicates nothing. The cases occurring between the ages of nine and twelve were, with one exception, cases with a low temperature. Those between twenty-four and twenty-seven were also, with one exception, of lower temperature than the average for adults. Albuminuria seems, therefore, to be of much more common occurrence in adults than in children. This cannot be due to albumen being detected in adults as the result of a better appreciation of any change in the general condition, and attention therefore being directed toward the kidneys, because *all* the urines were examined with equal frequency. It must be taken as a fact, probably due to the greater ease with which children always endure high temperature. It is difficult to see *a priori* why the scarlatinal poison should not affect the kidneys to an equal extent in children and adults, and if the albumen be due to the specific action of the poison on the kidneys, why it is not as common in children as in adults. It must be said, however, that there were a very few cases where there was albuminuria at various times during the progress of the disease not dependent upon high temperature, and apparently to be explained in no other way than as the result of the action of the scarlatinal poison on the kidneys. The writer is not able to say whether some of these few cases may not have had some evidence of renal catarrh, such as casts, which were overlooked, or have occurred as a result of passive congestion of the kidneys from some abnormal condition of the heart, but no case of the sort was noticed. That *renal* desquamation is not necessarily a predisposing cause of albuminuria is shown by the fact that in two cases, at least, the albumen present during the high temperature cleared up the day that desquamation began.

Albuminuria seems to be rather more common in males than in females. Twenty-three out of the 43 males had albumen in the urine at some time; that is, 53% of the males. Of the 57 females it was found in 27, or 47.4%. The difference between the sexes in this regard seems, however, too small to be of any special significance.

Over-crowding and poor ventilation are said to be fertile causes of scarlatinal albuminuria.[1] It is difficult, however, to see how this cause can have operated in the cases under consideration. The wards are new, very well ventilated, and at no time during the period covered by these cases, contained as many cases as they were designed to accommodate. During the time of the writer's service in these wards, that having the smaller number of patients contained fully as large a proportion of cases with albuminuria as did the other ward which with the same air space, contained the larger number of patients. During the month of March last, when there was an unusually large number of patients in the wards, 43% of the admissions developed albuminuria. During February, also a heavy month, there were 53%. In December, when there were fewer patients, 63%, and in November, when the clinic was very small, and consequently over-crowding out of the question, 75% developed albuminuria. It therefore seems that over-crowding and poor ventilation have no influence in the production of albuminuria, so far as these cases show.

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[1] See London Practitioner, 1888, vol. xli, p. 154.

The question next arises, what are the probabilities of a nephritis occurring as a continuance of the early albuminuria? In adults, where early albumen is most common, this happened in about 14% of all cases. In children it occurred in 20%. These cases of nephritis were of the mildest type in half the cases, and in none were they of a serious nature. The variety of nephritis which is to be especially feared, generally comes later, and does not so far as these cases show, arise as a continuance of the early albuminuria. A temporary nephritis, whose only sign is a few granular and hyaline casts in the sediment, is not to be regarded as a serious trouble. The cases having this variety of nephritis, which might be spoken of clinically as a renal catarrh, in most instances do well, and it is not uncommon for this condition to be present at varying intervals during a considerable part of the illness, without giving the least evidence of its presence, so far as the symptoms, or the appearance of the patient, or the termination of the disease, is concerned. The presence of casts in the sediment indicates some abnormal condition, which, if slight, is generally considered in scarlet fever to be of a catarrhal nature because of the slight pathological changes usually found *post-mortem*, and the frequent epithelial cells from the renal tubules almost invariably found in the sediment. Clinically, at any rate, it does not seem possible in every case to draw a line of distinction between this mild catarrhal condition and a real active nephritis. All varieties and combinations of abnormal urinary elements may be found. The most common variety observed in this series of cases was that containing a trace of albumen (sometimes a very faint trace) and a few hyaline and granular casts, with an occasional leucocyte and a few renal epithelial cells. It is this very mild form of renal affection which has been spoken of above as renal catarrh. Another combination observed was hyaline and granular casts and a few blood globules, with a trace of albumen; another, hyaline and epithelial casts, free blood and a trace of albumen. All degrees were found between these and the severe and typical parenchymatous nephritis having a large amount of albumen, $\frac{1}{4}$ to $\frac{1}{2}$%, free blood and renal cells with hyaline, granular, epithelial and blood casts. What is true of the albumen and sediment is also true of the specific gravity, daily quantity and appearance of the urine. In fact, scarlatinal nephritis cannot be said to have any type of its own, and the only practical criterion which we can make as to the presence of nephritis, seems to be the occurrence of casts of one variety or another in the sediment of a urine containing albumen.

(*To be continued.*)

PRESERVATION OF MEAT FOR TEN YEARS. — A gentleman in New York has recently tested the result of preserving a turkey in a refrigerator for ten years. This time having elapsed, the fowl was removed from the refrigerator and after being properly cooked was eaten by a party of gentlemen. While putrefactive changes seem to have been entirely absent it was found that the meat was practically tasteless.

Clinical Department.

A CASE OF LAPAROTOMY FOR OVARIAN DISEASE.[1]

BY R. A. KINGMAN, M.D.

THE case which it is my privilege to report before you this evening is chiefly of interest by reason of two rather unusual features, the first relating to the shape and location of the principal tumor, thus complicating the question of diagnosis,— the second having regard to the smaller tumor and raising questions of prognosis and perhaps of etiology.

The patient was very kindly referred to me by Dr. Samuel Breck, who assisted in the examination and coincided with me in the diagnosis and in urging immediate operation.

S. K., single, aged thirty-eight years, born in Ireland, three years in this country, during which time she has done heavy work as a hotel laundress. Her father died of "kidney disease." She has suffered from no previous disease of consequence. Two and a half years ago she noticed a small swelling in the lower abdomen at the right of the median line and the whole abdomen seemed somewhat sore. Since that time there has been a gradual increase in the size of the abdomen, which has been more rapid during the past four months.

Her first menstruation appeared at thirteen years of age. At first it lasted a week and was profuse, but after a year it ceased for three or four months and since that time has recurred regularly at an interval of from three to four weeks, lasting four days, without pain, and soiling only four napkins. The last appearance was two weeks previous to the date of the operation. Her appetite has been fair, but the process of digestion is accompanied with occasional discomfort. The bowels are regular. No abdominal pain is experienced, but rather a sense of distension and oppression.

Examination revealed an abdomen distended rather more than at the full term of pregnancy. The abdominal wall, particularly at its lower margin, was markedly œdematous. The sense of fluctuation was distinct though not so striking as in ordinary ascites and was absent in the flanks. On each side, just above the iliac spines, was noticed a sense of greater resistance, which yielded before the examining fingers like the head or breech of a child in a uterus containing an excess of liquor amnii. Dulness was complete to a point above the umbilicus, and extended much higher on each side than in the median line. In the flanks there was good resonance.

The uterus could not be felt bimanually; the cervix was crowded somewhat forward, and in Douglas's pouch was felt a rounded mass which was supposed by Dr. Breck and myself to be the sharply retroflexed body of the uterus. The urine had a specific gravity of 1040, was acid, yellowish-gray in color, copious precipitate of urates, no albumen. The legs were œdematous at night, but this fact she had noticed for only two weeks.

A diagnosis was made of a multilocular cystic tumor of the ovary, possibly accompanied by ascites, in which case the latter was supposed to be encysted by adhesions. Owing to the marked œdema of the abdominal wall, malignant growth somewhere within the peritoneal cavity was feared.

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[1] Read by invitation, before the Obstetrical Society of Boston, December 12, 1891.

After the customary preparation for the two preceeding days, the operation was performed at St. Elizabeth's Hospital, on Saturday morning, November 21st, Dr. F. W. Johnson assisting at first, and later Dr. Breck. Asepsis of hands and arms was secured by the use of permanganate of potash, oxalic acid and corrosive sublimate; asepsis of instruments, ligatures, sutures and dressings by exposure to heat.

In incising the peritoneum there escaped fourteen pints of clear amber-colored serum. As the abdominal walls collapsed, there developed a peculiar appearance, two distinct, rounded tumors, elevating the parietes just below the ribs on each side, and strongly resembling a pair of well-developed breasts. On introducing the hand, these were found to be cystic and to be joined at the median line, where they rode the vertebral column like a pair of old-fashioned saddlebags. From this point of union a slender pedicle extended some five or six inches to the left corner of the uterus. The cysts, which were multilocular on both sides, were evacuated and removed, no adhesions being encountered. The contents consisted of a fluid strongly resembling dilute pus, thirty-six ounces flowing out through the canula besides what escaped into the abdominal cavity and around the wound.

In the pouch of Douglas was found a soft papillomatous growth, extending wholly across the pelvis and pressing the uterus forward. At first it was feared this could not be removed, but it soon appeared that the adhesions were neither many nor strong, and that the growth sprang from the right ovary only. It was rapidly separated from its peritoneal adhesions, lifted out of the wound and tied off close to the uterus.

In emptying the cysts part of the fluid found its way into the abdominal cavity, where it was diluted by the ascitic fluid, a part of which had intentionally been left for this very purpose. On the completion of the operation, the abdomen was flushed out several times with hot salt solution, a glass drainage-tube was carried to the bottom of Douglas's pouch and the wound was closed with silver-wire sutures. A dressing of powdered boracic acid, baked gauze and baked cotton was held in place by adhesive plaster and a binder, and she was placed in bed.

She rallied well, had little vomiting and made an uneventful recovery. The first efforts at vomiting caused quite a copious discharge of fluid, slightly tinged with blood, from the drainage-tube, but on sucking out the tube every hour very little was removed. During the night the flow increased so that the tube was sucked out every half-hour. After three days the tube was removed and the same afternoon the bowels moved freely with the help of citrate of magnesia.

Part of the stitches were removed on the eighth day, the remainder on the eleventh day.

Present condition, three weeks after operation: Wound perfectly healed. No pain or tenderness anywhere, patient feeling perfectly well. The uterus is in a position of left latero-version, moderately enlarged. There is a little fulness in Douglas's pouch, not hard nor sensitive, but giving the impression of exudate about the track of the drainage-tube, or of a slight increase of the papillary remains left at site of the severed adhesions. Temperature 98.6°, pulse 70.

The two questions of interest I have already suggested are the only ones I will touch upon, for it is my purpose to-night merely to report the case with little of note or comment. In connection with the cystic tumor it is to be noted that owing to its broad bifurcation, it so rode upon and held down and back the intestines, that in spite of the presence of a large amount of ascitic fluid there was resonance in both flanks, dulness over the whole front of the abdomen to a point well above the already elevated umbilicus, and absence of fluctuation low down on the sides of the abdomen. In this mass of fluid the floating cysts, buoyed up by the intestines, moved freely under the hand so adding to the difficulty of accurate diagnosis.

But the second and smaller tumor is of far more importance for purposes of discussion. The data easily within our reach concerning papillomatous growths in the pelvis, with infection of the peritoneum, are scarce and not very satisfactory. The general impression is that while not in themselves malignant, they are liable upon the slightest provocation, or even without special cause, to undergo malignant degeneration. Even though, as in this case, the tumor proper can be readily and completely removed, yet the peritoneal adhesions may serve as foci from which proliferation may occur, to be followed sooner or later by cancerous or sarcomatous degeneration. Whether it is better in these cases to scrape the points of infection as clean as possible and promptly close the abdomen, or whether keeping the wound open and packing the pelvis with iodoform gauze offers a better chance of cure by encouraging suppuration and cicatricial starvation of the growth, is a question for consideration. Is the disease bound to return and cause death, or is there a chance of gaining a complete cure? Of the latter, how can we make the result more sure than by the method practised in this case?

The pathologist's report just received this evening from Dr. F. B. Mallory, is as follows:

"A papillomatous mass from right ovary, size of fist; several small cysts present in base; probably a ruptured papillary cystoma. Mass from left ovary contained two large cysts and a number of small ones. Portion of outer wall of large cyst thickened and in places covered with small papillary masses. These were probably originally within a cyst which has ruptured. Inner wall of cysts studded with numerous papillary projections of varying size.

"Microscope showed papillary masses covered with a single layer of cylindrical epithelium. The papillary masses themselves are in some cases very cellular and made up of spindle cells; in others they are more fibrous; the larger proportion, however, are composed of branching cells separated by clear, translucent material, suggesting Wharton's tissue. The papillary masses in many places, on account of their delicacy and manner of branching, resemble chorionic villi.

"Diagnosis — Papillary (myxo-sarco) cystoma.

"Prognosis bad."

The Alvarenga Prize. — The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about one hundred and eighty dollars, will be made on July 14, 1892. Essays intended for competition may be upon any subject in medicine, and must be received by the secretary of the College on or before May 1, 1892. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college.

A CASE OF PAPILLOMA OF THE OVARY AND FALLOPIAN TUBE.

BY C. M. GREEN, M.D.

THE patient, aged twenty-seven, was first seen in April, 1891; the right tube was somewhat enlarged and tender and there was an endocervicitis of long standing: the ovaries were apparently not enlarged. When seen early in July, before going away for the summer, the patient was generally improved; but the condition of the right tube was unchanged. Three months later, when next the patient was examined, it was found that the right ovary was enlarged to the size of the fist: it was thought by Dr. George Haven and myself that the ovary was cystic, and operation was advised. Dr. Haven kindly performed laparotomy for me November 6th, and to our surprise, when the abdomen was opened, we found a papillomatous mass, the size of the fist, involving the right ovary. Neither the parietal peritoneum, nor adjacent organs were apparently at all invaded: the broad ligament was tied off and the entire growth and the right Fallopian tube were removed.

Dr. F. B. Mallory, of the Harvard Pathological Laboratory, kindly examined the specimen and reported:

"The papillary growth probably originated in a cystoma which has ruptured, and of which the wall has disappeared. There is a very reasonable hope in this case of non-recurrence."

The patient made a non-febrile convalescence until the eleventh day when there was an attack of pain, following a movement of the bowels, with some elevation of temperature: and for several days there was fever, and pain in the right inguinal region. The temperature suggested pus: ether was then given with the expectation of locating the trouble and perhaps aspirating; but examination revealed a hard, nonfluctuating mass to the right of the uterus, as large as the fist nearly. Finding no evidence of abscess, nor, at all events, of pus within easy access, it was decided to wait: the next day, there was a discharge from the vagina of a sero-sanguinolent fluid containing thick, white, cheesy material; the mass disappeared and the patient made a speedy convalescence. What this mass, or effusion, was, neither Dr. Haven nor I have been able to assure ourselves.

The points of interest in this case are the rapid development of the papillomatous growth, the unexplained effusion occurring as late as the end of the second week, its complete disappearance, and finally the question of recurrence. Thus far the patient has been quite well, and subsequent developments will be awaited with interest.

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Medical Progress.

RECENT PROGRESS IN LEGAL MEDICINE.

BY F. W. DRAPER, M.D.

PREGNANCY AND DELIVERY; ABORTION; INFANTICIDE.

Unconscious Parturition in a Primipara.— Brunon[1] reports a case of more than usual medico-legal interest. It related to an intelligent, healthy married woman, twenty-two years old, at the end of her first pregnancy. She had a troublesome cough which was attended with some pain in the lumbar region. This pain increased somewhat but not to a degree to suggest to the woman, or her family, that medical aid was required, but rather that it would be relieved by defecation. She remained an hour in the water-closet, and then went to bed with her lumbar pain decidedly less. An hour and a half later, there was a renewal of the desire to go to stool, with pain in the loins such as she had felt before when constipated. As she rose from her bed and brought her thighs together in the act, she was prevented by an obstruction which, upon examination, was found to be the head of her infant protruding from the vulva. At no time had the question of parturition occurred to her, and her first intimation as to what was going on was when she touched and saw the child's head between her thighs. The patient was a woman of calm temperament and good health and belonged to the cultivated class. There was nothing in her antecedents that would have any bearing upon this nearly painless labor. There was no abdominal colic at any time, there were no terminal expulsive pains, which are usually so severe; in fact, the only evidences of the process of parturition were the lumbar pains, the feeling of weight in the rectum, and the illusory desire to defecate.

Air Embolism. — Hektoen adds a case to the rather limited series of illustrations of sudden death by the introduction of air into the circulation through ruptured uterine veins.[2] The patient was a woman of nineteen years, married seven weeks before her death, but pregnant in the fourth month. She was in good health, except that she had occasional attacks of headache and vomiting. She went to her bedroom for the alleged purpose of changing her dress. After she had been in the room about ten minutes, the noise of a fall was heard. Her husband at once entered the chamber and found her lying on the floor with her head against the wall; beside her was a Davidson's syringe, a chamber-vessel and a basin of cold water, all arranged in such a way as to suggest that she had commenced to take a vaginal douche or was about to do so. Her husband placed her on the bed and then found that she was dead. All this transpired within twelve minutes.

The autopsy was made twenty-four hours later. There was no sign of decomposition. There was no sign of violence about the external genitals, and there was no blood or other fluid in the vagina. The uterus was enlarged so as to fill the pelvis. The right ventricle and auricle contained bloody froth; the left ventricle was empty. The lungs were congested and œdematous. The veins in the abdomen contained interrupted columns of blood and air. Within the cavity of the womb were two or three fluid ounces of blood. At the inferior border of the placenta a separation had occurred to the extent of about three-quarters of an inch. Within this portion of the uterine wall were seen the openings of many ruptured sinuses. The other organs, the kidneys, liver, spleen, stomach, intestines and brain, presented nothing abnormal.

A Case of Infanticide with Rupture of the Spleen. — Coutagne, of Lyons, reports the following instance of rupture of the spleen in an infant.[3] A woman, twenty-nine years old, was delivered of a living child on the 17th of September; on the 27th of the same month she threw the child from a wharf, intending that it should be drowned in the river below. It was killed by striking upon the edge of the stone wharf-pier, which had arrested its fall. The autopsy discovered some head injuries; but the most important lesion was a rupture of the spleen. In the abdominal cavity were 150 grammes of blood. The splenic region was the centre of a collection of large clots. The spleen was of normal consistence and color; it weighed 17 grammes; on its outer surface, at about the middle, were three large transverse rents, joined by a fourth vertical fissure; two of these lesions involved the entire thickness of the organ, extending through to the capsule on the inner surface. There was a subcutaneous ecchymosis of the size of a small pea, but no other injury to the left hypochondrium. The ribs were intact. The supposition that the injury was the result of a direct blow over the spleen seems to M. Coutagne to have been demonstrated by the small size of the organ, its mobility and its protection under an osseous covering, which in infancy is endowed with special elasticity.

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[1] Jour. de Méd., April 19, 1891; New York Medical Journal, June 27, 1891.

[2] North American Practitioner, March, 1891.

[3] Bulletin Gén. de Thérap., September 15, 1891.

IS A MALIGNANT PUSTULE A DISEASE?

A man living in Iowa had been, for some time before his death, insured against bodily injuries, in a sum not exceeding five thousand dollars, by a Mutual Accident Association of New York City, the condition of the insurance being that the bodily injuries should be the result of external, violent and accidental causes, and not of disease. He had been in Iowa but two months when his death occurred, and a claim was at once made against the company for the full amount of the insurance benefit. It appeared that in some unknown way he became the subject of a malignant pustule on the lip, and that this was the sole cause of the death. He had been a bookkeeper in a meat market, and, later, a clerk in a railroad freight office. Car-loads of hides frequently passed the railroad station where he was employed, and a large number of cattle were slaughtered in the neighborhood: but there was no direct proof that he ever came in immediate contact with the hides or with the animals. Yet it was claimed by the plaintiff, in the suit brought against the insurance company to recover the sum above named, that the pustule from which the insured died was the result of an external injury accidentally received; it was not a disease but an accident. In support of this proposition some elaborate expert testimony was introduced. The leading medical witness stated that malignant pustule is not a disease, in the strict sense of the term, but "a pathological condition of the system," caused by the accidental inoculation of "diseased or putrid animal matter, infested with bacteria or anthrax bacilli, upon the thick skin of the lip, whence the bacilli multiply and are diffused through the system." The animal virus that produces the sore comes from the hides, hair, wool or flesh of animals suffering from anthrax, and it may be transmitted to human beings by direct contact, or it may be conveyed by insects and implanted upon some exposed part of the body. The witness admitted that there had been some "epidemics" of this "pathological condition" in this country.

The defendant company claimed that the disease which caused the death in the case at issue was a carbuncle; and, in any event, whether it was the result of a carbuncle or of a malignant pustule, the death was by disease and not from accident. In behalf of this view, more expert testimony was taken, Dr. Prudden, the distinguished bacteriologist, being among the witnesses.

The judge instructed the jury that if the cause of the death was a carbuncle, the plaintiff could not recover his claim; but that if it resulted from a malignant pustule, his claim was recoverable. The jury returned a verdict against the company. The case was carried to the Court of Appeals; the judges of this court were divided in their opinion, five of them declaring that the evidence of the physicians called for the plaintiff showed clearly that death from malignant pustule was regarded generally by medical authorities as death from disease; that "accidents" cannot be "epidemic"; and that "a pathological condition," which is not a "disease," offered an insufficient basis for an insurance claim against an Accident Insurance Company; two of the seven judges dissented from this view and held that "the infliction of animal virus by some exterior force or power was a bodily injury effected through external, violent and accidental means."

Lowell, who reports this case,[4] suggests that if the position of the minority of the judges be correct, in this instance, it would be equally correct if applied to a person who should pass through a hospital where there were cases of scarlet fever or small-pox, and should contract fatal infection thereby. He might go further in his suggestion and include the "accidents" which the contagium of syphilis or the bacilli of tuberculosis or the micro-organisms of other "pathological conditions," generally called infectious diseases, bring about.

PROCREATIVE ABILITY AFTER CASTRATION.

Massazza reaches the following conclusions as the result of some experimental researches undertaken in the laboratory of legal medicine at the University of Pavia:[5]

(1) Castration does not immediately deprive an animal of *potentia coeundi.*

(2) One can find, for some time after removal of the testicles, normal spermatozoa in the efferent ducts and in the seminal vesicles.

(3) These spermatozoa do not always retain their fecundating power.

(4) Only those zoosperms are fertile which preserve their characteristic movements, or which can recover those movements by a special treatment.

(5) If one finds in the liquid withdrawn from the efferent ducts or the seminal vesicles zoosperms with the body detached from the tail, he may conclude that all the spermatic filaments are dead.

(6) The fecundating power of zoosperms found in the seminal passages of animals castrated does not continue more than nine days after the operation.

(7) If one applies to the human subject the results demonstrated in animals, one may conclude that the activity of the zoosperms lasts a short time only, and does not extend beyond the ninth day after castration.

(8) As it is probable that a man who has just been mutilated by castration will hardly feel capable of sexual intercourse during the nine days which follow the operation, the procreative potency of men who have been thus deprived of both testicles may be absolutely denied with confidence.

IS STERILITY A DISEASE?

Mr. Justice Holmes, of Dublin, has made a decree of much interest to medical men to the effect that sterility is not "sickness" within the legal sense. A suit was instituted by a Dublin physician to recover fees to the amount of nineteen guineas for attendance upon the wife of a solicitor. The lady, it appeared, suffered from no other disease save sterility, but anxiously desired a cure for this disability, and sought advice with this object in view, whether with or without the knowledge and consent of her husband did not clearly appear. The physician attended and made many examinations and sundry applications of sponge tents and other instruments, for the purpose of dilating the cervix uteri. The lady's husband refused to pay the gynecologist's bill, on the ground that the treatment of his wife for the cure of sterility was not a "necessary" for which the law required him to pay, and on the additional ground that the medical attendance was without his, the husband's, knowledge or consent. The law laid down by the judge in his charge to the jury was as follows: (1) Every man is bound to provide necessary medical care for his wife in case of sickness. (2) Every husband is liable for payment of fees in case of such sickness, whether he knows of the attendance on his wife or not. (3) But sterility is not a sickness for the treatment of which a husband can be made liable; it does not shorten life, or prevent the discharge of household duties, or cause physical pain. Therefore medical attendance for the cure of such a condition is not a "necessary" within the meaning of the law, and the physician in this suit could not recover the fees charged. It should be added, however, that he could still recover against the separate estate of the wife, if she had any, for "work and labor done," though the "work and labor" might not be legally "necessary" as against the husband.

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[4] Brooklyn Medical and Surgical Journal, June, 1891.
[5] La Riforma Medical, February 9, 1891.

Reports of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

MEETING of January 5, 1892, the President, DR. L. C. GRAY in the chair.

THOMSEN'S DISEASE.

DR. C. L. DANA exhibited a male patient, thirty-three years of age, who presented the typical phenomena of this disease. The family and personal history of the patient were good. There was no specific trouble, and no previous nervous disturbances. The first symptom noticed was a weakness of the muscles, which came on at the age of seventeen. Three years subsequently it was found that, when the fists were closed, they could not be opened again, voluntarily, for some little time. These conditions had increased until at the present time, the only muscles not involved in the process were those of the thighs and upper arms. The myotonia was most marked in the muscles of the forearms and legs. No contractions of the pillars of the fauces were observed. There were no sensory disturbances. Reflexes were nearly abolished and could only be obtained by reinforcement. There was slight increase of reaction, to the galvanic current but not to faradic. The author felt convinced from very careful tests of the muscles that the phenomena were confined to the muscles themselves and that it was not due to a reflex influence, but that the disease was a purely muscular one.

PERIPHERAL NEURITIS, OR POSSIBLE LESION OF THE POSTERIOR NERVE ROOTS.

DR. W. M. LESZYNSKY presented a patient with the following history: A woman, fifty-three years of age, while trying to raise a heavy weight, injured the shoulder-joint. Neuritis of the brachial plexus developed within a few days. When she first came under treatment nearly six months after the accident, she was suffering from extreme pain and tenderness in the course of the median and musculo-cutaneous nerves. There was no circumscribed paralysis but a general weakness of the entire limb. The pain was relieved by treatment. Within two weeks the entire extremity gradually reached a condition of complete anæsthesia, including loss of muscular sense. Subsequently the adductor pollicis and the flexor longus pollicis became paralyzed. This paralysis had disappeared, however, within ten days, and simultaneously, there was a restoration of all forms of sensibility, including the muscular sense, over the thenar group of muscles and the entire thumb, the rest of the limb remaining anæsthetic. There was diminished faradic irritability in the thenar, hypothenar and interossei muscles. Any hysterical element could be excluded. He thought the diagnosis rested between a peripheral neuritis affecting the sensory nerve branches, and a possible lesion of the posterior nerve roots.

DR. MARY PUTNAM JACOBI did not see why Dr. Leszynsky was so positive in excluding hysteria as the probable cause of the condition in his case. The distribution of the anæsthesia was such as one might expect in an hysterical patient. Because there had been no other exhibition of any recognized symptoms of hysteria, did not exclude the disease in such a case as just presented.

SPASMODIC SCREAMING.

DR. J. A. BOOTH presented a patient aged seventy-three years, a peddler by occupation, who had been under observation in the Nervous Department of the Manhattan Eye and Ear Hospital for the past four years. He had also been a frequent visitor to the various clinics in the city. The patient had enjoyed good health, well up to nine years ago; about that time after one week of great headache, he had an attack of left hemiplegia with disturbance of speech. He was ill in bed fourteen weeks, and during this time had suffered intense and constant pain in the head. The paralysis had gradually improved; the disturbances of speech had disappeared, and he had returned to his business of peddling one year after the attack. Ever since the onset of illness he had had more or less head pain, localized over the right parietal region, and which he had described as appearing in a spasmodic manner shooting up to that portion of the head. The attack was ushered in by a flexion of the ring and middle fingers of the right hand, the other fingers being straight, the whole hand was then rapidly rotated, the attack culminating in a loud scream and the placing of the hand on the right side of the head. He had also complained of not being able to sleep, and his wife had corroborated this statement by adding that he was a nuisance to her and the neighbors by these attacks of screaming at night. These paroxysms could also be brought on apparently, by suggestion, although the speaker had never been able to get the patient under the hypnotic influence. After going over the case carefully, Dr. Booth was inclined to believe that at the present time the patient was more of a simulator than anything else.

DEBATE ON THE THERAPEUTIC VALUE OF HYPNOTISM.

Dr. L. C. Gray said that his object in calling for such a discussion was to ascertain the consensus of opinion of the New York Neurologists in regard to the value of hypnotism therapeutically. He did not want to hear any historical data on the subject, but the personal experience of those who had given the matter serious attention.

Dr. Dana referred briefly to the work of the late Dr. Beard, as being the only contribution made by an American author on this subject. From a long series of experiments that writer was convinced that hypnotism was a real condition and not a myth. He was not able, however, to produce partial states of hypnosis, although he attached some value to suggestive therapeutics. The speaker had been able to produce complete hypnosis in fifteen per cent. of the cases submitted for experiment, and only a partial state in from thirty to fifty per cent. As to its value as a remedy in any of the known neuroses, it was doubtful if it had any efficacy. There were many therapeutic measures which were so much easier of application and which possessed recognized virtues, that it seemed to the speaker unwise to exchange them for something with such subtle power, and so difficult of control, as was hypnotism. Taken altogether it was a remedy that could rarely, if ever, be used with benefit.

Dr. G. W. Jacobi said that he had been through two epidemics of hypnotism. The first, lasting from 1880 to 1884, and the second in 1888. In order to ascertain just what position he occupied in regard to the value of hypnotism as a therapeutic remedy, it was necessary for him to review his work in this direction. From old note-books he had found a record of nine cases marked cured, in which hypnotism had been the remedy. In following out the further histories of these cases, which were of various forms of hysterical neuroses, it was found that in all and every instance there had been relapse of the trouble. This result had no doubt been the cause of the author abandoning hypnotism as a therapeutic agent. While it might possibly be good for some subjects, and for the control of some symptoms temporarily, why should we use a method that was laborious and surrounded by mysticism and charlatanism, when other remedies had to be ultimately resorted to anyway. The only way in which any conclusion could be arrived at in regard to the therapeutic value of hypnotism was by means of statistics, and these, so far, had been more or less unreliable.

Dr. Vought described the method of producing hypnosis as employed at the Vanderbilt Clinic. Some bright object was held before the patients' eyes and at which they were told to gaze, while the physician encouraged them to try and sleep. Such means had rarely failed to produce the desired hypnotic condition. In no instance was bad effect observed to follow its use; in some a slight pallor came on, but nothing of further consequence. The therapeutic application of hypnotism was successful in most of the cases, such as neuralgias and persistent pain. The speaker thought that it was to be recommended in this class of cases.

Dr. E. D. Fisher said that so far as his experience and personal observation went, he was not favorable to the use of hypnotism as a therapeutic remedy. He had not, as yet, seen or heard of any permanent successful issue from such procedure. He thought that it might also be a dangerous measure in many cases, especially in certain mental conditions. At any rate, if hypnotism were to be used at all it should be only with the greatest precaution.

Dr. J. W. Collins has used hypnotism in thirteen cases and was able to report cure in five of these. It was not his practice to use the remedy promiscuously, but when he had decided that the case was suitable for hypnotism he had carried out the system of mental suggestion, and was able to get quite good results from it. While he did not claim that hypnotism was a panacea for all nervous diseases he was satisfied that it possessed therapeutic value in certain cases. He thought that it was a great mistake to say that patients were non-hypnotizable if they did not succumb to the influence in a short time. He had seen the masters in this branch, at work at a patient for one, two and even three hours, in some instances, before they could be brought under the hypnotic influence. He did not want to appear as an enthusiastic advocate for hypnotism, but he was convinced that it had a field in certain psychical conditions and especially in moral perversions. Considering the fact that the present method of dealing with these cases offered but little in the way of cure, there should be no hesitancy in at least giving hypnotism a fair trial and not being satisfied with simply an attempt or two, but persisting until such a condition of the patients was brought about, so that mental suggestion could be responded to. If carried out consistently the author was sure that hypnotism would offer more as a moral educator than any other measure that had ever been advanced.

Dr. Leszynsky thought that the length of time that it took to get the patient under the hypnotic influence was a matter of indifference. As yet, there were no statistics to show the bad influence of hypnotism, but in cases where the author had failed to produce hypnosis the patients had been left in an uneasy, uncomfortable state. He did not think hypnotism by any means devoid of danger. He described the case of a child twelve years of age, whom he had treated for hysterical attacks of laughing and crying. She had improved very much under ordinary attention and finally passed out of the author's hands. Some time subsequently there was a slight return of the trouble and the mother took the child to some one who tried hypnotism, the first attempt being unsuccessful but was persisted in until complete hypnosis was brought about three or four times. From this time on all of the symptoms became exaggerated and when the author saw the patient again she had developed all of the phenomena of hysteria. He felt satisfied that hypnotism was responsible for the deterioration in the nervous tone and the development of hystero-genic zones. It had been two years since he had practised hypnotism. The last patient upon whom he had tried it was suffering from singultus, during the hypnotic state the spasm was abolished; suggestion at this time that the paroxysm would not return when consciousness was restored, proved a failure, as the spasm had returned in an aggravated form. As for hypnotism being applicable in insanity it was thought rather doubtful that it could be done at all, for the reason that the degree of concentration necessary could not be obtained in this class of patients.

DR. BOOTH had, during the past four years, made use of hypnotism in twenty-four cases, fifteen females and nine males. Of the fifteen females, ten were easily hypnotized and responded to suggestion, in five no hypnotic effects were produced, although repeated attempts were made. Of the nine male cases six were failures. The histories and treatment of four cases were then read in detail. Case I. A young girl, aged seventeen years, suffering with tremor of the left upper extremity, was hypnotized daily for one week, during which séance, proper suggestion was made. At the end of that time the tremor had entirely disappeared and had not returned a year after treatment. Case II. Hysterical attacks in a girl, aged nineteen years. She was easily hypnotized and was markedly lethargic going into a deep sleep from which it was difficult to arouse her, either by suggestion or stronger measures. Subsequent séances did not produce such marked effects and were successful in lessening the number of attacks. One attack only had occurred during the past year. Case III. Double ptosis. The patient was easily hypnotized and after fourteen séances there was marked improvement. Case IV. Another patient with hysteriod attacks, which were ultimately cured by hypnotism.

DR. B. SACHS had not been able to do much with hypnotism, and as yet had accomplished nothing therapeutically. He had tried the method in cases of hystero-epilepsy and where persistent pain had existed for years, in every instance the therapeutic effect was absolutely nil. The only two cases in which a certain amount of benefit seemed to be derived from hypnotism, were of nerve-deafness occurring in two young women. The improvement continued during four weeks in one case, and three months in the other. He thought, however, that hypnotism, as far as any real therapeutic value was concerned, was only a fashion at present and that it would soon be laid on the shelf.

DR. JACOBI described a case which had recently come under her observation, the course of which, possibly bore some analogy to the way in which hypnotism operated upon the nutritive states through some controlling mental emotion. The patient, a woman of emotional characteristics, had complained of severe pain in the shoulder-joint. There was present much swelling and anæsthesia. Despite all treatment the condition had increased in severity. After the tenth day hysterical attacks of screaming came on, followed fourteen days after the onset of the trouble, by considerable vomiting of blood. About this time the patient's child had become dangerously ill and had died in a few days. From this time on all her symptoms connected with the shoulder and the general condition had gradually subsided and finally disappeared. Health in a short time was completely restored. The speaker thought this was a clear case of great mental emotion having the power of re-organizing and controlling the nutritive states, as shown in the rapid recovery when the mind was concentrated on the illness and death of the child.

DR. L. C. GRAY had practised hypnotism since 1886 upon hundreds of cases in his hospital wards, but had finally given it up in this class of patients, as he had found that it had a demoralizing influence and that moral control over them was lost by persisting in its use. In some cases where he had tried hypnotism he had found that his patients would leave him and go to some one else. He thought, however, that in the present study of hypnotism we were only on the verge of a great developmental knowledge of psychical laws which might prove to be of great value. From his experience in the use of this agent as a therapeutic measure he was not able to say in what class of cases or individual case that it would, or would not, be beneficial. If he could draw any deduction he would say, that the hysterical cases offered the best results. No one understood the nature of hysteria any way and there were no conclusive criteria by which hysteria could be diagnosed, but in the symptoms laid down as such, hypnotism had produced some amelioration although relapses had occurred. In functional symptoms such as delusions of fear, fright and timidity and so forth, good results were obtained by hypnosis. In other neuroses such as neuralgias and organic diseases of the nervous system, the benefits were not as good as from other known remedies. The author had never been able to hypnotize an insane patient and in the paronoiac the practice had filled these patients full of delusions. Altogether no good results were obtained in these two classes of patients, but much harm in the latter. There need be no difficulty in hypnotizing patients, if it could not be done in one way it could be done in another. The author had found that where a patient was hard to get under the influence they were apt to sink into coma afterward. He had had such a case where the patient when observed some time after being hypnotized was almost in a comatose state and was very ill for the remainder of the day. He had never heard of a death being produced by hypnotism, but did not think it unlikely that it might happen. He would not, however, condemn hypnotism until it had a further and more conscientious trial.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION IN OBSTETRICS AND GYNECOLOGY.

GEORGE HAVEN, M.D., SECRETARY.

A MEETING of the Section was called Wednesday, December 28, 1891, to elect a Chairman and transact such other business as might come before the meeting.

DR. C. M. GREEN was unanimously elected Chairman, and upon assuming the chair said: The history of this section is somewhat interesting. It has had spasmodic meetings at times, and many of the meetings that have been held have been very profitable and satisfactory. I have served, myself, as secretary of some of the other societies, and I know how difficult it is to get material for papers, and to find men who are ready to come and talk and bring specimens. I can see no reason why we should not have an active working section in this department. There are other societies in Boston; but Boston is a large city. Other societies do not absorb all the material of the city, and there are a good many members of the Suffolk District who are not members of some of the special societies, so that there is no question in my mind but that there is ample material to make this section a success, provided the members will co-operate with the officers of the Society to make it such. It is very hard for a secretary or presiding officer to go to members and beg them to write a paper, and I hope that the members of the section will be willing to come forward and offer to read papers.

I suppose the meetings will be held once a month. We ought to select the evening for meeting, to-night.

Upon motion of Dr. E. W. Cushing, the section voted to meet hereafter on the second Wednesday of each month.

Dr. Green: Of course, the work of the section will be chiefly the reading of papers. It has always seemed to me that a good deal of valuable work might be done in the way of discussions. There are a good many members who have not the time to prepare a set paper, but who would be very glad to come and discuss a subject that might be selected. It seems to me that that would be one very profitable method of spending our time; possibly a paper at one meeting, and discussion at another on some broad subject. It is to be hoped that members who have pathological specimens will bring them.

It has seemed to me that the mere presence of the reporter and the fact that whatever one says is to be printed, deters some of us from saying anything. I look upon publication to some extent as being a positive injury to the well-being of medical societies. I have often hesitated from saying something I would have rather liked to say, because I did not want to take the trouble to correct the proof. We need not have anything more appear than we want to, and each member can cut his own remarks out if he does not see fit to revise the report.

Dr. E. W. Cushing: Dr. Price has written me that if this section is organized he will accept an invitation to come here and give us a paper on tubal pregnancy, as he has had over sixty-five cases on which he has operated. It seems to me if we could have subjects for discussion beforehand it might obviate the difficulty of getting papers.

Dr. Cushing then showed a

CANCEROUS UTERUS REMOVED BY HYSTERECTOMY.

I thought it would be interesting, owing to an obstacle. The operation of vaginal hysterectomy where there is no obstacle is so easy and so well defined that there is very little to be said about it, but every once in a while a case occurs where there is difficulty in making the diagnosis and performing an operation. This specimen was from a lady sent to me by Dr. Sanford, of Everett. The disease was noticed last July. A specimen was sent to Dr. Whitney who pronounced it cancer. I saw her on Saturday, and operated last Monday. On examination, the disease seemed limited. The uterus could be freely moved up and pressed down without ether, but when it came to operating the growth would not come down, and I at first thought it might be owing to implication of the broad ligaments; but the ligaments seemed reasonably free from disease. The contour of the uterus could not be accurately made out. On opening the cul-de-sac of Douglas, the uterus would not come down. When I had severed so much of the broad ligaments that the uterus should have come down, it could not be retroverted. Reaching the finger far up I found quite a mass. I made out that the mass was on one side of the uterus, and by tying the ligament on the other side I was able to slip it out sidewise, and found this fibroid tumor in the fundus, that being the principal point of interest in regard to the case.

In regard to the performance of the operation I feel a little more free to speak in this section than in a general section. I have been taking a good deal of interest in the question whether to operate with clamps or with the ligature. As you know the operation with clamps is common in France, and in this country I think it has made its way, so that it is generally used. In Germany, the ligature is used almost altogether. After seeing Olhausen operate year before last with catgut, that seemed so pretty as compared with the clamp operation that I was incited to try it. It has certain advantages and certain disadvantages. In the first place, I am persuaded catgut will do whatever it is necessary for a ligature to do. It has the advantage that the clamps are not there to irritate the patient, that there is less danger of injuring the viscera by pressure, and there is not the trouble in removing the clamps the second day; it also avoids the disadvantage that when the clamps stay in the vagina two days the plating comes off, so that it is expensive and troublesome keeping them clean and having them replated. It is easier and quicker to do the operation with clamps than with ligatures, especially for beginners, and it has seemed to me that the clamps could be put on farther from the uterus than the ligature. Those two points are all that there is to offset the advantages in finish and technique and easy convalescence in the operation with ligature.

Dr. F. L. Burt: As Dr. Cushing has shown this specimen, I think it might be interesting to relate a case I have seen within a few days, of hysterectomy which was performed four years ago. A year ago I saw a lady with Dr. Hardy, who was taking care of her. At that time she was very fleshy, and apparently in perfect health. She gave a history of having had uterine cancer three years before, and that Professor Byford, of Chicago, had removed it. At this time she gave a history of pain just above the left groin. I made an examination to try to find out whether there was any cancer of the pelvis or not. I found that the uterus was gone and there was no evidence, under ether, of any development of cancer. Nothing was done. About last spring she began to suffer so much that she had to have medical attention, and has been treated from that time on. There has not been any treatment of any kind that has been of any service except to relieve pain. She has complained of pain so severe that about a week or ten days ago she was taking very large doses of morphia. The pain was in the neighborhood of the kidneys. There was no complaint of pain or tenderness at any other point. She wasted away so that a few days ago, the time she died, last Sunday, there was not much of anything of the body except a bloated condition. The limbs were quite a good deal swollen. At the autopsy, there was found a liver about one-third larger than normal, and at least two thirds was fatty, degenerated in masses, some of them as large as the fist, and from that down to little ones. She had not complained of the liver. The digestion and appetite had been good all the time. The left kidney was nothing but a sac, no kidney at all. The right kidney was about one-half gone. The bladder was small and about two-thirds filled with a cauliflower-looking material which looked like cancer. I know only just from the macroscopic appearance. There has not been any examination made, and the only symptom that she has had that would account for any trouble about the kidneys or bladder has been frequent hæmorrhages, and she had felt better after those hæmorrhages. There was no tenderness over the bladder, but the bladder was two-thirds filled with this mass, and everything in the pelvis was matted together so that it was one solid mass, and that woman has been passing urine naturally, except at times bloody, and no symptom whatever except pain in the kidneys. The peculiarity of the case was the few symptoms and the extensive disease of different organs, which presented no symptoms at all, and the fact that all this had not presented itself until after about three years following this vaginal hysterectomy by Professor Byford.

Dr. Cushing: About a month ago in the *Archives of Gynecology*, a New York publication, there was a severe article by Dr. Evans, which was given the place of the leading article, condemning the operation. Tait also disapproves the operation in toto, on the ground that anything that recurs is sure to be cancer, and anything that does not recur is not cancer. This article by Evans, would not amount to anything except that he shines in the reflected light of Tait, who seems proud of his ignorance of microscopical diagnosis. I should be glad to know if that opinion is held to any considerable extent, and if so, why? It seems to me if a woman can be taken off her bed and have from six months to two or three years of health, that is a positive gain and legitimate surgery. Tait is quoted again and again. At the time of the National Congress in Washington, Reeves Jackson made a great onslaught on the operation, and there have been grumblings ever since, but the consensus of enlightened surgical opinion is entirely in favor of the operation.

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MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

A stated meeting of the Councillors was held at the Medical Library, Boston, on Wednesday, February 3, 1892.

The meeting was called to order by the President, Dr. A. H. Johnson, of Salem, at 11 a. m.

Sixty-nine Councillors were present.

Delegates were appointed to other State Medical Societies as follows:

Maine. — Drs. G. W. Snow, of Newburyport; C. C. Tower, of South Weymouth.

New Hampshire. — Drs. F. W. Graves, of Woburn; H. K. Foster, of Peabody.

Rhode Island. — Drs. D. M. Edgerly, of Cambridge; C. C. Odlin, of Melrose.

Connecticut. — Drs. A. H. Johnson, of Salem; J. C. Warren, of Boston; H. R. Stedman, of Roslindale.

New Jersey. — Drs. F. A. Rogers, of Brewster; J. A. Gage, of Lowell.

In accordance with the report of the Committee on Membership and Finance, three Fellows were placed on the retired list, one Fellow was dropped for non-payment of dues, one was restored to his membership in the Society, and thirty-three Fellows were reported to have surrendered their membership, under By-law VI, by removal from the State.

The committee further reported that, in accordance with a vote at the previous meeting, they had received the funds and papers of the Society from the retiring Treasurer (Dr. Draper), had audited the same, and found them entirely correct, and had transferred them to the Treasurer-elect (Dr. Forster), receiving from the latter the usual bond and sureties.

In accordance with the recommendation of the committee, Dr. George Phōkas, of Athens, Secretary of the Royal Medical Society of Greece, was elected to honorary membership.

Several petitions for restoration to membership were, in accordance with custom, referred to Committees from the respective District Societies in which the petitioners reside.

A petition was presented from the Massachusetts Society for the Prevention of Cruelty to Animals, requesting the action of the Massachusetts Medical Society as to whether in its judgment *any law, and if so, what law*, should be enacted by our legislature to restrict or limit the practice of vivisection by physicians, medical or other students or pupils, *in medical or other colleges or schools.*

The petition was referred to Drs. H. P. Bowditch, of Boston; F. A. Howe, of Newburyport; and J. F. A. Adams, of Pittsfield, as a committee to report at a future meeting.

Dr. Fitz called attention to the fact that efforts are being made to erect a monument in Washington, D. C., to Dr. Benjamin Rush, and spoke in favor of the movement.

It was voted that a committee of three be appointed by the President to call the attention of the medical profession and its friends in Massachusetts to the efforts now being made to erect a monument in Washington to Dr. Benjamin Rush. This committee is empowered to receive and forward all subscriptions for the above purpose.

The following were appointed to constitute the committee: Drs. J. C. Warren and John Homans, of Boston; T. H. Gage, of Worcester.

Dr. Forster, by request, presented the following, which was voted: That a committee of five be appointed to report at a future meeting what changes, if any, may be necessary or expedient to secure a uniform examination of candidates for Fellowship.

The committee was appointed as follows: Drs. T. M. Durell, of Middlesex South District; G. C. McClean, of Hampden; J. H. McCollom and H. L. Burrell, of Suffolk; C. F. Withington, of Norfolk.

The President presented obituary notices of Drs. Henry I. Bowditch and Claudius M. Jones.

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THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, December 12, 1891.

Dr. R. A. Kingman reported, by invitation,

A CASE OF LAPAROTOMY FOR OVARIAN DISEASE.[1]

Dr. J. W. Eliot had found in a number of cases a region of dulness in the abdomen in front with tympany below all around. This is due simply to adhesions binding the intestines down.

Dr. F. B. Harrington said that ascites with a pelvic mass always makes one suspicious of papilloma.

Dr. J. G. Blake was present at the operation, and was struck with the completeness with which the disease was removed, although at first sight this seemed impossible. In one case of his own, as the pelvis was found so full of the mass, it was deemed best to do nothing. Life was prolonged by aspiration, from time to time. The prognosis is unfavorable, no matter what you may do.

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[1] See page 140 of the Journal.

Dr. C. M. Green reported a case of

PAPILLOMA OF THE OVARY AND FALLOPIAN TUBES.[2]

Dr. Geo. Haven said this case illustrated how difficult it was to diagnose the nature of any intrapelvic growth, without opening the abdomen. Dr. Green felt quite sure that we had to do with an ovary and tube, and the idea of a papilloma did not occur to me. What the nature of the mass was which appeared on the twelfth day must remain a mystery, and as far as the patient is concerned, is proved to be of no moment.

Dr. Mallory said that when the cellular elements of the growth were not very marked the danger of return was much less, and this was true of the specimen from this patient.

Dr. Eliot said that where the papilloma is removed in an unruptured cyst there may be no recurrence, whereas if the peritoneum is involved there is scarcely any hope. Scraping the peritoneum is of no use. Of course, if but a small portion were involved this should be cut out, with the hope of arresting the disease.

Dr. Harrington would remove a large tumor with a pedicle, simply for the purpose of getting rid of the mass, but would not subject the patient to a long operation.

Dr. Harrington showed a specimen of

GLANDULAR CYSTOMA,

and related the case. Two months ago the patient had acute pleurisy of the right side with large effusion. This subsided in a few days under the use of cathartics. Then ascites rapidly developed, and tumors feeling like fibroids were found.

Three weeks ago she was tapped and twenty pounds of fluid drawn off, which was examined by Dr. Whitney, who said it suggested papilloma. Yesterday he performed laparotomy, as the ascites had come on again in a few days. A tumor of the left ovary was removed. There was no evidence of disease of the peritoneum, although that was much inflamed. The tumor, which was soft and friable, resembling brain substance, nearly filled a basin. The fluid in the chest was apparently only a coincidence,

Dr. Edward Reynolds reported

CASES OF LABOR COMPLICATED BY PROLAPSED OVARIAN TUMORS.[3]

Owing to the lateness of the hour the discussion was postponed till the next meeting.

Recent Literature.

Addresses, Papers and Discussions in the Section of State Medicine at the Forty-second Meeting of the American Medical Association. Chicago. 1891.

These eleven papers constitute a valuable addition to the literature of State Medicine. Dr. N. S. Davis, the chairman, contributes a paper on the "Relation of Meteorological Conditions to the Origin and Prevalence of Acute Diseases." Dr. Geo. W. Jenkins furnishes a paper on "Hygiene in the Rural Districts." Dr. A. N. Bell on the "Beneficence of Disease, the General Purport of which is not Medical but Theological." Dr. H. O. Marcy contributes a concise, pointed paper on "The Coroner System in the United States," in which special comment is made upon the operation of the Medical Examiner System of Massachusetts. Dr. Jos. R. Smith, U. S. A., gives many valuable "Statistics of the Sickness and Mortality in the United States Army."

Dr. L. F. Flick takes very strong ground in his paper on "The Duty of the Government in the Prevention of Tuberculosis," in favor of preventing the disease by the action of sanitary authorities. The writer very plainly believes that it is not only within the power, but that it is the duty of such authorities to take all possible means for its prevention.

Dr. Sternberg's paper on "The Disinfection of Excreta" brings the subject down to date, and is mainly a commentary on the Report of the American Public Health Association of 1884. The substances recommended are chloride of lime, carbolic acid, creolin and quick lime. With reference to the latter he says, "We are disposed to give recently burned quick lime the first place for the disinfection of excreta in privy vaults, or on the surface of the ground." Under favorable circumstances "boiling water in the proportion of three or four parts to one part of the material to be disinfected, may be safely recommended." He emphasizes the fact very strongly that "there can be no disinfection in the absence of infectious material." Dr. P. H. Bryce contributes a paper entitled "The Sanitary and Unsanitary Relations of Underground Waters." Dr. Chancellor's paper on "Simple Methods of Sewage Disposal" is devoted mainly to the disposal of household sewages, and special prominence is given to a device of the author's invention in which the solids are separated by means of an iron precipitating tank.

Dr. R. H. Reed contributes some excellent original "Investigation on the Heating and Ventilation of School Buildings," somewhat after the method employed by Professor Rietschel, of Berlin, in 1885. The observations were made in four cities of Ohio, and in thirty-nine schools, and had reference to the number of pupils present, the cubic air-space, the temperature, humidity, barometric pressure, fresh air supply, amount of carbon dioxide at different heights in the rooms and other important points. Emphasis is given to the well-established fact that the carbon dioxide in occupied apartments is uniformly diffused through the air at different heights and is not massed at the bottom of the room.

Dr. D. F. Lincoln gives a few brief principles to be observed in the construction of school buildings.

The Chinese, their Present and Future: Medical, Political and Social. By Robert Coltman, Jr., M.D., Surgeon in charge of the Presbyterian Hospital and Dispensary at Jeng Chow Fu, etc. Illustrated. Philadelphia and London: F. A. Davis. 1891.

The author of this book spent several years in northern China as a medical missionary physician on the staff of the American Presbyterian Board of Foreign Missions. He had excellent opportunities for observation of the people among whom he practised his profession. His statements apply to the inhabitants of northern China; the manners, customs, characteristics and even the language of southern China differing in many respects from those of the north. Dr. Coltman has written a very readable book, illustrated with reproductions of photographs taken by himself.

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[2] See page 142 of the Journal.
[3] See page 133 of the Journal.

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Medical and Surgical Journal.

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ANNUAL REPORTS OF THE PRESIDENT AND TREASURER OF HARVARD COLLEGE, 1890-91.

From the report of the Dean of the Harvard Medical School, we learn that the whole number of students in attendance in that department of the University during the year was 353, as compared with 304 in the preceding year. Of these fifty per cent. had literary or scientific degrees. There were 65 applicants for the degree of Doctor of Medicine in the three-years' course, of whom 16 were rejected. There were applicants for the same degree in the four-years' course, of whom none were rejected; 10 of these students received the degree *cum laude*, and 11 received the degree of Master of Arts together with that of Doctor of Medicine. The fourth class was composed of 26 students, as compared with 23 last year.

The difficulties, which for the last thirteen years have attended the plan of offering a required three-years' and an optional four-years' course of instruction have been removed by the vote of the Faculty passed last May to establish a single four-years' course to go into effect in September, 1892.

The Faculty has not lost sight of the possible diminution of the number of students consequent upon this increase in the requirements for the degree, but it feels perfect confidence that the community which has enabled it to carry out its previous educational reforms, will respond favorably to any appeal it may have to make again for the realization of unselfish purposes which must in turn be of direct benefit to the community itself. The Faculty has no apprehension that loss of direct income will be allowed to interfere with the school's work.

The opening of the Sears' Laboratory building has not only directly benefited the departments of pathology and bacteriology, but indirectly those of anatomy, histology and embryology, by placing improved accommodations at the disposal of the teachers of these subjects.

The connection between the Medical School and the other departments of the university has been made closer during the past year by the adoption of a recommendation that certain laboratory courses, distinct from the regular instruction given to medical students, be recognized as suitable courses for students in the Graduate School. By a recent vote these courses have also been thrown open to candidates for the degree of Bachelor of Arts, thus enabling undergraduates intending to enter the medical profession to accomplish the very desirable object of shortening their period of academic training.

The Dean refers with much satisfaction to an important addition to the school's means of encouraging original research in medicine made by the establishment, through the generosity of Wm. S. Bullard, Esq., of three fellowships of $5,000 each, to be designated as the George Cheyne Shattuck, the John Ware, and the Charles Eliot Ware Memorial Fellowships. The income of these fellowships may be paid to any "student or member of the medical profession who shall be selected by the Faculty of the Medical School to make such original investigations in medical science as in their opinion will be most useful to the profession and the community."

A vivifying influence upon the prosperity of the Medical School is anticipated from the recent formation of the Harvard Medical School Association, which already has upon its rolls the names of 835 members. From these alumni gratifying proofs are being constantly received of attachment to, and enthusiasm for, the university and the school.

Much special work, in addition to its regular instruction, has been done in the past year in the departments of anatomy, histology and embryology, physiology, chemistry, pathology and bacteriology.

The amount of instruction in the clinical department, which, after all, must be regarded as the most important department of a medical school, has been constantly increased.

The Dean of the Dental School reports the number of students matriculating as 44. The instruction in anatomy, physiology and chemistry is given at the Medical School, in addition to which some of the teachers at the Medical School have given lectures. Some new courses of instruction in dentistry have been added. The Faculty of the school and the alumni association are much impressed with the urgent necessity of better accommodations for the school. Its endowment has been increased by a gift of $7,000 from an anonymous benefactor who had already given $6,000. The school is now out of debt and has an endowment of $15,205, beside a favorable balance of $3,817; but the present situation is obscure and inconvenient, and the building is not well adapted to its purposes. The high standard of the school necessarily limits the numbers of the students, so that it is practically carried on by the public spirit of its instructors. They have done much, and hope to do still more towards putting the school on a firmer foundation in a suitable building of its own.

The Veterinary School has an increase of fifty per cent. in the number of applicants for admission. A new and important instructorship in bovine pathology has been established which will be filled by Dr. F. H. Osgood, of Springfield, who will also assume other and still more important relations to the hospital. Mr. W. O. Underwood will give a course of practical talks upon the law of sales and warranty, which will embrace a general discussion of rules of evidence, with suggestions on expert testimony and the conduct of witnesses in court. The school is not self-supporting, but has been carried along by the hospital. It is very essential that either the school should be endowed, or that the hospital should be provided with larger quarters, and thus given a greater earning capacity. The two ought not to be separated.

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THE QUARANTINING OF INFLUENZA.

The attempt to deal with influenza as a disease dangerous to the public health is made the subject of comment in the *Local Government Chronicle* of January 16, 1892, as follows:

Dr. Parsons, who reported on the disease to the Local Government Board in July last, came to the conclusion that it was an infectious disorder, communicable in the ordinary personal relations of individuals one with another; and Dr. Buchanan recorded his opinion that henceforth there could be no doubt about this fact. Probably the Walmar and Ashford Local Boards rely on these opinions as justifying the notices which they have issued of their intention to proceed against persons for penalties who expose themselves in public while suffering from the disease. It is not, however, very likely that any very substantial results will follow prosecutions of this character. In commenting on the report of Dr. Parsons, Dr. Buchanan was careful to point out that early isolation precaution, which is so efficacious in preventing the spread of some infectious diseases, cannot well be applied to persons suspected of influenza among the bread-winners of a community; and he also drew attention to the brief incubation period of the disease, which enables it to give rise to some thousand attacks in the time that small-pox or typhus take to produce ten. He further stated that a better understanding of the natural history of the disease was a necessary preliminary to the discovery of better means for its prevention. In other words, the public are at present unable to protect themselves in any way against the malady; and, if this is the case, it is hardly worth while proceeding for penalties against the unfortunates, who, while suffering from the disease, venture to show themselves abroad. If the epidemic lasts a year or two longer, the chances of learning more about it will be multiplied. But considering the time during which diphtheria has been prevalent in this country, and the little that is yet known positively about it, it is impossible to feel sanguine that a solution of the whole mystery will be very soon arrived at. In the meanwhile, medical officers of health will do well to study Dr. Parsons's report, and to make the most careful records of their experience of the behavior of the disease.

The difficulties in the way of isolation are many and immediately suggest themselves; moreover, it still seems to us that transmission alone from person to person fails to explain many trustworthy observations and unquestioned features.

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VACCINATION STATISTICS.

Dr. Josef Körösi, director of the Buda-Pesth municipal statistical bureau, has lately written a pamphlet[1] in continuation of the "Kritik der Vaccinations-Statistik," which the author presented to the International Congress of Medicine, at Washington in 1887, the present paper having been presented to the tenth session of the same congress at Berlin, in 1890. It includes the statistics of 1886, presented in the earlier paper, to which are added the statistics of 1887 and 1888, as observed in nineteen hospitals in Buda-Pesth and in other provinces of Hungary.

The material of the statistics consists of observations made upon the patients admitted and treated in these hospitals for three years, the deaths which occurred in them, and the deaths which occurred throughout the provinces. These observations had reference to the condition of each person with reference to vaccination, making in all nearly 112,000 observations.

As a result of these observations the author concludes, that, if any slight increase of mortality can be charged to vaccination, with reference to certain specified diseases, there should also be placed to its credit a saving of life, at least three-hundred fold as great.

Körösi stands easily at the head of living statistical authorities upon vaccination, hence his conclusions are entitled to great respect. He attaches to vaccination a greater preventive power than to any other known means or appliance in the whole field of medicines.

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MEDICAL NOTES.

Deaths in Chicago from Typhoid Fever. — The number of deaths from typhoid fever in Chicago, from January 2d to 30th, 1892, was 285. This is the highest since last May, when it was 408. July, 1891, comes next, with 200.

Mortality of New York State in 1891. — The summary of the State Board of Health of New York, shows that during the year there were 123,878 deaths. Of these, 20,697 were from acute respiratory disease; 13,445, from consumption. There were only four deaths from small-pox. Epidemic influenza is estimated as having caused 8,000 deaths during its prevalence in March, April and May, and 2,000 on its reappearance in December. This is double the number supposed to have been caused by the epidemic in 1890. It was distributed uniformly through all the districts.

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[1] Neue Beiträge zur Frage des Impfschuetzes, Puttkamer & Muhlbrecht, Berlin, 1891, pp. 71.

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons of New York for 1892 will be delivered at the New York Academy of Medicine, February 12th, 19th and 26th, by Prof. Henry F. Osborn, of Columbia College. Subject: Present Problems in Evolution and Heredity. (1) The Contemporary Evolution of Man. (2) The Difficulties in the Heredity Theory. (3) Recent Studies upon the Germ-cells. The profession is invited to be present.

The Institute of Hygiene of the University of Pennsylvania, will be formally opened on February 22d. The following programme of ceremonies to be held in the Library of the University has been issued, to begin at 3.30 p. m.: Prayer, by the Rev. Dr. George Dana Boardman. Presentation of the new building to the Provost and Trustees, by Dr. S. Weir Mitchell, Chairman of the Committee on Hygiene. Acceptance on behalf of the Provost and Trustees, Provost William Pepper. Address, Dr. Benjamin Lee, Secretary of the State Board of Health. Address, Dr. John S. Billings, Director of the Institute. Address, Dr. H. P. Walcott, President of the Massachusetts State Board of Health. Inspection of the new Institute of Hygiene.

Nose-Cutting. — The Judges of the High Court of Bombay, says the *Medical Press*, have determined to make an effort to put a stop to the perpetration of the crime of nose-cutting, a form of crime very commonly practised among the native population of India, solely as a punishment for supposed or real marital offences. In the Indore Hospital, several wives were exhibited who had lately been operated upon for the restoration of their noses by the well-known flap-operation. The greater part of these women are young and pretty, and jealousy alone was the motive for this form of cruelty.

Suffocation of Infants in Bed. — The last annual report of the Registrar-General, in England, shows that during the year 1890, 1,500 children were killed by being suffocated by their mothers. Most of the cases were, undoubtedly, accidental; the mothers rolling onto the children during sleep. It was found that the proportion of deaths of infants from overlying is more than twice as high on Saturday night as on any other night in the week. The Registrar-General explains this fact as due to the greater amount of intoxication on Saturday than on any other day, as it is a general pay-day. Sunday and Monday nights yield the next largest proportions of such deaths.

The Proper Way to Prepare Tea. — The *British Medical Journal* in commenting on the death of a boy who died from drinking hot tea without milk, says that the tea had been left in the oven for some time, so that it had become a strong decoction of tannin. In being drunk without milk, the tannin was not brought into a relatively harmless albuminous tannate. It is on account of this method of making tea that it is so injurious to the digestion. Neither the Chinese nor the Japanese, who know how to make tea, use milk with it; but with them the hot water is poured on and off the leaves at table, and it is drunk as soon as it becomes a pale straw color. No people in the world drink so much tea as the Japanese, yet in Japan it is never injurious to the digestion, as by their method of preparation, the tannin is not extracted from the leaves.

Nice as a Health Resort. — The European edition of the New York *Herald* for January 16th contains a supplement describing the climatic and sanitary condition of Nice, founded on the investigation of Dr. E. C. Wendt, in behalf of the New York *Medical Record*. The health authorities of the town have apparently become convinced of the importance of pure drinking-water and good drainage, and have already undertaken to correct the previous bad condition of both. The conditions of the drains themselves were not in as bad a condition as the connection between the drains and the hotels.

NEW ENGLAND.

The Death-Rate in Boston. — The death-rate has returned to normal limits. There were 185 deaths reported last week, as against 168 the corresponding week last year. The death-rate per thousand is 20.9. Fifteen deaths were reported as due to influenza, from consumption 23, pneumonia 24, bronchitis 15. The number of persons over sixty years of age was 35.

Appropriation for the Carney Hospital. — The Boston Common Council has voted to request the Mayor to petition the legislature for the passage of the act granting authority to the City of Boston to appropriate a sum of $5,000 annually, for the maintenance of the Carney Hospital.

Gift to the Lowell Hospital. — Ex-Senator F. W. Howe has given $5,000 to the Lowell General Hospital, to establish a free bed.

To Advance Medical Science. — A bill has been introduced in the Massachusetts House of Representatives, calling for the appointment by the Governor of a commission of five citizens, who shall be known as the Commissioners of Medical Science. It shall be ther duty to convene at the call of the Governor, and to give hearing to any matter brought before them which has to do with any principle or system of principles looking to the practical advancement of medical science. The Governor and council are authorized by the bill to expend $5,000 for rewards to further the impetus of genius and research in the development of medical science.

The Annual Report of the Massachusetts State Board of Lunacy and Charity. — According to the annual report of this Board, during six months from April 1st to October 1st, there were 40,016 aliens landed in the port of Boston. Of these, 24,437 came from transatlantic ports and 15,579 from Canada. After the 1st of April the new emigration law came into effect. Of the aliens from transatlantic ports, 364 were detained for further examination; of these, 83 were permitted to land; 156 were required to give bonds, and 119 were returned to the countries from which they came. In connection with public farms, the report says: "It is evident that very much more could be accomplished in the way of preventing frightful abuses connected with these places and the consequent destruction of infant's lives, if the matter of licensing and regulating all places in which infants are taken to board as a business were placed in the hands of a State Board."

NEW YORK.

Reporters at Executions by Electricity. — Both houses of the Legislature have passed, and Governor Flower has signed, the bill allowing the presence of reporters at executions. The selecting and appointing power is vested in the warden of the prison where the execution takes place.

Medical Society of State of New York. — On February 4th the Medical Society of the State of New York, in session at Albany, elected the following officers for the ensuing year: President, Dr. Louis S. Pitcher, of Brooklyn; Vice-president, Dr. H. L. Eisner, of Syracuse; Secretary, Dr. F. C. Curtis, of Albany; Treasurer, Dr. C. H. Porter, of Albany. Drs. Eugene Beach, of Gloversville, E. P. Creveling, of Auburn, B. F. Sherman, of Ogdensburgh, and A. W. Suiter, of Herkimer, were recommended for State Medical Examiners.

The Harris Murder Case, terminated last week, has excited extraordinary interest among the medical profession on account of the expert evidence brought forward and the questions of medical jurisprudence involved. The justice of the verdict rendered, though the latter was founded purely on circumstantial evidence, seems to be generally acknowledged; though it is regarded as peculiarly unfortunate that the autopsy was not made until fifty-three days after the death of the victim. There is one point in which the defendant Harris clearly overreached himself, and that was in preserving two of the capsules which he prescribed for his wife, in order to show that they contained only an ordinary dose of morphia; for had none of these capsules come into the possession of the prosecution it could not have been proved beyond question that the druggist had not made a mistake in putting up the prescription.

A Unique Case was presented by Prof. E. G. Janeway at his clinic at Bellevue, on February 1st. The patient, who is the proprietor of a small hotel on the river front, breathes at the rate of 152 times a minute, and chronic inflammation of the trachea has resulted from this rapid respiration. The shortness of breath has incapacitated him for hard work, but otherwise he appears to be in fairly good health, a careful examination of the heart, lungs and other organs revealing the presence of no disease. The extraordinary rapidity of respiration is believed to be due to a lesion of the medulla oblongata resulting from an injury which he received more than two years ago. The man states that in the autumn of 1889, while serving on the Boston police force, he was thrown from the platform of an electric car, striking the pavement with his shoulders and the back of his head. In consequence of this fall he remained in an unconscious state for ten days, and when he recovered his consciousness he found that he was breathing, as he expressed it, "like a steam engine at high pressure." The rapid breathing has continued ever since, and he furthermore states that once or twice a month he suddenly becomes unconscious, and remains in this condition for several hours. This man presented himself at one of the hospitals in Boston more than a year ago, and has been under the observation of several physicians in Boston.

Miscellany.

THE BACILLUS OF INFLUENZA.

Canon,[1] in a further communication on the influenza bacillus found by him in the blood, says, that as the number of bacilli in a drop of blood is so small that they are hard to find, he has succeeded in cultivating them in the blood-drop itself. Separate drops of blood are put into an incubator and kept at a temperature of 37° C. In twenty-four hours the colonies have already begun to develop, and in forty-eight hours they can be easily found. From these colonies other colonies may be started upon different media. The pure cultures thus obtained have the same appearance as those already described by Kitasato.

TYPHOID FEVER IN CHICAGO.

The Health Officer of Chicago states, through the daily press, that an investigation made by him shows that only three deaths out of every fifteen reported at his office as being caused by typhoid fever is correct. This is about the worst reflection on the diagnostic ability of more than two thousand physicians that has ever come under our observation; but it parallels right along with the same official's statement that the lake water at the crib is free from contamination, as shown by chemical analyses made from time to time in his office.

Evidently the Illinois State Board of Health are quite skeptical in their belief of these official utterances, as indicated by their appointment of Dr. John H. Rauch as Sanitary Expert and Counsellor, with directions to at once examine and report upon the unsanitary conditions which are so productive of sickness, and the high rate of mortality from enteric disease in Chicago. . . .

It would be a right good thing for any one of the Chicago Medical Societies to appoint a good large committee of its best-known members to examine into and report upon the existing conditions in the Chicago Health Office. Official reports are either very valuable, because of their truthfulness, or misleading to the extent of actual criminality when fictitious. — *Journal of American Medical Association*, February 6, 1892.

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[1] Deutsche med. Woch., January 21st.

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NEW YORK AMBULANCE SURGEONS.

Advantage has been taken of this occurrence[1] in regard to which the autopsy shows the ambulance surgeon was blameless to abuse not only the ambulance surgeons of the hospital concerned in it, but the ambulance surgeons of New York as a class; they have been held up to the scorn and reprobation of the community. It is high time that a word should be spoken, and loudly spoken, in behalf of the young men in our hospitals. A more meritorious, intelligent, hard-working, conscientious set of young men cannot be found. They work hard and long to obtain their positions, which they do by giving proof of superior intelligence and acquirements, and they work hard and long while they hold them, in order the better to fit themselves for the practice of their profession. In a word, they are the flower of the younger men, and in a few years they will stand fully ahead of the best of the older ones. If they cannot do the work well, it cannot be done well. But, notwithstanding all that has been said, notwithstanding their liability to error, and notwithstanding their inability to see what is invisible, and to touch what is intangible — an inability which they share with the rest of mankind — their work is well done. The superintendent of one of our largest hospitals, when recently asked by a reporter if the present system of ambulance service was satisfactory, replied that it was, and "eminently so." And in this opinion of an impartial, and necessarily even an exacting, superior, we are confident that all who have personal knowledge of the matter will heartily concur. — *New York Medical Journal*, February 6th.

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UNIQUE THEORIES OF THE MECHANISM OF LABOR.

The *Maryland Medical Journal* criticises editorially the freedom of the medical press, when it receives without comment, articles containing recommendations of dangerous appliances, founded on grotesque theories. The case in point is an "atmospheric tractor" and a "uterine safety tube," the latter, essentially a soft rubber catheter to be introduced into the uterus during labor. The theory of the inventor is that "the power which expels the fœtus is the force of superheated air which is collected in the womb behind the child's body and expands with a rise of temperature in the womb during labor."

This sounds so much like an article which appeared in a medical monthly a few months ago, introducing an "atmospheric tractor," that we are inclined to believe that the author is the same; but in the mean time he has apparently changed his theory of labor, for in the article in question he says:

"When the uterus contracts round the body of the child, it expels all or nearly all the air from the uterine cavity, just as, when the hand firmly grasps a ball, the air is squeezed out from between it and the palm and fingers. The abdominal muscles then contract, forcing the fundus of the uterus down and pushing the child's body and head into the pelvic cavity. While this is occurring, there is a partial vacuum in the upper part of the uterus or that portion of it which is firmly contracted around the child. When the abdominal muscles relax, the pressure of the external air, and the expansive pressure of the air in the vagina are exerted against the head and shoulders of the child, and force it back until sufficient air enters the uterus to overcome and break up the vacuum and elevate the fundus. . . . That the retrocession of the head is due to atmospheric pressure almost altogether and only in a small degree to muscular resistance or pelvic rigidity, must be obvious to those who have felt the head stop and recede before it had reached the pelvic floor and while it was still suspended in space, a half an inch or more above the muscles."

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DISINFECTION OF THE HANDS.

Dr. H. A. Kelly,[1] after giving the details of a large number of experiments made by himself and his associates, gives the following conclusions as to the best method of disinfecting the hands:

Scrubbing the hands with especial attention to the nails, — not more than one millimetre in length, — for ten minutes in water, frequently changed, at about 104° F. Immersion of the hands in a solution of permanganate of potassium, made by adding an excess of the salt to boiling distilled water, until every part of the hands and lower forearms is stained a deep mahogany red or almost black color. They are then transferred at once to a saturated solution of oxalic acid until completely decolorized and of a healthy pink color. Washing off the oxalic acid in warm sterilized water.

By this simple process the hands are rendered more nearly absolutely aseptic than by any other known means.

The author has found that it is impossible to get rid of staphylococci by scrubbing the hands and nails from ten to twenty-five minutes with a sterilized brush, soap, and water, temperature 104° F. The bichloride of mercury solutions as used, up to 1 : 500, are not germicidal, as supposed. Previous erroneous conclusions as to the efficiency of the bichloride are shown to be due to an inhibiting action which may persist at least twenty-four hours after the last use of the drug. Hydrogen peroxide and lysol (four per cent.) were tested and found wanting.

In the present state of our bacteriological knowledge as to the causes of inflammation and suppuration, we are bound to use every means in our power to avoid sowing any unnecessary germs in our wounds. Soap and water are, Dr. Kelly believes, the best disinfectants, if we use but one, for they remove all germs which will come away easily. The bichloride of mercury, although dangerous on wounds on account of its property of coagulating and causing necrosis of albuminous tissues, has the valuable property of inhibiting those germs with which it comes into contact. Permaganate of potassium and oxalic acid are harmless to the hands and are germicidal. Soap and water plus the permaganate of potassium and oxalic acid are the only true germicides, and therefore the best disinfectants we possess to-day.

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[1] New York Notes, Journal, February 4th.

[1] American Journal of Obstetrics, December, 1891.

RESOLUTIONS OF THE GALEN MEDICAL CLUB, ON THE DEATH OF DR. C. M. JONES.

WHEREAS, we, the members of the Galen Medical Club, have learned with deep regret and sorrow that our friend and fellow-member Claudius Marcellus Jones has fallen in the battle of life, we desire to express our appreciation of his worth as a man, his skill as a physician and his unfailing devotion to his duties, in the performance of which he received the wound which, emphasized by too arduous labor in his chosen field, eventually caused his death.

Prodigal of work, frugal of words, his ripened scholarship, evidenced by his degree from Harvard, "summa cum laude," was ever at the service of his friends, as were to the poor and suffering his services as a physician regardless of the question of pecuniary reward.

Though he died just as he was about to enjoy the fruits of long years of work, those who knew him best know also that the satisfaction of duty well performed was to him the source of the greatest happiness. We shall cherish his memory as that of a valued friend and a man who was distinctly the type of what the true physician should be; and he will ever remain an exemplar whose career should be emulated by us and by all those who adopt the profession of medicine.

G. M. GARLAND, M.D., *Secretary.*

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THERAPEUTIC NOTES.

PREVENTION OF COCAINE POISONING. — Smith[1] recommends that patients be prepared by giving them a drop of a one per cent. alcoholic solution of trinitrine a minute before administering the cocaine, repeating the dose at intervals if the pulse be not affected and no pain or fulness in the temporal region be felt. The trinitrine acts almost as rapidly and continues to affect the vaso-dilators for upwards of half an hour longer than nitrite of amyl.

PIPERAZIN. — This substance in aqueous solution dissolves twelve times as much uric acid as is dissolved by the same quantity of carbonate of lithium. There is formed a neutral urate of piperazin, which is seven times as soluble as urate of lithium. Piperazin itself and also the hydrochlorate are easily soluble in water. The dose is from fifteen to forty-five grains a day. It may be prescribed as follows:[2]

℞ Piperazin . . . . . . gr. xv.
Aquæ destil. . . . . . . ʒ vi.
Syrup Aurant cort. . . . . ʒ v. M.
Sig. To be taken in the course of the day. To be increased gradually.

FATAL POISONING BY CHLORATE OF POTASH.— Dr. M. J. Donahoe reports in the *University Medical Magazine* for January, a case of a man thirty-six years old who took by mistake two tablespoonfuls of chlorate of potash in water. Four or five hours afterwards violent vomiting set in, accompanied by great pain and tenderness in the epigastrium, followed by albuminuria and cardiac weakness, gradually increasing for a week, when the patient died.

CLEANSING OF THE HANDS AFTER THE USE OF CARBOLIC ACID OR CORROSIVE SUBLIMATE.[3] — Carbolic acid is removed from the hands by bathing them for a sufficient time in alcohol and then anointing them with lanolin. After the use of corrosive sublimate solution the hands should be bathed in a solution of common salt 1 to 50, then washed with soap and water, and finally rubbed with lanolin.

SALOL AS A COATING FOR PILLS.[4] — In consequence of the fact that salol is not dissolved in the stomach, but is only attacked by the pancreatic juice after it reaches the intestine, Dr. Ceppi suggests its use for coating pills intended not to act before they enter the intestines.

℞ Salol . . . . . . gr. xxx.
Tannin . . . . . . gr. viiss.
Ether . . . . . . ʒ iij. M.

With this solution the pills are varnished several times, until the protecting layer is sufficiently thick.

COLD IN THE HEAD. — The following powder, to be used as a snuff, is recommended in *Médecine Moderne.*

℞ Talci pulv. . . . . . ʒ iiss.
Antipyrin . . . . . gr. xxx.
Acidi borici . . . . . ʒ i.
Acidi salicylici . . . . gr. vij. M.

OLD TINCTURES.[5] — Great care should be taken in administering tinctures which have stood for a long time in small vials. When the bottles happen to be loosely corked the alcohol readily evaporates, leaving the drug in the form of a concentrated tincture, the pharmacopœial dose of which might produce very serious, if not fatal, results.

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[1] British Medical Journal, December 5th.
[2] Lo. Sperimentale.
[3] Pharmac. Central., No. 28, 1891.
[4] Merck's Bulletin, December.
[5] Medical Record.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 30, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	862	325	12.24	22.56	3.36	.36	5.40
Chicago . . .	1,099,850	607	249	19.68	25.28	2.72	10.56	2.88
Philadelphia .	1,046,964	—	—	—	—	—	—	—
Brooklyn . .	806,343	406	146	15.49	21.40	5.64	.24	6.38
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	225	50	7.04	24.64	2.64	.44	3.08
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	154	50	11.05	13.65	.65	3.90	6.50
Cleveland . .	262,000	105	37	18.05	22.80	.95	.95	11.40
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	98	34	15.30	12.24	2.04	2.04	8.16
Milwaukee . .	240,000	104	48	23.04	21.12	3.84	1.92	13.44
Washington .	230,392	170	63	8.26	35.49	.59	1.18	.59
Nashville . .	76,168	40	12	12.50	20.00	—	—	2.50
Charleston . .	65,165	37	7	—	10.80	—	—	—
Portland . . .	36,425	21	4	—	28.56	—	—	—
Worcester . .	84,655	30	7	10.00	26.66	—	—	3.33
Lowell . . .	77,696	67	27	8.52	25.56	—	2.84	1.42
Fall River . .	74,398	—	—	—	—	—	—	—
Cambridge . .	70,028	38	14	2.63	23.67	—	—	2.63
Lynn	55,727	22	5	13.65	36.40	—	—	—
Lawrence . .	44,654	28	3	21.42	10.71	7.14	3.57	7.14
Springfield . .	44,179	19	4	21.04	15.78	—	—	10.52
New Bedford .	40,733	21	7	9.52	—	—	—	—
Salem	30,801	19	3	—	15.78	—	—	—
Chelsea . . .	27,909	16	3	6.25	18.75	—	—	6.25
Haverhill . .	27,412	12	1	8.33	—	—	—	—
Taunton . . .	25,415	15	3	6.66	20.00	—	—	6.66
Gloucester . .	24,651	12	3	16.66	16.66	—	—	—
Newton . . .	24,379	5	3	—	20.00	—	—	—
Malden . . .	23,031	14	2	21.42	21.42	14.28	7.14	—
Fitchburg . .	22,037	11	4	—	27.27	—	—	—
Waltham . .	18,707	3	0	—	—	—	—	—
Pittsfield . .	17,281	—	—	—	—	—	—	—
Quincy . . .	16,723	10	4	—	10.00	—	—	—
Newburyport .	13,947	6	2	33.33	—	—	—	33.33
Medford . . .	11,079	1	0	—	—	—	—	—
Clinton . . .	10,424	—	—	—	—	—	—	—
Hyde Park . .	10,193	—	—	—	—	—	—	—
Peabody . . .	10,158	1	0	—	—	—	—	—

Deaths reported 3,169: under five years of age 1,120; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 435, acute lung diseases 715, consumption 335, influenza 104, diphtheria and croup 157, typhoid fever 89, scarlet fever 87, diarrhœal diseases 28, cerebro-spinal meningitis 27, whooping-cough 15, erysipelas 14, measles 12, malarial fever 3, puerperal fever 3.

From diarrhœal diseases New York and Chicago 9 each, Brooklyn, Washington, Nashville and Lowell 2 each, Milwaukee and Haverhill 1 each. From cerebro-spinal meningitis Chicago 8, New York 5, Washington 4, Lynn 3, Brooklyn and Worcester 2, Cleveland, Lawrence and New Bedford 1 each. From whooping-cough New York and Pittsburgh 3 each, Milwaukee, Springfield and Gloucester 2 each, Brooklyn, Boston and Cleveland 1 each. From erysipelas Washington 4, Chicago 3, Brooklyn and Cleveland 2 each, New York, Milwaukee and New Bedford 1 each. From malarial fever New York, Brooklyn and Nashville 1 each. From puerperal fever Boston, Cleveland and Milwaukee 1 each.

METEOROLOGICAL RECORD,

For the week ending January 30, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...24	29.76	23	28	17	65	56	61	N.W.	S.	11	12	C.	O.	
M..25	29.45	36	46	26	77	70	74	S.W.	S.W.	14	10	O.	O.	.01
T..26	29.50	16	28	3	61	64	63	N.W.	W.	24	31	F.	C.	
W. 27	29.95	11	20	1	59	57	58	N.W.	N.W.	27	19	C.	C.	.01
T..28	29.93	21	30	12	70	48	59	W.	S.W.	15	12	O.	O.	
F..29	29.86	32	35	29	73	73	75	W.	S.E.	4	9	O.	O.	
S..30	29.98	28	36	21	72	76	73	N.E.	N.	29	20	O.	O.	.01
☞	29.78	24	32	16	68	63	66			20	16			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 6, 1892, TO FEBRUARY 5, 1892.

The order relating to Captain Aaron H. Appel, and First-Lieut. Julian M. Cabell, assistant surgeons, U. S. A., is suspended until further orders.

Lieut.-Colonel Joseph P. Wright, surgeon, U. S. A., is relieved from duty as attending surgeon at the Military Prison, Fort Leavenworth, Kansas, and will repair to San Francisco, Cal., and assume the duties of acting assistant medical purveyor, taking charge of the medical purveying depot at that place, and relieving Lieut.-Colonel George M. Sternberg, surgeon, U. S. A., who, upon being relieved, will proceed to Governor's Island, N. Y., and report in person to the Commanding General Department of the East, for duty as attending surgeon and examiner of recruits in New York City.

First-Lieut. Henry D. Snyder, assistant surgeon, now temporarily serving at Fort Reno, Oklahoma Territory, is assigned to that post.

First-Lieut. Samuel R. Dunlop, assistant surgeon, is relieved from duty at Fort Sill, Oklahoma Territory, and assigned to duty at Fort Supply, Indian Territory, where he is now temporarily serving.

Major John Brooke, surgeon, U. S. A., is granted leave of absence for twenty-eight days.

Captain Aaron H. Appel, assistant surgeon, U. S. A., granted leave of absence for twenty-three days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 6, 1892.

J. L. Neilson, surgeon, detached from Training-ship "Portsmouth" and granted two months' leave of absence.

SOCIETY NOTICE.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, February 17th, at 7.45 o'clock.

Papers: Dr. Gertrude Van Pelt, "Cases of Dyspepsia, with Treatment based upon an Examination of the Gastric Juice." Dr. A. K. Stone, "Glycosuria caused by a Probable Tumor in the Fourth Ventricle." Dr. P. C. Knapp, "The Provision for Patients with Chronic Diseases in the City of Boston."

Pathological Specimens.

Albert N. Blodgett, M.D., *Sec'y*, 390 Boylston St.
E. G. Cutler, M.D., *Chairman.*

RECENT DEATHS.

Robert Willard, M.D., M.M.S.S., died in Boston, February 6th, aged fifty-three. Dr. Willard was born in Boston, and graduated from Harvard College in the class of 1860. At the outbreak of the war he was a medical student. He entered the navy as assistant surgeon, and served on the monitor Catskill and the flagship Colorado. He received the degree of M.D. from the Harvard Medical School in 1864. Since 1871 he has been ophthalmic surgeon at the Massachusetts Charitable Eye and Ear Infirmary. He was a member of the American Ophthalmological Society, and of the Boston Society for Medical Improvement.

Henry W. Stillman, M.D., of Woonsocket, R. I., died February 5th, aged sixty-seven. He had practised for eleven years in Lime Rock, twenty-seven years in Cumberland and six years in Woonsocket.

Sir Morell Mackenzie died in London, February 3d, aged fifty-four. Dr. Mackenzie received his medical education at the London Hospital Medical College, and in Paris and Vienna. In 1863 he founded the Hospital for Diseases of the Throat in Golden Square, London. In the same year he received the Jacksonian Prize from the Royal College of Surgeons for his essay on diseases of the larynx. He soon afterward became assistant physician to the London Hospital, becoming, in due course, full physician, and was appointed lecturer on diseases of the throat, an appointment which he held to the time of his death. He was a corresponding member of the Imperial Royal Society of Physicians of Vienna and of the Medical Society of Prague and an honorary fellow of the American Laryngological Association. In 1887 he was called to attend the crown prince, later the Emperor Frederick, of Germany, who was suffering from disease of the larynx. The controversy which was waged over his diagnosis, treatment and conduct in this case will be remembered. He was knighted by the queen at the request of the emperor. Dr. Mackenzie was a prolific writer and was the author of a large number of publications on laryngological subjects. His chief work was issued in two volumes, under the title of "Diseases of the Throat and Nose."

BOOKS AND PAMPHLETS RECEIVED.

Annual Report of the Postmaster-General of the United States for the Fiscal Year ending June 30, 1891.

Tubal and Peritoneal Tuberculosis, with Special Reference to Diagnosis. By George M. Edebohls, A.M., M.D., New York. Reprint. 1891.

Inequality of the Pupils in Epileptics, with a Note on Latent Anisocoria. By William Browning, M.D., Brooklyn, N. Y. Reprint. 1892.

Delsartean Physical Culture with the Principles of the Universal Formula. By Carrica le Favre. New York: Fowler & Wells Co. 1891.

Essentials of Medical Physics. Saunder Question Compends, No. 22. By Fred J. Brockway, M.D. Philadelphia: W. B. Saunders. 1892.

I. Femoral and Ventral Hernia in Woman. II. The Kangaroo Suture. By Henry O. Marcy, A.M , M.D., LL.D., of Boston. Reprint. 1891.

The Practical Adjustment of Spectacles. By George M. Gould, M.D., Ophthalmologist to the Philadelphia Hospital, Philadelphia. Reprint. 1892.

The Fire Protector of Hospitals for the Insane. By L. H. Prince, M.D., Resident Physician "Bellevue Place," Batavia, Ill. Chicago: C. H. Blakely & Co. 1891.

The After-Treatment of Cataract Operations in Light Rooms (and by an adhesive strip on one eye only, the eye not operated upon being left open). By Mr. Chisolm, Baltimore. Reprint. 1891.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., First Assistant Laboratory of Hygiene, University of Pennsylvania. Philadelphia: Lea Brothers & Co. 1892.

The Treatment of Typhoid Fever and Reports of Fifty-five Cases, with only one Death. By James Barr, M.D., of Liverpool, with an Introduction by W. T. Gairdner, M.D., LL.D., of Glasgow. London: H. K. Lewis. 1892.

The Chinese: Their Present and Future; Medical, Political and Social. By Robert Coltman, Jr., M.D., Surgeon in Charge of the Presbyterian Hospital and Dispensary at Teng Chow Fu, etc. Philadelphia: F. A. Davis Co. 1891.

Original Articles.

INTESTINAL ANTISEPSIS.[1]

BY HAROLD C. ERNST, M.D.,
Assistant Professor of Bacteriology, Harvard University.

This subject is one of the greatest importance to practical medicine. It is true, and it has sometimes been made a subject of reproach to physicians, that the surgical branch of the profession has apparently appreciated more and taken greater advantage of the advances in experimental work of the last few years. The reasons for this are easily to be seen upon even a slight consideration of the subject, and are perhaps not quite so flattering to surgery as has been too easily conceded. Surgical problems of aseptic and antiseptic treatment are, to a very large extent, mechanical in their nature. It is settled that the complications arising in surgical practice in the way of infection and suppuration are due to the activity of the bacteria and their products, and it necessarily follows that the prevention of the appearance of these consequences is a matter of exclusion of the causative agency, — provided the processes themselves do not exist at the time of surgical interference.

So too, with these same processes after they have been once established, — a free exit to the hurtful agencies, — free drainage, in other words, is what is necessary for their cure, and beyond this, even the surgeons have not travelled far in the line of direct cure for such processes.

The matter becomes a very different one as soon as one approaches a medical problem, typhoid fever for instance. In such a case, there is no possibility of adopting the procedure of free drainage or anything else that will secure a sure and speedy exit to the toxic agencies. Prevention, in the case of infectious diseases, stands to-day upon very much the same level as prevention in the case of infectious wound-diseases, except that in the latter, one's attention is confined to the individual case and single patient that is usually under full control, while in the former, the necessary precautions must often be taken before the patient has even come under observation, in fact before he has become a patient at all.

So that even from this point of view the medical problems are more complex than the surgical. This being so, what shall be said of the infinite complexity of those questions of cure, the possibility of which has but just begun to be forced upon our attention by our increasing knowledge of the activity of the micro-organisms in the production of the many forms of disease in which they are now known to be concerned?

In such cases it is not a question of a free exit to agents destructive to vital activity, this to be done once and for good, but of something entirely beyond this, some procedure much more prolonged and much less destructive in itself than an incision of greater or less extent. Before such problems as these can be solved, all the knowledge that has as yet been gained and an enormously greater amount than this, yet to be secured, must be thoroughly appreciated and turned to its proper uses.

In the general study of the action of the micro-organisms in the living body, there are certain facts that have been disclosed that are of general utility in the consideration of an infectious process, these relating especially to the method of production of their harmful effects. We know that these effects are the result of (1) mechanical obstruction, due to the presence of masses of the organism in the part, and the mechanical destruction of the vital processes in that part; (2) to the appropriation by the invading cells, of the nutritious material necessary for the vitality of the tissue-cells, and the resulting death and necrosis of these latter; (3) to the formation, after various processes of retrograde metamorphosis, of many new chemical compounds in the body, with greater or less toxic effects upon the surrounding vital tissues.

Of these various methods of producing ill-effects, the first is the least common, and the last the most so, and the problem before us is to so study each and every disease that we may know how it is produced, and what are the best means to neutralize or destroy this method of production. This seems like a simple statement, but as the investigations have advanced, the simplicity appears as merely one of words and not of fact. Before a single one of the infectious diseases can be understood from the modern point of view, we must have further knowledge upon phagocytosis, chemio-taxis, positive and negative, the effect of the various tissues of the body, as blood-serum, upon the micro-organisms in health, and the chemistry of the ptomaines, leucomaines, and tox-albumins must be an actuality. As advances in any of these directions occur, it is possible to hope for at least a partial solution of some of the problems of how to treat disease specifically; but any such solution must be based upon more knowledge than we have now.

Hueppe[2] states some of these problems in an article upon the investigation of disease, and the points derived therefrom, of value in treating and healing infectious disease. He lays especial stress upon the fact that it is not only the bacteria that produce infectious disease, but also those qualities that are empirically called "predisposition" and "immunity," as well as social and hygienic surroundings. Speaking of the requirements in a medicament to be used in an infectious disease, he sets them down as (1) that it must have a chemical action upon cell protoplasm; (2) that it must have a specific affinity for the tissues against which it is directed, and (3) that this affinity must of course be the same as that manifested by the infectious principle and it's products. The greater portion of his article lays especial stress upon tuberculosis, and from the work done in this direction as well as others, he draws the conclusion that after all, the best method of treatment we yet have, is to build up the body and improve the hygienic conditions. He looks forward to the possibility of obtaining some special agent to use in particular cases, but holds out the old warning that we must not expect to diminish the sum total of mortality, although we may be able to affect one disease, as has already been the case with small-pox, since the introduction of vaccination. An extremely important point that he makes is, that it should not be expected that we can ever secure a material to act *quickly* against all diseases, for the reasons that will easily occur to any one. If anything is secured in certain of them, it will be something that will act so slowly as to make the effect of any one dose practically imperceptible, and whose manner of cure will be almost a reversal of the process by which the disease made itself manifest. So much for the general considerations.

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[1] Read before the Boston Society for Medical Observation, December 7, 1891.

[2] Berl. Klin. Woch., No. 11, 1891.

This is not the place to speak of the mass of work that has already been done toward solving the problems spoken of, as being before us, but one or two exceptions may be made, notably in the case of Mya and Sanarelli,[3] who, in a very recently published article, give the results of a large amount of work upon the influence of a high degree of "hæmatolysis" as a favoring cause of the infectious diseases. Using a blood-destroying agent, acetylphenyl hydrate, and various injections into rats, guinea-pigs, pigeons and dogs, and employing anthrax bacilli and pneumococci as their test-agents, they come to the conclusions that (1) destruction of the blood-corpuscles as well as other well-known causes (bleeding, weakness, fasting, etc.,) favors the beginning and course of an infectious disease in animals that are possessed of only a relative immunity against this disease under natural conditions. (2) That the same destruction of the blood-corpuscles does not, however, favor infection in animals that have a high degree of immunity.

In the line of the same general subject, but in a different direction are the researches of Ferranini,[4] in which he attempts to determine the *antipeptic* dose of substances that are often used for their antiseptic action. This antipeptic dose, he calls that amount of the material under investigation that, in one litre of fluid, will prevent the transformation of blood-fibrin into peptone under the action of chlorhydrate of pepsin. It is interesting to know that he found non-antipeptic, even in a proportion as high as five parts in one hundred, such substances as iodoform, boric acid, sulphate of quinine, turpentine, iodol and naphthol-B. He lays especial stress upon the advisibility of those attempting to secure stomachic and intestinal antisepsis being also familiar with the antipeptic action of the substances used.

Omeltschenko[5] gives the results of many experiments as to the effects of certain of the ethereal oils upon the bacteria of typhoid, tuberculosis and anthrax. His conclusions are of importance as being steps in a direction giving much promise for further investigation, both experimentally and clinically, Some of them are: (1) The vapor of the ethereal oils has a definite disinfective action. Curiously enough he puts oil of cinnamon, oil of fennel, and oil of lavender at the head of the list; (4) The protoplasm of the bacteria undergoes a specific change, as is seen by their behavior towards aniline colors and the granulation of the protoplasm; (8) emulsions of ethereal oils diminish their volatility; (9) air only takes up a certain quantity of the vapor, and violent forcing does not increase this quantity. The air must be renewed as often as a knowledge of the amount it takes up and its effect upon the specific micro-organism makes necessary.

Such experiments as these are of the greatest importance, in the special subject under consideration this evening, even in view of the work of Korkunoff[6] negativing the supposition that infection can take place through the normal intestinal wall.

The general influence of surroundings upon the attacks of infectious disease is well illustrated by Canalis and Morpurgo[7] in their work showing the effect of such influences, notably in one instance. Experimenting with pigeons, that are immune to anthrax under normal conditions, inoculations of the bacilli were made and at the end of eight days fasting was enforced. As soon as this was done, the birds died of anthrax, showing not only that the bacilli lived in their bodies during that time, but that the influence of hunger had a very remarkable effect in diminishing the immunity of these birds against the attack of the micro-organisms.

Coming now to work bearing more directly upon the subject, some of the most important that has been published may be very briefly summarized.

Cantani[8] in an interesting article upon intestinal antisepsis, makes the fundamental statement that the various bacteria in the intestinal tract of the living body cannot be killed by any chemical agent with which we are yet familiar except in the rarest cases, and that for the present, attention must be directed towards retarding the development or decreasing the numbers of those present. The two roads by which materials with these objects in view can be introduced are the mouth and the rectum. If the first be chosen, the results are extremely uncertain, for the reason that the material employed must either be unaffected by the gastric juice, or else it must be soluble, and therefore lose a large part of its local effect by reason of absorption. Administration by the rectum, is therefore the shortest and most certain method, for a certain distance. By this means we have control of the bowel as far as the fluid or other material can be passed, and may govern the condition of things as we choose, at least, for limited periods of time. For this purpose, the author recommends tannin and carbolic acid especially. The development of cholera spirilla was retarded by the use of a tannin solution of .5 per cent. strength, and they were mostly killed after six hours; they were completely destroyed after one and one-half hours contact with a 1.5 per cent. solution.

Baginsky[9] points out that the fermentative changes in the intestine represent more than the mere presence of bacteria and means to get rid of them. He showed by experiment that the bacterium aceticum, normally present in the intestine, destroys certain of the bacteria of green diarrhœa. Therefore it is quite possible in certain cases, that a powerful anti-bacterial treatment, even if successful in destroying germs, may be undesirable, in that it interferes with the conflict between different forms of micro-organisms. Woodbridge[10] reviews the work upon intestinal antisepsis, and speaks of that tending to show the value of creolin and naphthol-B.

We are familiar with the mass of assertion in regard to the experimental and clinical value of various of the coal-tar colors, and if certain of the observations reported are true, it will hardly be possible to agree with the editorial remark of the *Boston Medical and Surgical Journal* (vol. cxxii, p. 18), that "attempts to control the course of typhoid fever by antisepsis of the bowel will be ultimately abandoned as irrational and unavailing." If the day should dawn upon which we could feel that there had been secured the material effective in the arrest or destruction of the typhoid bacillus in the body without injury to the patient, then these methods may be considered out of date, but until then something of the sort spoken of seems to be the only directly effective means at our command.

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[3] Fort. d. Med., bd. ix, 1891, s. 907.

[4] Comptes Rendus, cx, p. 1284.

[5] Cent. f. Bact., bd. ix, 1891, s. 813.

[6] Wratsch, Nos. 48, 50 and 52, 1890, with a long review in Cent. f. Bact., bd. vi, s. 445.

[7] Fort. d. Med., bd. viii, 1890, Nos. 18 and 19.

[8] Giorn. Intern. delle scienze med., 1890, Fasc. 19, p. 741.

[9] Deut. Med. Woch., May 17, 1891.

[10] Practitioner, vol. 44, p. 426.

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FAT EMBOLISM.[1]

BY W. F. WHITNEY, M.D.

The following case of comminuted fracture of the femur, with death on the fourth day, for which no evident cause was found, aside from a fat embolism of the lungs, leads to a consideration of how far we are justified in regarding this as an adequate cause of a fatal termination.

A male, sixty-two years old, entered the Massachusetts General Hospital in the service of Dr. Maurice H. Richardson, with a fracture of the right femur, from an elevator falling upon him two hours before.

During the first two days he was reported as comfortable, but having had no movement of the bowels was given a saline cathartic on the second day, without any effect.

Up to noon of the third day he had no dejection, and at that time his bowels began to swell, and increased till four P. M., with diminution of the area of liver dulness. An enema caused a dejection of the contents of the rectum. At one P. M., vomiting commenced and continued interruptedly till eight P. M. Vomitus was very dark brown, but without fæcal odor. No gas passed either way. Urine normal and passed without difficulty. On the fourth day there were the same general symptoms. Vomitus of a black color. Abdomen aspirated and a clear straw-colored serum obtained.

Conscious, but restless. Suffered no pain, his only complaint was of difficulty in breathing. Pulse went up during the day while the temperature fell. Died suddenly at quarter-past five P. M.

	Aug. 31.	Sept. 1.	Sept. 2.	Sept. 3.	Sept. 4.
Temperature . . .	99°	101.5°	100°	101°	98°
Pulse	60	70	70	90	130

Autopsy by Dr. W. F. Whitney, eighteen hours after death. Body of a large man. Rigor mortis present, and some lividity of the dependent portions of the body. The right foot was everted, the leg shortened, and there were numerous ecchymoses over the ankle and middle of the thigh. Upon opening the latter a comminuted fracture of the femur in its middle third with considerable laceration of the muscles was found.

Head not opened.

Thorax, pericardium and heart were normal.

Both pleural cavities contained a little clear fluid with some old adhesions of the surface of the right lung.

The lungs were partly retracted, the upper lobes dry, the lower lobes of a dark bluish color, and considerable dark thin fluid escaped from the cut surface. There was no evidence of consolidation anywhere. Microscopic examinations showed the small vessels extensively plugged with a highly refracting fluid substance (fat).

Abdomen. The peritoneal cavity contained a small amount of fluid. The peritoneum was injected, but had everywhere its normal lustre, nor was there anywhere evidence of a deposit or exudation of any sort upon the surface. The stomach was filled with a dark, foully-smelling fluid, and this could be traced to the end of the jejunum. Beyond this point the intestines contained a little yellowish fæces. The inner surface of the stomach was marked here and there by a network of injected capillaries and a few superficial losses of substance with a hæmorrhagic infiltrated edge.

The intestines from the stomach to the rectum were extremely distended with gas.

The spleen was of normal size and pale. The kidneys and liver were pale, slightly opaque, and upon microscopic examination the cells were found to be markedly granular.

Before considering this case further it will be well to recall, briefly, what has been brought out from the study of the subject.

Magendie, in 1827, was the first to prove experimentally that oil injected into the veins of an animal would produce death. But it was not till 1862 that Zenker called attention to the presence of fat in the vessels of the lungs in some cases of death after fracture of the leg; and it then came to be regarded as a sufficient cause. But gradually, as the infectious process with which it was often associated were better understood, the conviction grew that fat embolism of the lungs alone was not sufficient to produce death, and that its action on centres more remote must be considered. By far the most thorough and exhaustive study was made by Scriba,[2] and published in 1879. And since then but little has been added to our knowledge. His work consisted in experiments on animals and the analysis of cases by the light of the results thus obtained.

The problems which he proposed were:

(1) How much fat is required to kill? (2) In what way does it act? (3) How is it eliminated?

In answer to the first he found that in order to kill an animal by fat embolism a quantity is necessary varying with the force with which it is injected, and with the distance of the point of injection from the heart. But in no case was it less than three times the amount of fat contained in the entire femur of the animal.

His conclusion as to the mode of action is: that death after aseptic fat emboli occurs only from large numbers in the brain and spinal cord, and in consequence of the arterial anæmia and the resulting disturbance of nutrition.

Of course, any deleterious action on the heart and lungs had first to be eliminated. In regard to the former it was done by direct observation on the living animal, and a comparison of the length of time that the heart of an animal killed by fat injection reacted to stimulus when compared with the normal. From these experiments he found that the disturbances which are caused by the entrance of oil into the heart are only to be found in the increase of the quantity of fluid of which the heart has to take care. And the speedy death is caused neither wholly nor in part by paralysis of the heart, and that aseptic fat has no permanent influence on its action.

As for the lungs, experiments have shown that five-sixths of the arteries must be tied before an animal is killed, and that at least three-quarters of the entire pulmonary system shut out before the arterial tension in the body is the least altered. Therefore he reasons that in man there is never such a degree of embolism of the lung capillaries that death must result; and he was never able to produce this in animals even by direct intravenous injection.

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[1] Read before the Boston Society for Medical Observation, December 7, 1891.

[2] Deutsch Zeitsft. f. Chirurgie, Bd. 12, s. 118.

On the other hand, it is the fat which has passed the lungs and reached the central nervous system that is the cause of death.

In answer to the third question, his experiments and clinical evidence (to be mentioned later) point to the kidneys as the organs by which the greater part is eliminated. A smaller part is undoubtedly burned up in the system.

Of the symptoms noted, one of the most striking was the constant fall in temperature. When large quantities of oil were used this fell 9.5°C. in nine hours in one case, and in another 7° C. in one and a half hours. In those cases in which death did not result, the return to normal was accomplished in about the same time as the fall.

Another symptom was dyspnœa, due to the loss of oxydation of the blood. This often was only transitory; but may be persistent and very urgent.

Slight hæmoptysis, due to infarction, has also been noticed. Œdema of the lungs was never seen in any of his experiments although its occasional occurrence may not be denied.

The most important clinical symptom of fat embolism is the presence of oil in the urine. He examined this from a number of fracture patients, and was able in nearly all cases to demonstrate it to a greater or less degree. The oil did not appear in but a few cases as a continuous sheet on the surface, but as a whitish, slimy cloud in the upper part, at times three centimetres thick. It would not be recognized as fat by the eye alone; but with the microscope there were seen numerous very small, round drops, which were highly refracting, and had a fine dark border. At first, they might be regarded as bacteria, but the reaction with osmic acid and recrystallization after extracting with ether proved their true nature. A curious fact was ascertained, namely, that the elimination is not continuous, but interrupted. Fat was first noticed on the second, third and fourth days after the accident, then again from the tenth to the fourteenth day, and rarely once or twice again with intervals of from six to ten days between.

A marked pallor of the skin and mucous membranes was noticed in all the animals experimented upon.

In the fatal cases there was great irregularity of respiration, marked at the end by superficial respiration alternating with deep and spasmodic inspiratory movements.

These again point to anæmia of the brain, and death followed from paralysis of the respiratory centres, while the heart still continued to beat.

He last of all analyzed one hundred and seventy-seven reported cases, and found only fourteen in which death could be attributed to this cause alone, according to his standard.

The clinical picture which he draws, is as follows:

(1) Certain proof of periodic occurrence of fat in the urine.

(2) Transitory attacks of dyspnœa.

(3) At times occurrence of slight hæmoptysis without fever and usually without dulness or râles.

(4) Diminution of temperature.

(5) Irregular action of the heart.

(6) Collapse, with extreme pallor of the skin and mucous; at first, shallow respiration, at times broken by a deep sighing inspiration, later, Cheyne-Stokes' phenomena.

(7) Spasms of different kinds or paralyses, which in the experiments were usually bilateral.

(8) Diminution of reflex irritability.

If the history of the case given at the beginning is now reviewed, it is hardly just with data given to ascribe the death to fat embolism alone.

The death within the first week, the dyspnœa, and the rapid fall in temperature in the last few hours are the clinical features which can be best brought in accordance with picture as drawn above. On the other hand, the fever during the first three days, the paralysis of the intestines with extreme gastric disturbance (although these two latter might be of central nervous origin) would rather point to a septic infection. This, however, had failed to localize itself either in the spleen or serous surfaces. The only positive evidence were the fat emboli in the lungs. It is now seen that the failure to examine the brain was a grave omission.

With the data at hand, the case is best regarded as one of septicæmia with fat embolism, in which the fatal result cannot be attributed to either alone but to both as factors.

The two important points brought out by the above consideration, are:

(1) On the clinical side, that the urine of patients with fracture should be carefully watched from the second to the fourth day for the presence of free or emulsified fat.

(2) On the pathological side, that unless found in the brain the cause of death cannot surely be ascribed to fat embolism.

OBSERVATIONS ON ALBUMINURIA IN SCARLATINA.

BY JAMES W. DUDLEY, M.D.,
Medical House-Officer, Boston City Hospital.

(Concluded from No. 6, page 140.)

TAKING the above standard as to the presence of nephritis there were found 18 cases out of the whole 100 which developed nephritis; that is, in 18% of the urines were albumen and casts found. Of these, eight were of the more severe type, and 10 the variety spoken of as catarrh.[2] One case only began as a catarrh and later developed into a severe nephritis. The catarrh was first noticed the third day of the disease, and on the eighth day, as desquamation was getting well-established, the albumen increased in amount, and epithelial and blood casts and free blood appeared. In this case the high temperature of the eruptive stage was prolonged evidently by the nephritis. This case is interesting as showing how the catarrh may terminate, a method of termination, however, which seems to be rare. The case is classified in the following statistics as one of severe nephritis.

Scarlatinal nephritis is said to occur most frequently between the ages of five and nine.[3] The age of the patients having nephritis in this series of cases is shown below, together with the number of cases occurring at the several ages.

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[2] As has been said it seems impossible to draw a *definite* line between mild and severe nephritis from the urinary examination, but for practical purposes it has seemed best to speak of such cases as presented a normal or high-colored urine with a trace of albumen and a few hyaline and granular casts only, as renal catarrh, and those which in any way gave evidence of more serious renal changes, such as blood or fatty elements, as the more severe form of nephritis. Only in one or two cases was there difficulty in deciding which variety the case should be called.

[3] See Guy's Hospital Reports, vol. xxxi, 1889.

SEVERE NEPHRITIS.

Age	4 or less	4–8	8–18	Over 18	
No. of cases . .	4	2	0	2	

RENAL CATARRH.

Age	4 or less	4–8	8–16	16–20	Over 20
No. of cases . .	3	2	0	1	4

Total cases, 18.

It will be seen that the largest number of cases of severe nephritis occurred in patients four years of age or under, and six of the eight were persons not over seven years of age. The other two cases were in adults (age nineteen and thirty-four). The period from eight to eighteen inclusive, was free entirely from severe nephritis. The mild variety was found in adults and children with equal frequency, five being under seven years old and five over sixteen. Young children, four or under, presented this complication less frequently than did adults over twenty. This is in marked contrast with the more severe variety to which children appear to be much more liable. The absence of any form of nephritis between the ages of eight and sixteen inclusive, is noteworthy. The complete absence of nephritis during this, the most vigorous period of childhood, is doubtless a mere chance in this set of cases, but that there is a diminished liability for children during this period of life to develope nephritis is at least strongly suggested.

It would seem improbable that sex could have any influence, predisposing or other, in the development of nephritis. It is, however, worthy of observation that the majority of cases of severe nephritis occurred in the male sex, 62.5% of the severe cases being in males. Of the cases of simple catarrh the majority occurred in females, 30% only being in males. The only suggestion which this observation seems to offer is that scarlet fever is possibly more apt to be a severe disease in females.

Time of year does not seem to have very much influence in the causation of nephritis. It was slightly more common during December, January and February than at any other time. Renal catarrh seems not to have been at all influenced by season. The total number of cases in the hospital at any one time made no change in the proportion of cases developing nephritis. Unfortunately, however, the time covered by this series of cases did not include any periods when scarlatina was *especially* frequent in the community, and therefore the influence of epidemics in the frequency or severity of nephritis cannot be stated.

The fact, so frequently observed in regard to scarlatinal nephritis, that no dependence can be placed on the severity of the fever as to the probable development of nephritis is amply borne out by these cases. In fact, so far as they show, severe nephritis is more apt to follow a mild case of scarlet fever than a severe one. In but two of the eight cases of severe nephritis was the temperature above 101.2° at entrance (time of entrance being on the average the second or third day of the rash), and the average temperature for all the cases of nephritis was 101.53°. This is in marked contrast with the cases of renal catarrh, in which the temperature for the whole number averaged 102.6°. In but one case was it less than 101.4° at entrance. Thus mild nephritis or renal catarrh does seem to be influenced markedly by the severity of the fever, being probably a part of the disease itself. The contrast in the severity of the disease in which the two forms of nephritis developed is shown as follows:

Severe nephritis, 75% in cases with a temperature of 101.2° *or less*.

Renal catarrh, 90% in cases with a temperature of 101.4° *or more*.

In estimating the day at which the nephritis began, the beginning of the eruption has been taken as the first day, on account of the impossibility in many cases of ascertaining definitely any symptoms occurring earlier. The time at which the nephritis first made its appearance is shown below:

NEPHRITIS.

Time of nephritis . {	1st week.	About end of 3d week.	Beginning of 4th week.	
Number of cases .	3	4	1	
Desquamation . .	Not begun.	In progress.		

CATARRH.

Time of catarrh . {	1st week.	Late in 2d week.	Very late (5th week).	Unknown.
Number of cases .	5	2	1	2
Desquamation . . {	Not begun.	During early part.	Finished.	

Nephritis, therefore, occurred most frequently about the end of the third, or beginning of the fourth week, during the period of desquamation, and in no case beginning with the beginning of desquamation, not rarely, however, it starts during the first week, before desquamation has set in. The most common time for catarrh is during the first week, when the temperature is high and the disease active.

The duration of the nephritis in those cases where the actual time was observed, presented some degree of regularity. In half the cases it lasted thirty to forty days. One well-marked case only seven days, one about twenty. The duration of the others was not observed. Five weeks, therefore, seems to be about the average length of time covered by many cases. No regularity at all is shown by the cases of catarrh. They lasted from four to forty days.

The relation of albuminuria and nephritis to some of the other common complications of scarlet fever is worthy of note. The most common of all the other complications is *otitis media*. This occurred in 10% of the cases. In five the left ear being the one affected, and in four the right, and in one both ears. The duration of the otitis was extremely variable, as also was the time of its beginning. In half the cases the ear trouble was first noticed twenty-five days or later after the beginning of the fever. The average duration was twenty-seven days. The actual length of time varied from twelve to fifty-three days. Out of all the cases of otitis 60% presented albuminuria, and 20% only had nephritis. In but one case was renal catarrh present. It has been said that in cases having both nephritis and purulent disease of the middle ear the urine clears up as the otitis subsides, but in the limited number of cases with both observed in this series this coincidence, if such there be, was not found. It is interesting to note in passing that the majority of the cases of otitis (70%) developed in cases with comparatively mild fever, that is, in those with a temperature not over 102°. Otitis seems, therefore, like nephritis, a complication quite as apt to occur in mild as in severe cases of scarlatina.

Diphtheria was said to be a complication in six cases. Whether these were all cases of true diphtheria developing upon scarlet fever, the writer cannot say. At any rate, they were characterized by very severe angina and well-marked false membrane. In five of these, or 83%, there was albumen in the urine; in but one case was nephritis present.

Pneumonia occurred in three cases, two of which ended fatally. All presented albuminuria. Nephritis was not observed in any of them.

Severe abscesses of the neck were present as a complication in three cases. In one nephritis occurred; in one simple albuminuria, and in one the urine was normal throughout.

Out of three cases of *inflammation* of one or more *joints*, one had nephritis, one catarrh, and one no albumen.

Measles complicated two cases, beginning the twenty-third and twenty-fourth days of the original disease. Albuminuria was present in one, nephritis in neither.

Summing up, in brief, the results regarding complications, it is found that 25 out of the 100 cases presented some of the above complications, not including nephritis. Out of these 72% had albumen at some time, 20% had nephritis, 12% had catarrh, 40% had simple albuminuria, 28% had no albumen at any time. Complicated cases, therefore, present a much larger proportion of albuminuria and severe nephritis than do simple cases, while the proportion of cases with catarrh is not materially changed. It is noteworthy, also, that 63% of the cases of severe nephritis were in patients also having some of the above complications.

Scarlatinal nephritis seems to differ in one very important respect from acute nephritis of other origin.

So far as the writer has observed it is quite apt to develop quickly without giving any signs of its presence in the appearance of the patient. Œdema is apparently not a common accompaniment in the earlier part of the case. Nearly all the cases in this series were found by the urinary examination before any other evidence of their presence had been observed.[4] Occasionally, a slight rise in temperature accompanies the onset of the nephritis. Close and constant attention to the urine is therefore the only way to make sure that nephritis is not developing.

The writer regrets that he is unable to say anything about the *prognosis* of the nephritis. In all but four of the cases of scarlet fever here recorded, recovery took place. In none of these four fatal cases was nephritis detected. Death in two was due to pneumonia, in one to diphtheria. In none of the cases did nephritis become chronic. The total number of cases of nephritis is, however, too small to be of any positive value as regards prognosis.

The results obtained from the comparison of these 100 cases of scarlet fever may be summed up as follows:

ALBUMINURIA.

Albuminuria was present at some time during the disease in 49% of all the cases; it was slightly more common in males than in females. Early albuminuria maintains a pretty constant relation to temperature, being of much more frequent occurrence in cases with high temperature. It was present much more frequently in adults than in children when the temperature was the same, and of almost universal occurrence in adults with high temperature; it does occasionally occur in cases with a low temperature; over-crowding and poor ventilation were not factors in its production. Early albuminuria occasionally is caused by or leads to renal catarrh, very rarely to severe nephritis; catarrh is not apt to be developed into severe nephritis.

NEPHRITIS.

Severe Nephritis.	Renal Catarrh.
In 8% of all cases of scarlet fever.	In 10% of all cases of scarlet fever.
Is most common in children under 9 years of age.	Occurs with equal frequency in children and adults.
Least common time, 8 to 18 years of age.	Least common time, 8 to 16 years of age.
62⅓% in males.	70% in females.
Rather more common in winter than in summer.	Season has no influence.
Is not influenced by the number of cases in the hospital (over-crowding and poor ventilation).	Idem.
Is as common after mild as after severe cases of scarlet fever.	90% in severe cases.
Generally begins between third and fourth week of the disease.	Most common in first week.
Generally during desquamation.	Most common time before desquamation.
Common duration, 5 weeks.	No regularity of duration.

COMPLICATIONS.

Excepting renal catarrh, *otitis* is the most frequent complication of scarlet fever; occurring in 10% of all the cases. It is as common in mild as in severe cases of scarlatina. It sometimes begins early, but usually not till the period of desquamation and sometimes very late. Sixty per cent. of cases with otitis have albuminuria, 20% nephritis.

Most of the cases complicated by *diphtheria* present albuminuria. Nephritis is not especially common. Of the other individual complications no summary is needed.

It should be said that the proportion of cases in this series presenting albuminuria is larger than is generally supposed to occur, but the percentage of cases with nephritis agrees very closely with that observed elsewhere.

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CUTANEOUS ERUPTIONS IN INFLUENZA.[1]

BY CHARLES F. MASON,
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The following cases are cited as a contribution to the literature of that many-sided disease, influenza, particularly as very little has been written about this phase of the disorder:

Cases I and II. A. B., aged six months; first seen January 1, 1892. Mother says child has been sick for several days with fever, cough, vomiting and constipation, and to-day a rash has appeared which she thinks is measles. Upon examination I found tongue thickly coated, chest, abdomen and back covered with a discrete eruption, pale, but exactly like that of a mild case of measles, and well-marked broncho-pneumonia; there was high fever, but not having a thermometer temperature was not taken; no catarrhal symptoms; no redness of tongue or pharynx. Influenza was then prevalent; the eruption was the only point of resemblance to measles; there had been no measles within 150 miles of us for many months, and I diagnosed influenza, but nevertheless isolated the patient and took the same precaution as if the disease had been a contagious one. The next day the eruption had spread over the entire body, was confluent and much more vivid except upon the face; other symptoms as before. Though still in doubt, I thought best to treat the case as one of measles, and reported it as such to the Surgeon-General of the United States Army.

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[4] See British Medical Journal, 1889, ii, p. 657.

[1] Published by authority of the Surgeon-General.

The same day, January 2, 1892, a half-breed infant of about nine months was brought to me by its mother, a Shoshone Indian squaw, with exactly the same symptoms except the pneumonia, the eruption being most typical and everywhere confluent. This second case had been brought in that day from a "tepee" on Upper Big Wind River, about twenty-five miles distant, and I was informed by the mother that there were one or two other cases of the same nature in that region.

January 3d, the eruption in both children had almost entirely faded, and on the 4th was gone, without the slightest desquamation.

The second case I did not see after this date, but heard that the child made a good recovery. The first has been constantly under my observation, its recovery from the pneumonia being slow and difficult. In the family of the latter there were two other children, one of whom, with the father and mother, was subsequently affected with the characteristic symptoms of the grip, but without any eruption.

Case III. Nez-Percé, Shoshone Indian soldier, aged twenty-one and one-half years; admitted to hospital, January 9, 1892. Complains of headache, cough, pains in the chest and debility. Upon examination I found acute laryngo-bronchitis, a coated tongue and a few small papules like those of acne upon face and chest; temperature 100°. The next morning, on visiting the ward, I was astonished to find his face, chest and back covered with discrete superficial vesicles, many of them markedly umbilicated but without inflammatory bases. Temperature: A. M. 99.6°, P. M. 102.8°; eyes slightly injected; complains only of severe frontal headache.

January 11th. Vesicles have become pustular; no new ones; feels much better. Temperature: A. M. 100.8°, P. M. 101.4°.

January 12th. Feels well; pustules rapidly drying up.

January 16th. Spots dried up rapidly, forming thin crusts, which dropped off leaving no scar.

This case so closely resembled varicella that the patient was isolated for several days. However, the soldier had not been absent from the post; varicella had not been heard of in the country for many years, and I considered that disease excluded. The other symptoms were those of the grip, and my experience with the two cases referred to above led me to make that diagnosis here also.

Up to this date, January 25, 1892, I have not seen or heard of any more cases of eruptive disease in this neighborhood; and the Agency physician, who treats a large number of Indians, says he has not met with any except one case of influenza with a vesicular eruption like the one referred to.

My cases were very puzzling to me at first; but their history, subsequent course, absence of any of the symptoms of the exanthemata except the eruption and fever, and the presence of the characteristic symptoms of grip, the absence of any probable source of contagion, and the fact that no new cases developed, all led me to the inevitable conclusion that the history of influenza has not yet been fully told.

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Clinical Department.

THREE CASES OF PUS IN THE FEMALE PELVIS; ABDOMINAL SECTION.[1]

BY WALTER L. BURRAGE, A.M., M.D., OF BOSTON.

Case I. Pyosalpinx. Large tube of pus. S. J., single, a domestic, thirty-two years of age and a native of Nova Scotia, entered St. Elizabeth's Hospital, June 3, 1890. The diagnosis made in the Out-patient Department was retroversion. She was a thin woman, rather pale, and gave a history of chronic dyspepsia. It was questionable whether she had had gastric ulcer a year before. Her general health was poor. The chief complaint at the time of entrance was of frequency of micturition and general weakness. Her catamenia were regular, scanty (only one napkin), and attended by no pain. Local examination showed what appeared to be a large uterus in the third degree of retroversion. The sound was not passed because there was some suspicion of pregnancy. She was treated with packing, and kept under observation until June 23d, when she was anæsthetized.

Dr. F. W. Johnson saw her with me then in consultation. We found the mass behind, previously thought to be the fundus of the uterus, to be a cyst the size of a large Florida orange, firmly adherent and resistant, though much less resistant than when the patient was not under the influence of an anæsthetic. It had a doughy feel. The uterus was pushed forward and to the right, the sound entered its cavity two and three-quarters inches. There was a nodule on the right side the size of a small duck's egg.

From the situation of the cyst, in Douglas's pouch; from its doughy feel; from the fact that the patient had had no chills, no elevation of temperature since she had been under observation, and from the absence of history of previous inflammatory attacks, it was considered that we had to do with a case of dermoid cyst of the ovary in all probability. It was thought best to keep her under observation, and, if possible, build up her general strength, meanwhile watching the tumor.

After six weeks the tumor had increased in size a little; she had had two slight attacks of pain referred to the lower abdomen, and an elevation of temperature of one or two degrees for a day or two, shortly after the ether examination; the rest of the time the temperature had been normal. In spite of a generous diet and tonics, her appetite continued poor, the bowels were obstinately constipated and her strength not improved. Accordingly the proper course seemed to be to remove the tumor. August 11th, with the assistance of Drs. W. M. Conant, E. L. Twombly and the House-surgeon, I opened the abdomen. Dr. John G. Blake was present. The usual antiseptic precautions were observed. The fingers inserted through the abdominal wound came at once upon a large cyst on the left side of and behind the uterus, very firmly adherent to the walls of the pelvis, and to the uterus. As many as five strong bands of adhesion were ligated with silk and divided, and numberless smaller adhesions were separated with the fingers. After considerable manipulation the cyst was entirely freed and delivered intact through a four-inch abdominal incision. This cyst proved to be a stomach-shaped dilated tube filled with pus. It measured four inches in length, three inches in diameter at its largest part, and contained about eight ounces of pus.

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[1] Read before the Warren Club, Boston, December 1, 1891.

On the right side was a convoluted tube about three-eighths of an inch in diameter, and the ovary, both firmly adherent to the sides of the pelvis and the uterus, and to each other. It seemed at first to be next to impossible to remove the appendages on this side without badly lacerating the soft parts of the pelvis. An attempt was made to ligate the broad ligament from above downward with interlocking ligatures. After a few were tied it became evident that this method would leave a large and clumsy pedicle, besides running a chance of including the ureter, so I decided to tear off the posterior adhesions, pull up as much of the tube, broad ligament and ovary as possible, ligate and remove. This was done accordingly.

The parts were so matted together it was not possible to say whether any portion of the tube or ovary had been left behind. The tube removed presented all the appearances of chronic suppurative salpingitis.

There was considerable venous oozing. The abdomen was flushed with hot water, the cul-de-sac sponged, and a drainage-tube placed in the lower angle of the wound, which was closed with silk, dusted with iodoform, and dressed with baked gauze, strapping, cotton and a binder. Length of operation two hours.

The patient's condition during the operation was poor. She required stimulation several times, but rallied fairly well, however. The temperature was below 100° for the first forty-eight hours, the pulse was rapid all along, being about 120. The tube was removed at the end of twenty-four hours. On the third day the temperature rose a little and vomiting set in. Gas was not passed per rectum for sixty hours. She was given salts and then calomel on the fourth day, without result. She had the anxious countenance noted in cases of peritonitis, and a decidedly septicæmic odor was noticeable in the room. The pain was slight. Beginning distension of the abdomen and a temperature of 103.8° in the morning, with regurgitation of dark colored fluid preceded the fatal issue, which took place from heart failure on the fifth day.

I made a partial autopsy twenty-four hours after death, and found: Marked post-mortem discoloration of the abdomen, lips of wound not firmly adherent, no pus. Incision enlarged upward to ensiform and downward to symphysis. Abdominal cavity and pelvis contained no fluid. Intestines distended with gas and injected, no effused lymph, no adhesions. They contained a small amount of thin brown liquid similar to that regurgitated during life. Walls of pelvic cavity a dirty green color (from decomposition). Nothing abnormal about the condition of either pedicle: no trace of either ovaries or tubes found. The sigmoid flexure of the colon entered the true pelvis anterior to its normal situation, being at a point half-way between the promontory of the sacrum and the middle of Poupart's ligament. It was glued to the left pedicle and to the edge of the pelvis. The calibre of the gut was not encroached on, and the walls were not injected or thickened. Diagnosis: Atony of intestines from septic absorption.

Case II. Chronic pelvic inflammation, with abscess discharging into the rectum. Intraligamentous cyst. S. A. U., widow, thirty-two years of age, a native of Nova Scotia, entered St. Elizabeth's Hospital, June 29, 1891. She gave the following history: Family history negative. She never knew what it was to be sick, with the exception of a slight attack of inflammation of the bowels fifteen years ago, until she had the grippe in 1889, and since then she has never been well. Has had three children, no miscarriages. The last child was born fourteen years ago. In October, 1890, she was in the Rhode Island Hospital with an attack of "inflammation of the womb." She was confined to the bed for several weeks at that time, and was told that she had an abscess, and operation was advised. Since then the abscess has discharged into the bowel several times (four or five). She would have sharp pain in the abdomen for several days getting relief finally by the passage of an ounce or two of matter. The last discharge was two weeks before entrance, at the time of the catamenia, a nearly constant discharge since with so much pain that she is "all tired out," as she expresses it. Bowels inclined to constipation. Much trouble with accumulation of gas in the intestines, and feels a "lack of power" in the rectum. The catamenia were established at twelve and one-half years; regular every four weeks up to two years ago; since then every three to four weeks; of three to five days' duration, and six to ten napkins at first; lately, of seven to nine days' duration, and fourteen to eighteen napkins are used. General strength good. Patient of large frame, well developed and nourished. Says that life has become a burden to her because of the repeated attacks of pelvic pain and her consequent inability to pursue her daily occupation, that of seamstress, for any length of time.

Physical examination showed a large mass of inflammatory exudate nearly filling the pelvis, and surrounding the rectum so as to encroach on its calibre about three inches up from the anus; the uterus three inches deep, lying on top of the exudate and in front. She was kept quiet, given two large hot douches a day, laxatives for the bowels, and a general diet, and every other day the vault of the vagina was painted with Churchill's tincture of iodine.

At the end of a month, during which time she had had on two occasions a discharge from the rectum of mucus streaked with blood and accompanied by pain, it was decided to give ether and make a thorough examination. The exudate had largely cleared away at this time.

July 29th, Drs. R. A. Kingman and Conant saw her under ether, with me. We mapped out a fluctuating mass the size of a small orange, in the right side of the pelvis, and also an indurated swelling about the size of a lemon around the rectum in the left pelvis. Query whether they were connected or not. The gut barely admitted the tip of the examining finger at the seat of the swelling. An exploratory incision seemed to offer her the best chances; she readily consented, and the operation was done August 10th. I was assisted by Drs. G. H. Washburn and the House-surgeon. Drs. Kingman and H. P. Jefferson, of Lowell, were present. The incision was three and one-half inches long. The abdominal walls were about three-quarters of an inch in thickness. Two fingers inserted in the abdomen revealed the presence of a cyst in the right pelvis firmly bound down, and apparently under the peritoneum: the convoluted right Fallopian tube, normal to the feel, could be made out lying on top, the ovary was not felt. The uterus was in the first degree of retroversion, though pushed forward as a whole, and adherent on the left side to an indurated swelling about the size of a small lemon. The cul-de-sac was obliterated by adhesions.

On the right side I thought I had to do with either an intraligamentous cyst, a simple cyst of the broad ligament, or pus burrowing beneath the peritoneum, and in the folds of the broad ligament. The uterus was partially freed from its adhesions after considerable manipulation, and it became possible to push a finger into the cul-de-sac. With Dr. Kingman's finger inserted in the rectum it was plain to the examining finger in the abdomen that the gut passed through the indurated mass. On Dr. Kingman's withdrawing his finger, pressure in the cul-de-sac caused pus to flow from the anus.

It being impossible to remove the swelling on the left without badly tearing the gut, and as a resection low down in the pelvis is a difficult procedure, even when there are no adhesions, the question arose, what should be done as to the cyst on the right side. If a cyst of the broad ligament, it would cause her little discomfort, and if emptied might not refill. As it was so deeply situated that it would be out of the question to open by the abdomen and stitch to the lips of the wound, and as enucleating would, if successful, leave her with the chief source of her trouble still untouched, and at the same time lessen her chances of recovery, more particularly if the cyst should contain pus, I decided to break up all possible adhesions about the uterus and the inflammatory mass, close the abdomen, and aspirate the cyst per vaginam. Accordingly the toilet of the peritoneum was made, the wound was closed with silkworm gut sutures and dressed with aristol, baked gauze, strapping and a binder. No drainage.

With a finger in the vagina as a guide, an aspirating needle was plunged through the cul-de-sac into the cyst, and about an ounce of clear, odorless, straw-colored fluid that contained one-half per cent. of albumen was obtained. The bladder was catheterized and the patient put to bed in good condition. There was a little venous oozing from the needle puncture in the vagina. Time of operations, one and one-half hours.

The convalescence was uneventful. Gas was passed in fifteen hours, the bowels moved naturally after a Seidlitz powder on the morning of the third day; the temperature was not above 100.6° at any time, and was not above 99° after the first day.

August 28th there were some fulness and sensitiveness in the cul-de-sac. She was put on douches, and the vault of the vagina was painted with iodine. Early in September she had diarrhœa associated with a discharge of pus. Dr. Kingman, under whose care she came after September 1st, treated her with packing.

October 3d, then having left the hospital, she reported to me that on moving about she had occasional pain of a throbbing character in the right groin. Bowels regular and she had a more natural feeling in the rectum. By vaginal and rectal examination no induration to be felt on the left side, and lumen of gut not narrowed. On the right side the cyst had filled again and was the size of a duck's egg. Uterus forward, fairly movable, two and three-quarters inches deep.

November 5th, she said she had had "labor pains" early in October; pains lasted an hour and a half and were eased by a very hot douche. Three or four days subsequently the catamenia came on. More flow than usual. Has gone back to work. Hasn't felt so well for over two years.

November 15th. Treatment with vaginal galvanism begun.

November 29th. Has passed through a menstrual period of four days without any pain; five towels. Mass much smaller, no fluctuation, no sensitiveness. Much pleased at her improved health.[2]

Case III. Acute pelvic inflammation. Abscess of ovary. E. A. F., twenty-four years old, married, a native of Nova Scotia. She entered St. Elizabeth's Hospital July 14, 1891, complaining of severe pain across abdomen accompanied by fever and loss of strength. This was a well-developed, fairly-nourished woman, somewhat anæmic, and of a neurotic temperament.

Examination of the abdomen and vagina revealed abdomen a little distended, walls very tense and the entire pelvis filled with hard, unyielding inflammatory exudate. On the left side there was an indistinct elevation of the mass into the abdominal cavity. Sensitiveness to examination not marked. Temperature 100°. The exudation was of exceptional size and hardness.

The patient gave a history as follows: Married seven years, but never pregnant. Never well since her catamenia were established at fifteen years of age. They had been regular every four weeks, but accompanied by fainting spells and pain in the back. Usually confined to the bed for the first two days of the sickness. A profuse flow, less in quantity of late, about twelve napkins the first three days, then a few for the remainder of a week. For the last two years she has had several slight attacks of pain in the abdomen, the pain never harsh enough to confine her to bed. Has always had a leucorrhœa, and has suffered with constipation. She was seen at the out-patient department of St. Elizabeth's in June, 1889, and a diagnosis was made of retroversion; left ovary low down and sensitive.

June 19, 1891, her menstrual period being then due, she was seized with excruciating pain in the lower abdomen. There was no apparent cause for the attack. The flow began shortly and was very profuse. From this time until she entered the hospital, July 14th, she had suffered with almost constant pain and fever, and had been treated by rest in bed, hot douches, poultices to the abdomen, and morphine suppositories *pro re nata*. At entrance she was put to bed, given two prolonged hot douches a day, and every other day the vaginal vault was painted with Churchill's tincture of iodine. The bowels were kept open with saline laxatives, and antipyrine, with an occasional opium suppository, administered for pain.

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[2] February 13, 1892. Mrs. U. had twelve treatments with galvanism, the last one being December 27th; nine were negative and three positive, the vaginal electrode being placed against the cyst; twenty to thirty milliampères; sittings of six to ten minutes twice a week.

January 25th, when she was last seen, there was nothing to represent the cyst but a small amount of non-sensitive thickening in the cul-de-sac. She was working at her trade, and felt well in every way.

She remained in the hospital a few days only, owing to homesickness. I saw her at her home during July and August, and continued with the treatment just outlined. I have the following notes of her condition during that time:

July 18th. Temperature by the vagina 102.6°. More pain; no chills.

August 1st. Pain less. No temperature by the vagina for the last week. Less induration in the pelvis. Is taking two grains of quinine t. i. d., and a good amount of liquid and semi-solid diet. Sitting up a short time daily.

August 11th. Was called to see her on the night of August 8th. It seems that while sitting up she had been seized with a griping pain of great severity in the right abdomen; she partially lost consciousness for a few moments. Her mother, who was present, described a marked rigor and gasping for breath, with blueness of the lips. The whole attack lasted only a few minutes. On my arrival, an hour or so later, she was feeling weak, but in other respects as before. Temperature and pulse normal. Nothing new developed by a careful vaginal examination. Heart and lungs negative. Never had a similar attack before. She attributed the disturbance to having eaten baked beans contrary to orders.

August 21st. The induration in the pelvis has been clearing up all the time and there seems to be coming out of it in the left side a separate mass the size of a small cocoanut. She had her catamenia from August 14th to 21st, the first since June 19th. Much less pain, but more flow.

August 25th, Dr. F. W. Johnson saw her with me in consultation. Under ether we made out a mass with irregular outline, size of a small cocoanut, in the left side of the pelvis, and pushing the uterus, which was three and a quarter inches deep, well to the right. Mass firmly adherent to the uterus along its right margin, more firmly below than above. A small body the size and shape of a pullet's egg, in the right side of Douglas's pouch. Diagnosis: Cyst of ovary or fibroid; salpingitis. Advice: Exploratory laparotomy.

The patient entered St. Elizabeth's again, and August 31st, with the assistance of Dr. Conant and the House-surgeon, I opened the abdomen. Dr. Johnson was present. An incision three inches in length was made in the usual situation after due antiseptic precautions. The abdominal walls were very tense, and there was considerable oozing. The omentum was lightly adherent to the parietal peritoneum. The large mass on the left was found to be adherent to all the surrounding structures. Many of the adhesions were fresh and easily separated; there were no strong adhesions to the intestines. Two cysts as large as English walnuts, with transparent walls and clear, mucilaginous contents, presented on the surface of the mass. These undoubtedly caused the irregular outline noted at the ether examination.

In the cul-de-sac on the right side, could be felt the ovary, size of a hazelnut, and the tube, size of one's little finger, both bound down firmly. The adhesions on the left were broken away gradually and an attempt made to deliver the cyst. When nearly out it ruptured, giving exit to about four ounces of what appeared to be pus. It was of a gelatinous consistency and odorless. Some of it got into the peritoneal cavity. A pedicle formed by the broad ligament and adhesions was included in a Dawson clamp, ligated, and the cystic mass removed. The ovary and tube on the right side were freed from adhesions, raised into the wound, the broad ligament clamped close to the horn of the uterus with Spencer Wells bent forceps, ligated, and the appendages removed. The fundus of the uterus was left in good position, forward, and apparently retained there. There was very little oozing. The abdominal cavity was thoroughly irrigated with hot filtered water in which was a little salt, the cul-de-sac sponged dry, and a drainage-tube left in place. The abdominal wound was closed with silk, dusted with aristol, and dressed with baked gauze, cotton and strapping. No binder was used. Time of operation, three-quarters of an hour. Patient put to bed in good condition. She reacted well. The temperature went up to 100.2° on the second and third nights, after that it was not above 99°. Pulse 70 to 80. Gas was not passed until fifty hours. No nourishment for forty-eight hours. Abdomen flat all the time. The bowels were moved on the third day only after the exhibition of salts, calomel and castor-oil. She was annoyed by obstinate constipation for several weeks subsequently. The tube was removed in twenty-four hours, the gauze in it being soaked with a little serum, and the opening in the wound closed with a stitch left loose for the purpose. The remaining convalescence was uneventful. She left the hospital at the end of September in good condition. Vaginal examination, September 26th, showed the uterus in good position and no evidences of inflammatory effusion in the pelvis. I have heard that she has been in good health since.

Dr. F. B. Mallory, to whom the specimens removed were submitted for examination, reports: Chronic ovaritis, with abscess formation. Dr. Whitney, who kindly looked over the specimens also, agreed with Dr. Mallory that neither Fallopian tube was diseased, beyond some external thickening due to the surrounding inflammatory action.

My object in reporting these cases is to emphasize the difficulty that attends the diagnosis in similar conditions. I know of no affections in the domain of gynecology where the symptoms and rational signs are more misleading.

In pelvic abscess of acute character the diagnosis may be made with comparative ease. By pelvic abscess I refer to a collection of pus originating in the cellular tissue about the uterus. On the other hand, when the condition is chronic and there is pus within or outside of the peritoneum; if within, from a suppurating ovary, hæmatocele, extra-uterine fœtation or a leaky tube walled off by circumscribed peritonitis; if without, from a peri-rectal abscess or an iliac or psoas abscess burrowing in the pelvis, we are apt to find features that lend much uncertainty to the diagnosis.

Case I illustrates how little general disturbance may be caused by the presence for a considerable time of a large quantity of pus in a pyosalpinx. There were no chills, no fever, no sweating, no recurrent attacks of peritonitis, and the mass was not the characteristic tense, tender and fluctuating sausage-shaped swelling of the text-books. The chief symptoms were frequency of micturition and general weakness.

In Case II we have an instance of a peri-rectal abscess with manifest symptoms associated with a cyst of doubtful character on the opposite side of the pelvis, the diagnosis being made clear only by operation. One interesting feature of the case was the rapid disappearance of the abscess and the surrounding inflammatory thickening.

In Case III the presence of pus gave rise to unmistakable symptoms up to the time of the subsidence of the inflammatory attack in July. After that time there was nothing to show that she had a good-sized abscess in her abdomen.

It has been my practice during the last three years to make notes of every abdominal operation at which I have been present as soon as possible after the operation, and to fill out the notes, later on, with whatever facts came to my knowledge.

Of 180 cases by various operators, I find that 26 were primarily cases of diseased tubes, as determined at the time of operation; five of the 26 were large tubes of pus. It so happened that I had partial care of all of these five, and was familiar with their previous histories. In only one were there symptoms typical of the presence of pus.

Case III was the second largest pus tube it has been my fortune to see removed intact. The largest was one of two removed from the same patient by Dr. Clement Cleveland, of New York, in January, 1890. The case was reported, and the specimen shown, before the New York Obstetrical Society, and the larger tube is figured in Mundé's edition of "Thomas on the Diseases of Women." It measured six inches in length and three in diameter at its largest part. The other tube, ruptured during its removal, was four inches by three. The patient was twenty-four years old, married one year, and sterile. She had noticed a swelling in the abdomen for six months. Her only complaints, beyond the presence of the swelling, were loss of flesh and sterility. The tumor had been previously diagnosed by competent men as a dermoid cyst or fibroid.

Another of the five cases was one operated on by the late Dr. J. B. Hunter, in November, 1888. The woman was twenty-three years of age, married five years, sterile. She had inflammation of the bowels four years before, and was in bed two months with the attack. She was the picture of health. Her only complaint was dyspareunia. There was a sensitive tumor in the cul-de-sac. A pus tube the size of a fist was removed.

I have the notes of a case similar to No. III, in that a fluctuating tumor emerged from a large mass of exudate. The patient was twenty-eight years old, married ten years; had had four abortions at about two months, probably induced; no children. She had suffered with pain in the lower abdomen for six months previously. The diagnosis was pelvic inflammation and pyosalpinx. At the operation the tumor was found to be a very adherent multilocular ovarian cyst containing clear fluid. There was no disease of the tubes.

The Correction of Prostitution. — An association has recently been founded at Buda-Pesth with the objects of combating the evils of prostitution, of redeeming its victims, and of establishing and maintaining a free dispensary for the treatment of poor patients suffering from venereal disease.

Medical Progress.

NOTES OF PROGRESS IN PHYSIOLOGY.[1]

BY JOSEPH W. WARREN, M.D.

LYMPH FLOW AND PRODUCTION.

The question of the lymph formation has been studied by Heidenhain.[2] His results must modify very materially the view commonly held concerning this process. While the origin of the lymphatic system in the spaces in the tissues may be accepted as settled, and while, also, it may be considered as clear that all structures get their material from the blood only by the intervention of the lymph (with the single exception of Bowman's capsule in the kidney), there is no settled view as to how the lymph furnishes the supply of material required. Heidenhain points out the futility of any view which considers the lymph to be merely a sort of branch of the blood stream bringing the nourishing materials nearer to the tissues. The amount of lymph which passes through the thoracic duct of a resting dog of 10 kilos in twenty-four hours, appears to be from 500 c.cm. to 650 c.cm. Movement unquestionably increases this amount, but it is uncertain to what extent, probably, however, usually much less than has been inferred from forced movements which appear to about triple the flow. The amount of lymph which must flow in order that its proteids (4.0%) should supply the requirements of the body, according to Voit, is at least ten times as much. Equally striking are the results of a comparison of the amount of lymph needed to supply the mammary glands of a good cow. The lymph of the thoracic duct is *not*, then, the real tissue lymph, but is merely what is drained off as superfluous material, so to speak, from the lymph spaces when the pressure there has risen to a certain height, and the lymph stream is no exact measure either in its quantity or its quality of the processes going on in the lymph spaces of the various organs. Heidenhain believes that no filtration hypothesis can explain this and the results of his experiments; there is some form of cell activity — a "secretion" — in play.

The influence of changes in arterial or venous pressure had been studied by others, but only on the extremities, and the results favored the filtration theory. Heidenhain examined the effect of changed blood pressure upon the flow from the thoracic duct, and comes to quite other conclusions. Lowering the arterial pressure, through closure of the aorta by means of a rubber-bag filled with water, does not stop the flow of lymph; it goes on for a couple of hours at least. The amount may diminish somewhat, but usually not at all, and the variation stands in no relation to the arterial pressure. Such lymph contains somewhat more solids, but this is not due to any slowing of the lymph stream, and is also less coagulable. Closure of the portal vein caused a rapid increase in the lymph stream, but the amount of solids was much smaller — as Emminghaus had also shown. When the arterial pressure was also much reduced, the same result was reached, but the lymph was at first more concentrated. Closure of the vena cava above the diaphragm, which also of course must lower the arterial blood pressure rapidly, and greatly increases the lymph flow, and this lymph is much richer in proteid material. In both forms of venous stasis the coagulability of the lymph is greatly lessened. Obturation of the portal vein produces marked hyperæmia of the intestines; but closure of the vena cava causes anæmia of the intestines and hyperæmia of the liver, on account of the lessened inflow of blood due to reduced arterial pressure and of the valves of the veins which prevent the blood, driven inward to the liver, from returning to the intestinal vessels.

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[1] The object of the "notes" is not merely to report some things that are new, but also to make more generally known some work that, while not absolutely fresh, has not received the general attention that it deserves.

[2] R. Heidenhain: Versuche und Fragen zur Lehre von der Lymphbildung. Pflüger's Archiv, xlix, 209.

It is evident that these are conditions which are not at all in accord with a theory of the lymph formation which relies upon filtration to explain the process, although, of course, no one doubts that filtration may take place through such membranes as are here involved, indeed often does take place under pathological conditions. Only the lymph which forms under high arterial pressure when the portal vein is closed may be considered as in a great measure due to filtration, as shown by the presence of many red corpuscles.

Even more indicative of the existence of some cell activity in the lymph formation and of great therapeutic significance is Heidenhain's discovery of the existence of "lymphagogues"—of substances, that is, which increase the lymph flow either by causing a direct "secretion" from the blood, or by withdrawing water from the tissues ("tissue lymph") and sending it into the lymph and into the blood.

The first class of lymphagoga includes most curious material: muscular tissue of crabs (probably *astacus fluviatilis*), heads and bodies of leeches (both *Hirudo medicinalis* and *H. sanguisuga*), the bodies of various mussels, walls of the intestine (dog), "peptones," white of some eggs.

The muscles of crabs, the leeches and mussels may be extracted with boiling water or they may be dehydrated with strong alcohol and the dried powder afterwards extracted by boiling water. The active substance is then not soluble in alcohol and is not destroyed by boiling. Such a decoction may be injected into the blood (dogs and rabbits) without injury. One dog behaved very much as though afflicted with fleas — the substance causing a sort of urticaria. The lymph flow is commonly increased, and this is not due to changes in the blood flow. A quantitative comparison shows that the lymph has gained water and organic substances but not salts, and that the blood plasma has lost water and organic substances. That this transference of material is no filtration is evident from its character and that it is a cell process — a "secretion" — is shown by the fact that when the blood flow has been shut off for sometime the introduction of such lymphagogic substances causes no increase of the lymph flow — the prolonged anæmia having altered the cells whose activity is involved. "Pepton," by which Grübler's "Peptonum depuratum siccum" is meant — probably much proteose and some real peptone — is another lymphagogue. It also alters the blood pressure by modifying the action of heart. The great increase of the lymph flow occurs, however, when the pepton solution goes directly into the aorta reaching the heart only in great dilution, and then causing neither marked change of arterial pressure nor venous stasis. This lymph is also due to the cell action in the walls of capillaries just as in the case of the other substances. Similar results were produced by extracts of some tissues of vertebrates; for example, the wall of the intestine of a dog killed during active digestion, while the experiment was less successful when the animal had fasted for forty-eight hours. Moderate effects were obtained with extracts of dog liver and ox pancreas, slight with lymph glands of the dog, and none with muscles of the pike and rabbits, or with the spleen or dry blood of dogs. In some instances a dilute solution of the white of egg had a very marked lymphagogic action, but the active substance is not present in every egg.

There is a second class of lymphagoga which increases the lymph flow by taking substances from the other tissues and not from the blood. To this group belong sugar, urea and salts when sent into the blood in considerable quantities. Such substances leave the blood rapidly (as others had shown) and the blood gains water. But the introduction of sugar (grape sugar) or sodium chloride also enormously increases the amount of lymph and at the same time the flow of urine from the kidney. Since the amount of water in the blood, in the lymph, and in the urine becomes greater it follows that this "sugar lymph" can have no other source than the water of the tissues — it is tissue lymph and not blood lymph. The amount of salt necessary to produce such a result is much smaller than that of the sugar. The lymph stream will grow to five or six times its original amount by the introduction of 0.6–0.8 gm. Na Cl for each kilogramme of body weight while 3.0–5.0 gm. of grape sugar per kilogramme would be needed. Heidenhain made a few comparative experiments and found that the lymph flow varies according to the power of the various salts used to draw water from the tissues.

The difference in the action of these two groups of lymphagogues is made clear by the fact, that, when the aorta has been nearly closed for a couple of hours and the introduction of the various extracts already mentioned causes no increase of lymph flow, it increases at once upon the introduction of sugar or salt. The "sugar lymph" is, then, not directly dependent upon the activity of the cells of the capillaries, or, rather, not so directly as that produced by the other lymphagogues. The passage of the sugar into the lymph cannot be explained by any simple diffusion, for it goes on at a time when the lymph contains much more than the blood. The cell wall of the capillaries must be thought as transferring the sugar to the lymph spaces where the attraction for the water manifests itself, and thus the lymph flow increases. Probably the behavior of the salts is the same, but this is not so easily determined.

The way in which the water of the blood is increased is also not clear, nor is it easy to form a distinct idea of the way in which the kidney secretion is influenced. Perhaps the substances under consideration are secreted in a concentrated form in the cortex and take up more water from lymph channels and blood capillaries while passing down through the loops and other parts of the tubules. It must be distinctly borne in mind that the lymphagogues of the first class do not act upon the kidney.

The great significance of these results, incomplete as the experiments are, is evident upon the briefest reflection. The action of many saline waters is perhaps due to some such movement of the lymph, which may be thought to purge and purify the tissues without the ordinary purging action of the salts being an important feature at all. Possibly other drugs (with an "absorptive" or "derivative" action) may be supposed to work in some similar way. May it not be that the damage done by diabetes mellitus is explicable in this way, the presence of much sugar in the blood causing the formation of abnormally much lymph (tissue lymph) to the detriment and weakening of the tissues? The hope, too, is awakened that other "lymphagogues" may be found whose action can be applied to benefit the tissues by causing them to obtain a richer lymph and in larger quantities than they have been receiving and thus improving their nutrition. The entire subject is tremendously suggestive.

THE QUESTION OF NERVE FATIGUE.

Some years age it was shown, but rather inconclusively, by Bernstein, that tetanic stimulation of a motor nerve in frogs caused no fatigue since the muscles would still twitch when the current which had been interposed to block the stimulation was removed. An improved demonstration of this fact was made several years later by Wedenski. It was then shown by Bowditch[3] that the use of curare made it possible to demonstrate that the behavior of the nerves in warm-blooded animals (cats) is the same. The motor nerves do not fag. The same author[4] afterwards published a still more complete demonstration by experiments upon dogs. A motor nerve may be tetanized for hours and yet as the curare used to check movement and fatigue of the muscles loses its effect, that is, is eliminated, the muscle fibres are again led to contract, the stimulation still passing down the nerve apparently in undiminished vigor.

It is, of course, important to inquire whether a similar immunity to fatigue exists in other nerves. For the sensory nerves (Langendorff) it is rendered very probable by the persistence of pain, as in toothache, which may be as great upon awaking as when we went to sleep, but a different form of demonstration is very desirable. Szana[5] has made some experiments which show that the inhibitory fibres of the vagus (at least in the rabbit) are not fatigued by long-continued stimulation. By using atropine the inhibition of the heartbeat could be prevented, although the vagus was tetanized for hours; but as the atropin effect wore off (elimination), the inhibitory action of the nerve became apparent and gradually regained its full power.

RECENT WORK WITH ALCOHOL.

In reviewing the evidence concerning the physiological action of alcohol one is much impressed by the very unsatisfactory character of the experiments made to determine the effect upon the nitrogenous metabolism. Chittenden[6] has recently reported a small series of observations made with great care upon dogs, and which may be greeted as a most acceptable addition to our knowledge of the subject. The animals were fed upon a diet of dried meat and milk crackers, whose nitrogen could be exactly determined, and they appear to have been in nitrogenous equilibrium. In each of the three experiments there was a period of some days without alcohol at the beginning and again at the end, the middle series of eight to ten days forming an alcohol period during which the dog received average amounts of 1.9–2.7 c.cm. of absolute alcohol for each kilogramme of body weight.

Such experiments would be expected to give very definite results if alcohol have a very pronounced influence on the metabolism. They show that "no very striking specific action upon the general metabolism of proteid matter" is caused by such amounts given to dogs. Chittenden thinks that the alcohol must be considered as acting as a non-nitrogenous food, and that the nitrogen of the body may be protected and the nitrogenous output somewhat lessened. Two of his series do show such a diminution of the nitrogen in the excreta during the alcohol period. In both of these cases the day which followed the cutting off of the alcohol-supply showed a great increase in the nitrogen output, as though, Chittenden thinks, some check had been removed from the metabolism of the proteids. A vigorous enemy of alcohol would probably argue that "effete material" had been retained, but he would find it hard to explain why so little effect is produced if alcohol be as harmful as is usually maintained. One very suggestive point is brought out in these experiments by the observation that the excretion of uric acid is much increased (in one series it was doubled) by the action of the alcohol. Whether this be due to freer excretion or to increased production is not clear, but the point seems worthy of further examination, and may throw light upon the relation of alcohol to the "uric acid diathesis." In these experiments no distinct diuretic action was observed.

Another contribution to our knowledge of the physiological action of alcohol has been made by Strassmann.[7] He fed young dogs of the same litter liberally and regularly, giving some of them measured quantities of pure or impure spirits. These experiments lasted about seven weeks, when the animals were killed and weighed. As the animals were young (only about two months old), the number rather too small for comparison, and the quantities of alcohol decidedly large, it does not seem prudent to make many inferences from the figures reported. The percentage weight was distinctly greater in the alcohol dogs for liver and kidneys (muscles and bones not noted), but especially for the fat which was more than doubled. This line of work deserves to be followed up with great care.

In other experiments, upon man, Strassmann endeavored to determine more accurately the elimination of alcohol by the lungs, not feeling quite satisfied with the method employed by Bodländer who had found that the lungs carried off about 1.6% of the alcohol in dogs while man loses 1.2% in this way. The respiration apparatus of Zuntz was used, with the modification that a flask was attached, the air of which was considered to be a fair sample after the expired air had passed through the apparatus for half an hour, and the amount noted. The alcohol vapor in the flask (containing some 1750 c.cm.) was estimated by the chromic-acid method, and the amount calculated for the hour. In this way six experiments were made on three persons, as against Bodländer's three experiments on himself, but with quantities which may be considered to be fairly comparable with those employed by Bodländer. The average amount excreted by the lungs during four hours, after which time the excretion is insignificant, was 5.1% of the quantity of alcohol taken — decidedly more than the 2.0% regained by Bodländer in his expired air. The examination of the urine made by Strassmann in five experiments on two persons determined an average output of 1.7% of the alcohol through the kidney in man, Bodländer's figures being 1.2%; but as the average in one of Strassmann's men is 1.35%, renal peculiarities may be in play. Strassmann agrees with Bodländer that there can be no doubt that by far the greater part of the alcohol is disposed of in the body and not excreted as alcohol; but he thinks that his determination of the amount lost by the lungs and kidneys is more exact, and justifies the conclusion that as much as 10% may be lost leaving 90% to be made use of in the body presumably as a "force producer."

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[3] Bowditch: Note on the nature of nerve force. Journal of Physiology, vi, 133.

[4] Bowditch: Ueber den Nachweis der Unermüdlichkeit der Säugethiernerven. Arch. f. Physiol., 1890, 505.

[5] Szana: Beitrag zur Lehre von der Unermüdlichkeit der Nerven. Arch. f. Physiol., 1891, 315.

[6] R. H. Chittenden (with Norris & Smith): The influence of alcohol on proteid metabolism. Journal of Physiology, xii, 220.

[7] Strassmann: Untersuchungen über den Nährwerth und die Ausscheidung des Alcohol. Pflüger's Archiv, xlix, 1891, 315.

It is perhaps worth while to call attention to one point in this investigation, while admitting that the method is in principle an improvement upon that of Bodländer. Strassmann seems to have made but one control experiment to test his method and he then recovered only 89% of the alcohol which had evaporated from his mixture. Since the method itself multiplies any error in the determination by about 250, and since the determination depends upon color comparisons, it is hard to say how much exactness may be credited to the observations. It may also be fairly urged that the respiratory movements, while not affecting the oxygen and carbon dioxide whose proportions are dependent upon the tissue respiration, are sufficiently altered to render the excretion of the alcohol by the lungs greater than it would be normally. Some of the irregularities in Strassmann's tables strongly suggest this and one experiment with forced respiratory movements, by which the exhalation of the alcohol seems to have been markedly increased, although not conclusive, points in the same direction.

In another series of experiments made in the same laboratory [8] the influence of alcohol upon the digestion was incidently examined. It was found that 60 gm. of alcohol had no deleterious influence upon the digestive powers of a man accustomed to take that quantity, as compared with the digestion of a similar diet in another man using no alcohol.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR Meeting Monday, December 7, 1891, DR. CHAS. B. PORTER in the chair.

DR. W. F. WHITNEY read a paper on

FAT EMBOLISM.[1]

DR. A. T. CABOT: I remember very well the first case that brought the subject of embolism to my mind. The case was that of a man with fractured thigh. Very severe dyspnœa came on, and he died on the third or fourth day. I, myself, made the sections of the lungs, and found them very generally filled with fat, that is, the capillaries. It was a fat leg I remember, and it seemed at that time as if the symptoms were largely of the respiratory system, and were, we thought, adequately accounted for by the amount of fat found in the capillaries of the lungs.

In regard to the case Dr. Richardson speaks of, at the time I saw it my reason for not advising operation was that I did not think the man would survive the operation. I should like to ask Dr. Richardson if he has figured out any lesions that he would be likely to find.

DR. M. H. RICHARDSON: I must have expressed myself badly, for I meant to say the diagnosis was extremely obscure, and that it was very doubtful whether operative interference would do any good whatever, though it seemed possible that some removable cause might be found. The first twelve hours the symptoms did not seem serious enough to justify operation, and during the next twelve the patient suddenly became so much worse that operation was out of the question.

DR. CABOT: It seems to me, in cases where the lesion is occasioned by a fall which sets up a peritonitis, you almost always have some symptoms of that lesion earlier in the history of the case, immediately after the case comes under observation you have some symptoms of pain and local tenderness. It seems to me with those symptoms an immediate laparotomy might be advisable. I have not many data to go upon, but I should hardly think with the absence of those symptoms a laparotomy was likely to show a lesion that could be remedied.

DR. CHARLES P. PUTNAM: I should like to ask if Dr. Whitney gave any theory as to the cause of the condition of the contents of the stomach and upper part of the intestine in the case of the man.

DR. W. F. WHITNEY: The stomach presented a few small hæmorrhagic erosions, such as are apt to occur in cases of severe and prolonged vomiting, and apparently there had been no peristaltic movement to move the dark-colored contents of the intestine along. It is possible that both of these cases of intestinal disturbance may have been, as I suggested, of central origin and due to fat embolism of the brain. Certainly, in the case of the man, there were no appearances of peritonitis found at the autopsy. There was a distension of the intestines from the stomach to the rectum, but beyond that there was absolutely nothing beyond slight injection of the surface not inflammatory in character nor accompanied by any exudation. The similarity in the symptoms of these two cases is very marked, and the fall in temperature in both was very striking. This was one of the most constant symptoms noticed in cases of fat embolism, and as in both of these it occurred at the time when most of the recorded cases die, it is fair to suppose that it may have been due to such embolism.

As regards what Dr. Cabot said, of course there is always the objection that we cannot with absolute certainty take the results of experiments on animals and transfer them without any further consideration to man. In animals we find that a very large amount of the pulmonary circulation must be shut out before rise in arterial tension is found, but I do not think we can say a less quantity may not produce very grave symptoms in man.

I would like to ask Dr. Richardson or Dr. Cabot if it is customary to see as much rise of temperature after ordinary cases of simple fracture as found in these.

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[1] See page 159 of the Journal.

[8] Zuntz and Magnus-Levy: Beiträge zur Kenntniss der Verdaulichkeit und des Nährwerthes des Brodes. Pflüger's Archiv, xliv, 438.

Dr. Cabot: Fracture of what bone is particularly liable to be followed by this?

Dr. Whitney: I think it depends a good deal on the laceration of the tissues besides that of the bone-marrow itself. Fat embolism has been found after almost every fracture that has been known. In one case I found it in the kidneys three-quarters of an hour after a case of simple fracture of the skull. It has been found in a number of cases of puerperal eclampsia, but the origin of the fat was very doubtful. In cases of rupture of the liver and absorption of fat from the peritoneal cavity, emboli have been found. In insane people who have thrown themselves against the side of the room and received severe contusion, embolism has resulted. In these cases there is a comminution of the subcutaneous fat tissue from which absorption can take place as well as from the bone marrow. It has been noticed after the removal of fat tumors and resection of the knee-joint.

It seems to me that really the cases in which death can be attributed solely to the fat are very few, and that it is usually complicated by a septic process.

Dr. H. F. Vickery: May I ask whether fat cannot go through ordinary capillaries perfectly well, whether that is not one argument that it must be in the brain's terminal arteries alone that fat can do harm?

Dr. Whitney: I think it must go through the ordinary capillaries, but why it should remain stored up for a week and then appear again is a very curious point.

Dr. Richardson: We are much indebted to Dr. Whitney for his valuable communication upon this important subject, for it shows us that we are liable to make grave mistakes in the treatment of fractures of long bones if we do not bear in mind the possibility of fat embolism, and may subject patients to unnecessary risk and suffering by useless operative interference.

In reply to Dr. Cabot I would say that in both my cases we had just that combination of symptoms which, in the absence of traumatism at least, demands immediate exploration of the abdomen. This was especially true of the first case reported. The symptoms seemed to indicate either an acute obstruction or a general peritionitis, or both. I do not think anybody suspected in either case the presence of fat embolism.

The importance of this pathological condition and the symptoms by which it manifests itself have been strongly impressed upon me by Dr. Whitney's paper, and I hope to profit much by his recommendations.

Dr. C. B. Porter: I agree most cordially with what Dr. Richardson has said as to the debt we shall owe in the future to Dr. Whitney's paper to-night. I can recall but one case, as I run back in my mind over the fractures with sudden death, and that is of one in recent years. I do not remember the exact facts about it, but I think it was fracture of the leg. The autopsy proved it to be a case of fat embolism. I think there were no abdominal symptoms, but respiratory and cerebral symptoms.

DISCUSSION ON INTERNAL ANTISEPSIS.

Dr. H. C. Ernst opened the discussion.[2]

Dr. F. H. Williams: The subject seems to me of much importance, and I think that by careful treatment we can do something in the direction of intestinal antisepsis both from a dietetic standpoint and also by the administration of suitable remedies. It is obviously desirable that the remedies should not dissolve in the stomach, and also it is important that they should not be poisonous. Calomel which has been much used is not very soluble. Salol is given by many practitioners, but it has some dangers; by its decomposition carbolic acid is formed, which may be absorbed by the system and, as a matter of fact, cases have been reported of death with symptoms of carbolic poisoning from the use of salol. I think it is necessary that a warning should be sounded against large doses of salol. Certainly salol ought not to be used except in small quantities, and perhaps there are even better drugs to use. I am inclined to think there are. Hydronaphthol seems to me one of the most promising at present, and I think it may be used successfully, so far as symptoms go, in rather small doses. A grain, I think, is a sufficient amount in most cases, to be given as often as once in four hours, and in many cases one-half a grain is a sufficient amount. It is better to give these remedies between meals, so that they may not interfere with digestion.

As regards what the patient shall eat, I think much care can be exercised to advantage. Last summer at the City Hospital I used what is known as evaporated milk, that is, milk prepared by putting fresh milk into a vacuum pan and concentrating it so that it is four times as strong as ordinary milk. It can then be transported and kept fresh a considerable time, a week or ten days. When that kind of milk is diluted at the bedside it seems to me the patient is likely to get something which may be serviceable. Certainly this last summer the typhoid fever cases did seem to me to do better, so far as abdominal symptoms are concerned with treatment on evaporated milk, with small doses of hydronaphthol. I hope that in the near future we shall be able to do much towards intestinal antisepsis, and that we may have tests of the urine which will show us how well we have succeeded in our efforts.

Dr. J. A. Jeffries said he was very glad to learn that efforts were being made in the City Hospital to provide typhoid patents with relatively sterilized food. Some years ago when studying the summer diarrhœas of infancy he had tried to impress upon the profession the importance of this measure, not only for children but also for adults.

Turning to the subject of intestinal antisepsis, that is, the killing of bacteria in the intestines, he did not think that any of the drugs now known were successful. The highly complex mammalian organism is more susceptible to poisons than the bacteria, and at the present time we could not poison the latter without injury to the former. The satisfactory course of a disease under the administration of an "intestinal antiseptic" did not show that the bacteria were in any way affected. This could only be demonstrated by examination of the bacteria in the stools, and such examinations did not give satisfactory results. When diarrhœa had been set up and the volume of the dejecta was increased, there was a relative diminution of the bacteria at times, and but little more. This was a mechanical action equal to the washing of a wound, and to be more safely accomplished, where indicated, by a cathartic. Any one who had experimented upon animals and had seen the results at times induced by non-fatal and inactive doses — so far as bacteria are concerned — would be slow to take them himself.

Some of the gentlemen have referred to the want of some other measure of the putrefactive changes going on in the intestine. We have had such for years.

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[2] See page 157 of the Journal.

Certain of the products of bacterial growth — sulphuric ethers and aromatic compounds — are absorbed by the intestines and eliminated by the kidneys, as pointed out by Marox, Baumann and others.

Calomel, iodoform and a few other drugs of more or less use seem to act on the intestines not by killing the germs but by combining with the poisons and rendering them inert, the same as tannic acid and some of the alkaloids. A consideration of the bacteria in the liver and spleen in typhoid, phagocytosis immunity and the like are far from the question under discussion — intestinal antisepsis.

Dr. H. F. Vickery: An attempt at internal antisepsis is one that we ought to make, and I believe that some generation of physicians will succeed. There is one difficulty about it that has not been dwelt on. To realize internal antisepsis you have got to follow these micro-organisms around. They are not merely in the intestine. For instance, the bacillus of typhoid fever is found in the spleen also, and I do not think it is proved that all the harm that the typhoid bacillus does is transacted in the intestine. The preparing of the individual to carry on his natural fight against the disease-causing organisms is a rational measure, as has been mentioned, the giving him all the strength we can; and it also is a rational measure to keep the contents of the bowel moving on, within proper limits, as has been suggested by the last speaker. But it does seem to me at this present stage that asepsis bears the same relation to antisepsis internally as asepsis in performing a laparotomy does to an endeavor to cure a person with general septic peritonitis. We must try to have the air breathed, the food and drink swallowed, harmless. That is the most important service we can possibly accomplish. It is by what is called public medicine, hygiene, we can do the most good in this line.

Dr. C. B. Porter showed a

DERMOID CYST,

removed from a young woman twenty-six years of age. Her catamenia began at fifteen, and there was nothing remarkable in connection with them. She has had six children, and been married seven years. Five months ago she had twins. She has had pain in the back two years, and vaginal discharge three years. Only three months before the tumor was removed did she notice its presence. She was not able to lie on the left side since on account of pain. The tumor, as it presented itself through the abdomen, was considerably larger than a two-quart jar, and movable, and was very rapidly reached by the ordinary incision by laparotomy. Upon introduction of the trocar there was no exit of the fluid at all, although it was evident it was a fluctuating tumor; and after ineffectual attempts and stripping the rubber-tube, it was found we could not get any fluid in that way, and upon withdrawing the trocar a fatty fluid flowed out and the tube was plugged by this mass of hair. I was finally obliged to turn the woman on the side, and allow the contents to flow out before I could introduce the hand and get the tumor out. The operation was done two weeks ago. The patient is now well.

Dr. Porter also showed

FOUR CALCULI REMOVED FROM THE BLADDER BY SUPRAPUBIC SECTION.

The patient was a man eighty years of age, and had had difficulty in micturition for five years, and had been obliged to use the catheter the whole of that time. He had been troubled to a very considerable extent with hæmaturia, and his attending physician at one time in the passage of the catheter thought he felt a grating in the bladder. The operation was done November 21st, and upon exploration of the bladder, both previous to the operation and at the time of the operation, it was impossible to strike the stone. One could get with the sound a sensation of grating. I opened the bladder by the suprapubic section and removed the four stones. One is quite small. The urethra was surrounded entirely by an enlargement which made it simulate exactly quite a good-sized os uteri with quite hard and prominent mouth and lips, and these I seized with forceps and cut off with curved scissors. The tubes are out from the suprapubic wound and he is passing most of his urine through the catheter that is placed in the bladder, and a little oozes out still from the wound. He is doing remarkably well, and for a man eighty years of age to undergo such an operation is quite remarkable. I am passing the large sounds, 33 and 34 French, every third or fourth day into the bladder, in the hopes of so moulding what is left from the prostate, that if he recovers from his ventral wound he will be able to pass his water in the natural manner.

Recent Literature.

A Text-Book of Physiology. By M. Foster, M.A., M.D., F.R.S., Professor of Physiology in the University of Cambridge, and Fellow of Trinity College, Cambridge. Fourth American from the Fifth English Edition, thoroughly Revised, with Notes, Additions and 282 Illustrations. 8vo, pp. 1072. Philadelphia: Lea Bros. & Co. 1891.

At first glance the book may seem to be a faithful reprint of the last (fifth) English edition, but unfortunately this is true of only part of it. As far as, and including page 886, the volume before us seems to be a fairly accurate reprint of Parts I, II and III of the fifth English edition, containing but few typographical errors, and no important additions to the text. About seventy-eight figures have been inserted, but few of which are, however, strictly physiological in character most of them being illustrative of anatomical structure. The remainder of the book, that is, from page 887 to the index, including both, seems to be simply a reprint of the corresponding portion of the third American, and in no way represents Part IV of the fifth English edition to which, according to the title-page, it should correspond. This oversight — if such it be — is very unfortunate, inasmuch as it impairs greatly the value of the book, and as a reference book to the many students now possessing a copy, who may be unaware of the defect, renders it — this portion at least — worse than useless.

The fifth English edition of Part IV differs greatly from the fourth, though two of its chapters are practically the same as the corresponding chapters in the fourth edition.

The Appendix, by Mr. Lea, "On the Chemical Basis of the Animal Body," has not so far as we know appeared in a revised form since the publication of the fourth English edition (1883), though it is forthcoming, and will form a companion volume to the last English edition. There is one typographical error to which it would seem proper to call attention. On page 54 the words "give out something" have been omitted after "takes place" (line 7). This omission renders the sentence to which the words belong quite unintelligible.

The name of the American editor does not appear.

J. C. C.

An Introduction to Human Physiology. By Augustus D. Waller, M.D. Lecturer on Physiology at St. Mary's Hospital Medical School, London; Late External Examiner at the Victoria University. 8vo, pp. 612. London: Longmans, Green & Co. 1891.

The author's style is peculiarly clear and simple, and his language exact. Part I deals with "The Phenomena of Nutrition," under which heading are discussed the physiology of the blood, circulation, respiration, digestion, secretion, excretion, metabolism and animal heat. Part II deals with "The Phenomena of Excitation," under which heading the author includes the physiology of the neuro-muscular system and of the sense organs.

The Appendix contains a section summarizing the knowledge thus far accumulated relative to the physiology of the embryo, and a chapter giving the "Constitutional Formulæ of some of the Chief Proximate Principles," which latter we hope will be of great use to the student in aiding him in his endeavor to form a "living mental picture of what the great organs below a man's skin are like, what they are doing, etc.," of which the author states in the preface physiology "should fundamentally consist."

A brief and quite well chosen Bibliography has been appended in the hope of affording the student a "few main starting points and indications."

At the head of each chapter is a syllabus of its contents, in which by means of a prefixed asterisk those sections which treat more especially of the details of the subject are indicated.

It is well calculated as a text-book for junior students of medicine for whom it seems to have been primarily intended, while it contains able discussions of some of the yet unsettled questions which will make it of value to more advanced students. The descriptions of methods and of apparatus are very clear and precise, facts are well stated and conclusions neatly drawn.

There is a place for it among English text-books of physiology which is at present filled by no other.

J. C. C.

Physical Diagnosis. A Guide to Methods of Clinical Investigation. By G. A. Gibson, M.D., D.Sc., F.R.C.P., Ed., and William Russell, M.D., F.R.C.P., Ed. With one hundred and one illustrations. New York: D. Appleton & Co. 1891.

This is a small octavo of 367 pages. The authors are both teachers in the Edinburgh Medical School, and one of them is also connected with the Glasgow School. The book, as its title implies, is a hand-book for students, and is limited entirely to the consideration of physical examination.

It is a convenient and, our examination indicates, a reliable compend for the purposes for which it was prepared.

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TYPHUS FEVER IN NEW YORK.

The most serious outbreak of typhus fever that has occurred in the country for many years, became known to the health authorities of New York late on the night of February 11th, and on the following day no less than fifty-eight cases of the disease were discovered. The history of the rise and spread of the typhus is as follows: On January 30th the French steamer *Massilia*, of the Fabre line, arrived with 717 steerage passengers. Two hundred and fifty of these were Russian Hebrew immigrants who were aided by funds provided by Baron Hirsch, and they were first transported from Odessa to Constantinople, whence they hoped to be able to go to Palestine and settle. Being disappointed in this, through the action of the Turkish authorities, they came to Marseilles, where they embarked on the *Massilia*, together with a considerable number of other immigrants of various nationalities. The steamer on January 1st, took on board more than 200 Italians, and on January 12th she sailed from Gibraltar. During the voyage to New York, according to the passengers' accounts when they landed, they were insufficiently fed, and four died in mid-ocean. On the ship's arrival eleven passengers were still ill, three of them with what was believed to be typhoid fever, but which, as the sequel shows, was undoubtedly typhus. They were all sent to the immigrant station on Ellis Island, the Russian refugees unfortunately being permitted to land on the understanding that the United Hebrew Charities, which have charge of the disposition of the Baron Hirsch fund in New York, should not permit them to become a burden in this country! They were for the most part in a pitiable state of destitution, and some $400 was expended in providing clothing for them.

One of the houses to which they were sent was on 12th Street, near Third Avenue, and a number of its inmates were soon reported ill. A physician in the service of the United Hebrew Charities, was called to attend them on February 8th, and learning that there had been cases of typhoid fever on the *Massilia*, he made a diagnosis of that disease. On the evening of February 11th, he became so alarmed at the gravity of the outbreak, that he sent word to the Bureau of Contagious Diseases to remove some of the patients to the hospital. At 11 o'clock that night Dr. Roberts, an inspector of the Bureau, made a visit to the premises, and early the next morning Dr. Cyrus Edson, chief of the Bureau, went there to investigate, when to their astonishment, these officers found fifteen well-developed cases of typhus, and it was ascertained that the first case had occurred on February 2d. These fifteen cases, together with the mothers of four of the patients who were young children, were at once sent to the hospital on North Brothers' Island, and the most prompt and thorough measures of disinfection taken in the house.

A search was then made at the other tenement-houses where the Russian refugees had been lodged, and this resulted in the discovery of forty-three more cases of typhus, which were all sent to the hospital for contagious diseases. It was ascertained at the same time that about sixty of the Russians who came over on the *Massilia* had already been sent to situations in different parts of the country, so that they will be likely to take the disease with them.

On the day following, February 12th, eleven additional cases were discovered among the Russians. Every effort was made to trace the Italian and other immigrants who came on the *Massilia*, but it was found that many of them had left the city. A special meeting of the Board of Health was also held, and resolutions were adopted, taking suitable measures to prevent the dangers of infection from the immigrants from the steamer *Massilia*, and to provide hospital accommodation for the cases as soon as discovered. On February 13th, five additional cases of typhus were found among the Russians from the *Massilia;* February 15th, seven more cases; February 16th, six cases at Oakdale, Mass.; and each day is adding to the list. There are, at time of writing, eighty-nine cases at North Brothers Island.

The whole country is more or less alarmed and disturbed, and really in a certain measure endangered by the living freight which this steamer has been allowed to land upon our shores after it had been refused the hospitality of the intelligent Turk.

We have thought it worth while to put together the main facts in the case as an illustration of the daily folly which we as a nation are permitting to be committed in the beautiful name of freedom, to the relief of other countries, the profit of a lot of steamship companies, the gradual degradation of our population, and the positive diminution in the safeguards for life, liberty and the pursuit of happiness which those already living here would like to be assured of. We open our doors to squalor and filth and misery — which mean typhus fever, and we admit leprosy almost as if these things were blessings in disguise.

The reports of the Treasury Department show that for the last six months of 1891, the number of immigrants coming from Russia (Poland excepted) in those months was 46,710, as against 20,934 in the corresponding months of 1890. The whole number of immigrants was greater in 1891 than in 1890 by about 100,000, and nearly half of this increase is ascribed in the reports to Russia and Poland.

As sanitarians, with this text before our eyes, we desire to add our indignant protest to that expressed by the eminent statistician, Gen. Francis A. Walker, in a recent lecture against the results of our immigration laws. There are times when charity should begin at home.

SUICIDE IN THE EUROPEAN ARMIES.

The percentage of suicides had become so great in the French army that the French Minister of War sent Dr. Longuet as a special delegate to the International Congress, held last summer in London, to communicate the results of his studies relative to suicides in the armies of Europe. Mr. F. P. Emery summarizes these results as follows:[1]

The Austrian army leads, with a yearly average of 122 suicides for every 100,000 men in the effective troops, for the years 1875 to 1887, inclusive. The maximum was observed in 1889, when it was 149 per 100,000; the minimum was in 1878, when it was 97. In this army suicide is appreciably increasing; death by suicide represents a fifth part of its entire mortality; there is no disease that is more prominent in the list of causes of death.

The German army ranks next to the Austrian in this connection. The ratio of suicides here during the years 1878 to 1888 was 67 per 100,000 annually. Here, also, suicide is on the increase.

In the Italian army, from 1874 to 1889, there were 40 suicides per annum per 100,000 troops. In contrast with what is above stated as to the increase in this army mortality in other countries, the army mortality in Italy due to suicide, has remained nearly stationary during a series of years.

In the French army (home service) there were in each year from 1872 to 1889, an annual average of 29 suicides per 100,000; in Algeria, the French soldiers killed themselves during the same period at the rate of 63 per 100,000.

In the Belgian army the suicide rate was 24 to every 100,000.

In the English army (home service), from 1882 to 1888, the rate was 23 per 100,000; in the Indian service (Bengal division) it was 48.

In the Russian army the rate from 1873 to 1889 was 20, with a maximum of 91 in 1882.

The Spanish army, at the foot of the list, but for a single year only (1886) gave a rate of 14 suicides per 100,000 men.

In the old armies, especially those recruited by enrolment, it was the older soldiers who generally committed suicide. This is still actually the case in the English army. In France, Italy, Germany and Austria, on the other hand, it is to-day the young, rather than the old soldiers, who commit suicide. In Austria there is an excessive proportion of suicides of young soldiers, who kill themselves during the first month of their service. The under-officers present three times the proportion of suicides that are found among the troops; while the officers, who are older men of higher rank, furnish twice the number. It is among the engineers that the suicides are generally least frequent; among the cavalry and infantry the most. Condemned soldiers in the military prisons and penetentiary institutions rarely take their own life. On the contrary, there are frequent suicides in the corps prisons, among those soldiers who are accused and are awaiting trial.

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[1] Publications of American Statistical Association, Sept., 1891.

Shooting is the most frequent method. It counts for more than one-half, and in the Austrian army for three-quarters, of the whole number. This proportion is four times as large as that offered by the civil population. Hanging and drowning are the two other modes that are most frequent. It is worth while to note that in the English army there is a great frequency of suicide by cutting the throat, a mode of self-murder unknown in the French army, but which occurs to a slight extent in the German.

It is in the infantry that the use of fire-arms is most common. Among the mounted soldiers hanging is much more frequent, and is often accomplished by means of the horse-bridles. In the prisons, hanging is the almost exclusive mode.

Those who shoot themselves almost universally aim at their heads. The army in Algeria, however, forms an exception. With these soldiers it is almost always the body that is shot; usually the abdomen or the chest; sometimes the neck, the shoulder, an arm or a leg. May this not be due to the fact that among the Arabs an idea of infamy attaches to the mutilation of the head?

The seasons exercise their influence upon the manner of suicide; and in summer drowning is much more frequent.

In the Austrian army a third of the suicides are attributed to a distaste for military duty. This cause shows itself with much less frequency in the other armies. The fear of punishment is said to cause one in three in Austria and Germany, one in five in France, and one in seven in Italy. Suicide caused by some love trouble is much more frequent in France, where one-fifth of the whole number is attributed to this cause, and in Italy, where it is responsible for one-seventh, than in England, Germany and Austria. Mental disorders represent from one-fifth to one-twelfth of the whole number.

The increase in the frequency of suicide during the hot season is as marked in the army as among the civil population. The maximum suicidal mortality is reached during the hottest summer months, and the minimum during the coldest of the winter.

The State Board of Health of Kentucky, have begun a vigorous prosecution of quacks and travelling doctors in Louisville.

HYGIENIC LEGISLATION.

Our legislative committees have to listen sometimes to very funny petitions. The Committee on Public Health of the Massachusetts Legislature has recently been hearing arguments on the petition of the Woman's Christian Temperance Union, asking that all boys under sixteen years of age found smoking in public places be arrested, locked up, taken into court and fined. The petitioners complained that the present law prohibiting the sale of tobacco to minors was not enforced; but they seemed to think that by arresting boys *flagrante delicto*, the youth of the State would be frightened into abstinence. This, surely, shows a great lack of knowledge of the character of the small boy. If by such a simple expedient as smoking a cigarette he could make his natural enemy, the policeman, take an active part in a game of hare and hounds, the supply of cigarettes would soon fall far short of the demand.

One of the more enthusiastic of the petitioners informed the committee that tobacco is a deadly poison, and related several cases within her experience in which cigarettes had ruined boys of her acquaintance. If her boy smoked, she would rather have him arrested than not, and she should prefer that he be kept in jail until he was seventy years of age rather than have him become a confirmed smoker.

We do not wish to imply that it is not very desirable to prevent minors from smoking, if possible, but there are several similar bad habits which are freely indulged in, and which do much more harm than juvenile smoking. We respectfully suggest that if this bill is to be acted on, there be included in it a section making it a misdemeanor to feed a child of less than three years of age on seed-cakes, pickles, candy or tea. If this provision were carried out many, possibly valuable, lives would be saved to the community every year. Also, as there is no reason why hygienic legislation should be limited by age, much more suffering than is caused by cigarette smoking, both to the victims and their friends, would be saved by arresting all women who drink more than a pint of tea in the twenty-four hours.

Several similar amendments to the bill suggest themselves, but some of them would be difficult to enforce, and it is of great importance to the public that the duties of the policeman should not be made greater than is consistent with the limitations of time and strength.

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MEDICAL NOTES.

Pan-American Medical Congress in New York State. — At a meeting of the Medical Society of the State of New York at Albany, February 5th, a committee was appointed to co-operate in promoting the interests of the Pan-American Medical Congress. The committee consisted of Drs. A. Walter Suiter, A. Van der Veer, James D. Spencer, Seneca D. Powell, W. W. Potter, D. B. St. John Roosa, and John O. Roe.

Rush Medical College. — A Concours will be held at Rush Medical College, Chicago, beginning Tuesday evening, March 1st, for the purpose of filling the position of Lecturer on Anatomy, and on Materia Medica and Therapeutics in the spring Faculty. The spring course begins March 31st, directly after the close of the regular term, and continues two months with a class of from 250 to 300 students.

The Khedive's Death. — The *British Medical Journal* has received a series of documents bearing upon the last illness of the late khedive of Egypt. To publish them, it says, or even an analysis of them, would renew the most painful impressions. It is impossible, in the light of all the facts, not to arrive at the conclusion that Tewfik's death was hastened by the untimely administration of morphine. "The whole story is an illustration of the lamentable influence of the harem in bringing about the selection of native physicians, and their control of access to the patient, skill and experience of European physicians being thereby set at naught."

New Medical Periodicals. — The *Revue Générale de Médecine de Chirurgie et d'Obstetrique*, a weekly journal devoted entirely to short reviews of recent medical papers, appeared for the first time in January. It is published in Paris under the editorial charge of Dr. F. de Ranse. The *Hot Springs Medical Journal* has been established in Hot Springs, Arkansas, to appear on the fifteenth of each month. In addition to other subjects, the therapeutic value of the springs will be discussed.

The Legal Status of the Corset. — In a recent opinion Judge Wheeler, in the United States Circuit Court, sustains the decision of the Board of Appraisers and of the Collector that a corset is an article of wearing apparel. The decision is as follows: "In this case the question is whether the article known as cotton corsets is properly classified as wearing apparel. In point of fact, it is a waist in which are inserted whalebones or steel for support of the body and clothing. If you were to ask anybody who did not care anything about the matter in any way, but who knew, whether that was an article of wearing apparel or not, or whether a mechanical contrivance, I rather think he would say it was a piece of clothing, that it would help to keep the body warm, and answered the purpose of a waist. I think it is clothing. However, I am not so very confident of it. The finding may be confirmed."

The Bread of the Famine Districts in Russia. — The *Lancet* has obtained possession of a specimen of the relief bread furnished by the Russian Government to the starving peasants in the Province of Nizhni-Novgorod, and has had it analyzed. The result shows the addition, in round figures, of not less, and probably more, than ten pounds of foreign substance to every hundred weight of rye flour, including woody fibre and husks, leafy matter and seeds, and containing silica and sand to the extent of more than two per cent. This makes the flour heavier and also increases its bulk. The bread is described as of a dirty brown color, looking like coarse peat. Many persons to whom it was shown failed to recognize that it was bread at all. A Russian, writing from Nizhni-Novgorod, says: "I found in many cases that this so-called bread contained no rye flour whatever, but was composed of wild arrack, potatoes, chaff and leaves." The daily allowance of this so-called bread judged sufficient to keep the life in a healthy adult is something less than one pound.

BOSTON.

Closing of Tenements. — The City Board of Health have recently ordered vacated a number of tenement-houses, for sanitary reasons.

Death-rate for the Week. — There were 194 deaths in Boston last week, making the death-rate 22.1. Of these, nine were due to influenza, three being uncomplicated. The deaths from consumption were 16, pnemonia 27, bronchitis 19. The number of persons over sixty years of age was 46.

Mortality of Boston in January. — The death-rate of Boston during January was much larger than usual. This was undoubtedly due to the epidemic of influenza — more than appears in the returns. There were 1,190 deaths, as against 894 in 1891, making the death-rate 31.10. Of the deaths last month, 567 were males; 386 were married, 1,160 were white, 285 were under five years of age, 689 were natives of the United States, and 298 were of American parentage. Influenza was reported as the cause of 63 of the deaths; consumption, 150; scarlet fever, 29; diphtheria, 28; bronchitis, 109; heart disease, 84; pneumonia, 240. Scarlet fever was unusually prevalent; there were 290 cases reported against 109 during the corresponding month of 1891.

The Home of the Good Samaritan. — The annual report of this institution shows that during the past year 249 patients were treated at the institution, of which 59 were children. The hospital has been much benefited by an entire change in the system of drainage.

The Children's Hospital. — During the year 1891, 603 patients were treated in the hospital, and 1,790 new cases in the out-patient department. The systematic training of nurses has been established, the course to cover two years. The Convalescent Home of the Children's Hospital, a corporation formerly known as the Ladies' Aid Association of the Children's Hospital, reports that thirty-three acres of land were given by Mr. H. H. Hunnewell at Wellesley Hills, and the building is well advanced. The building contains two wards, each holding twenty-three beds, a large play-room, covered piazzas, and other rooms necessary for a well-equipped convalescent home. The managers intend to keep the home open in winter as well as summer, as soon as the resources will allow.

NEW YORK.

A New Site for St. Luke's Hospital. — The authorities of St. Luke's Hospital have purchased a new site for that institution. About $500,000 was paid for the land, which is 583 by 200 feet, and is situated between Morningside Park and Tenth Avenue, and extends from 113th to 114th Streets. It is quite near the sites selected for the Cathedral of St. John the Divine and the new Columbia College buildings, and the ground has an elevation of 120 feet above tidewater. It is the present design to erect only a section of the building at first The cost of this will be about $750,000, and it will be harmonious in design with those of the Cathedral and Columbia College. One special idea of the new enterprise is to have separate buildings for patients with certain diseases, and it is probable that one devoted to those suffering from phthisis will be erected as soon as the necessary funds can be secured.

A New Hospital for Children. — The trustees of St. John's Guild have determined to establish a small hospital for children in West 61st Street, and if this movement is successful, and the necessary funds are forthcoming, they propose to open other branch hospitals of a similar character in the most densely populated portions of the city.

PHILADELPHIA.

Resignation Withdrawn.— Prof. Wm. Goodell tendered his resignation of the Chair of Gynecology in the Medical Department of the University of Pennsylvania, February 11th, but at the request of the Trustees, has consented to withhold it, provided his duties are lessened, as the demands of his large private practice forbid his devoting so much time as he has been giving hitherto to college and hospital work.

Professor Wood's Testimony in the Harris Case. — Prof. Horatio C. Wood made a personal statement at the last meeting of the College of Physicians, which calls attention to a remarkable and too prevalent abuse of privilege. In a recent trial in a New York City Court (the Harris Case), Professor Wood was called upon to testify as an expert on opium-poisoning. When he read the report of his testimony in the New York papers the next morning, he found statements attributed to him which to his mind could only be explained on the theory that he was mentally irresponsible at the time of making them. He was very much concerned about the matter, and immediately returned to New York to see if it was too late to have the testimony re-opened, so as to make his testimony read as he had intended to make it. Upon reaching the office of counsel he asked to see the official stenographic report, in which he found his replies, to hypothetical and scientific questions, perfectly correctly recorded. He arrived at the conclusion that the reporter, who had written the account of the trial, was not present in court when his testimony was given, and wrote a fictitious and misleading statement. What Dr. Wood did state is as follows:

"The positive diagnosis of opium-poisoning from the symptoms alone, is often impossible. In the Harris case, the symptoms as embodied in the hypothetical question were so loosely observed that many symptoms essential to the diagnosis are omitted, and to this is added the fact that the early development of complete coma as recorded, is conformable to natural diseases, and is extremely rare, if it ever be present, in opium-poisoning. It seems to me that the cause of death, so far as the medical testimony is concerned, is enshrouded in an impenetrable mystery.

The New Laboratory of Hygiene of the University of Pennsylvania is to be opened on February 22d, with appropriate ceremonies, and a large number of guests have been invited to inspect the new building and its complete equipment. It is very clear that the course is to be eminently practical. Every part of the building is a hygienic object-lesson; all the most approved methods of heating, lighting, draining and ventilating are to be tested by actual use. One room has six varieties of steam radiators, arranged so that the efficiency of each, and others, if necessary, can be known by accurate measurement. Another room exhibits three systems of ventilation. All sorts of traps and water-closets will be tested in the building. All pipes for drainage, hot and cold water, steam and gas, have everywhere been left bare; each system has its own color, so that it may be readily traced. In many of the laboratory fittings, there are new features especially adapted to the novel work to be done. The construction has been continually under the supervision of Dr. John S. Billings, who will be the Director of the School, and it appears certain that nothing which could add to the efficiency of the course has been omitted. Besides the course in Practical Hygiene, there will be an elementary course in Bacteriology, commencing at once, and an advanced course commencing April 2d, each lasting eight weeks. These courses are intended to be practical and will include investigations of water, air and soil, the study of pathogenic bacteria, microscopic technique, culture media, protective inoculation, and the preparation of vaccine, also details of disinfection, antisepsis, etc. Dr. A. C. Abbott, recently Assistant in Bacteriology and Hygiene in the Johns Hopkins Hospital in Baltimore, has been appointed First Assistant in the Laboratory of Hygiene, and applications for information or admission should be addressed to him at the University of Pennsylvania. This is the department which was founded through the liberality of Mr. Henry C. Lea and others. It is a valuable acquisition to the University.

The Pennsylvania Hospital. — The Board of Managers of the Pennsylvania Hospital has approved plans for constructing a new wing, which will increase the capacity of the institution by one hundred beds. and will involve the expenditure of some three hundred thousand dollars. It is also contemplated to build a three-story Nurses' Home on the grounds, at a cost of forty thousand dollars, and plans for a new out-patient department are being prepared. Although this is probably the oldest general hospital in this country, and its managers almost without exception members of the Society of Friends, who are celebrated for conservative methods, this hospital is in excellent sanitary condition; has many modern appliances, and is unsurpassed in its results; in fact, it is fully abreast of modern practice in both medicine and surgery. Clinical instruction to medical students has always been a feature of this institution, lectures being delivered on Wednesday and Saturday mornings. It also owns one of the largest medical libraries in the country, which can be used by physicians or students by the payment of a nominal fee each year.

New Hospitals.— A new hospital was opened on North Broad Street on February 1st, known as the Samaritan Hospital, which is a small general hospital under the special care of the Baptist denomination. The Rush Hospital for Consumptives on Pine Street corner of 22d Street, was recently opened, with a view to the special treatment of this unfortunate class, for whom also a cottage hospital at Germantown, in the suburbs of the city, has been in operation for some years.

A Symposium on Influenza was recently held at the College of Physicians by the Philadelphia County Medical Society. Papers were read by Drs. F. P. Henry, H. A. Hare, L. F. Flick, Roland G. Curtin and Charles K. Mills.

A Unique Operation.— Prof. Wm. H. Keen, on the 4th inst., performed an amputation at the hip-joint upon a lady who was suffering with a rapidly-growing sarcoma of the thigh, and who had been sent from Brazil to see what could be done for her relief. What makes the case probably unique in surgical annals, is the fact that she was in the fifth month of pregnancy at the time of operation. The arteries were controlled by Wyeth's method, and scarcely any loss of blood occurred. Last accounts showed entire absence of fever, and patient doing well. A detailed report of this case will be published soon.

The Seventh Annual Report of the State Board of Health and Vital Statistics has just been issued by the Secretary, Benjamin Lee. The prospect of obtaining statutory enactments from the present Legislature in order to place the work of the Board upon a firmer basis, confirm its powers, and increase its usefulness by increasing its pecuniary means, appears to be better than ever before. This is largely due to the fact that the Board did such good work at Johnstown, after the flood in 1889, that Governor Beaver in his Annual Message to the Legislature, January 5, 1891, strongly commended the work of the Board, and urged the Legislature to make increased appropriation. He directed particular attention to the pollution of streams and water-courses, and the problem of the disposal of sewage of densely settled communities. The Board has appointed a Committee to consider the expediency of memorializing Congress on behalf of a National Law to prevent the pollution of streams passing from one State to another, and this subject will probably be discussed at the National Conference of State Boards of Health, which meets next summer in Detroit.

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Miscellany.

LOCAL ANÆSTHESIA.

Hr. C. Scleich, at a recent meeting of the Berlin Medical Society, discussed the subject of local anæsthesia by subcutaneous injections. He recommends that the skin be sprayed with ether before the puncture. Cocaine should be used in weak solutions only; he has performed five laparotomies with a .2 per cent. solution. The strictest antisepsis is necessary. Even solutions of two parts in 10,000 make the skin insensible in the region of the puncture; even water injected into the skin produces anæsthesia. That water acts because it is a chemically foreign body is shown from the fact that a physiological neutral fluid fails to produce similar results. Other solutions which are capable of producing anæsthesia are solutions of sugar, one per cent. solution of methyl violet, one-tenth per cent. solution of morphia, two per cent. solution of bromide of potassium, and two per cent. solution of caffeine.

These latter two solutions he recommends in cases where as much cocaine has already been injected as is deemed safe. In the discussion on this paper Gluck said that he considered that in some cases of similar local anæsthesia the patient was in a condition of hypnosis.

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THERAPEUTIC NOTES.

The Salts of Strontium. — A great deal has recently been written in the French journals on the therapeutic value of strontium. Germain Sée[1] has, noticing that in cases of Bright's disease, digestive troubles were often very much benefited, tried the effect of bromide of strontium in different forms of gastric troubles in doses of from half a drachm to a drachm a day. Different forms of dyspepsia were much benefited by its use. He suggests that the iodide of strontium may with advantage be substituted for the iodide of potassium in cases of heart disease.

Dujardin-Beaumetz[2] has employed the lactate of strontium with very good results in cases of Bright's disease. He attributes this favorable action to the effect of the salts on the digestion.

Creasote in Phthisis. — Somnerbrodt[3] again advises the use of creasote in pulmonary consumption. Five years ago, he published his results with it in a number of cases in which the maximum daily dose was less than eight drops. He is now convinced that it may be given in much larger doses. He reports several cases in which he has obtained very good results by a daily dosage of from a quarter to one drachm. He advises that it be prescribed in gelatine capsules, each containing one and one-half drops in combination with cod liver oil. At the commencement of treatment it may be sometimes necessary for a time to suspend its administration on account of gastric disturbance.

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[1] Sem. Méd., October 28th.

[2] Sem. Méd., November 4th.

[3] Berliner Klin. Woch., No. 13, 1891.

Correspondence.

THE MURAL PAINTINGS AT THE PARIS SCHOOL OF MEDICINE.

Manchester by the Sea, Mass.,
February 12, 1892.

Mr. Editor:— Those who have attended lectures at the School of Medicine, Paris, will remember the beautiful mural paintings, to the right and left of the rostrum in the amphitheatre. The mottoes were: "Ils étanchent le sang consacré a la défense de la patrie," "La bienfaisance du souverain hate leur progrès et récompense leur zèle, "Ils tiennent des dieux les principes qu'ils nous ont transmis." I write to ask if any of your readers know where I can obtain copies of these paintings, which are now *in the past*, as the amphitheatre was destroyed by fire two years ago.

Very truly yours,
W. T. Parker, M.D.

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A SURE CURE FOR EPILEPSY.

We have received the following letter from Michigan:

———, Mich., February 7, 1892.

Boston Medical and Surgical Journal.

Gentleman, Dear Sir: — Will please publish few lines in your journal, and oblige that I have made a discovery and positive cure for Epilepsy. I claim that I can cure any case of Epilepsy, I don't care of how long standing. I have used this remedy now for 8 years in my pratice and for the last 14 months I have made a specacial buisness of it; and have treated a number of cases. I have cases treated and cured by my medicine 8 years ago. And from that time on till to the present. I will give you some cases treated of late, one lady 40 years had fits for 37 years every 2 weeks. She commenced taking my medicine one year today and she never had a fit after she commenced taking my medicence. Another lady 15 years old had fits for 10 years every 2 weeks. She commenced taking my medicine 17 months ago and she never had a fit after she commenced taking my medicence, she took medicine 7 months then stoped it of. As a rule will take 9 month to perfect a perament cure. Which I can tell only after the patience has commenced taking my medicence. I have stoped them of at 6 month etc. Another gentleman 32 years old had fits for 7 years from 3 to 5 times every night. He commenced taking my medicence 14 month ago. And in 3 weeks after he commenced using my medicence the fits was entirely arrested and he never had any symtons of them since. At the time he commenced the treatment, he was almost ready for the Asylum. Another lady 22 years old had fits for 19 years from 3 to 7 times a week, she commenced my treatment 3 months ago, and she is doing all right, had no fits since. Another I am sorry to say a Brother doctor of the east Penn had fits for 13 years. He commenced taking my treatment 5 months ago, and is doing all right. He had a one fit after he commenced taking my medicence. I only had 3 cases of all the patience I treated that had any fits after they commenced taking my medicence. And so on I could tell you of lots of other treated with the same results. I have kept my medicine a secret so far and will yet for a while. I shall make a disclosure in the fortune with the pratice and experience. I had had I came to the conclution to publish it to the profession. And the world. I have so much faith and confidence in my remedy, If any body doubt my cureing effects, I will make a written contract with the patience to cure him or no pay. I know that I can do more good with my remedy then anything else that ever was prescribed in the way, treating Epilepsy. The medicence can only be got directly from me. It will not be sold by druggist.

Yours Truly
Dr. ——— ———.

METEOROLOGICAL RECORD,

For the week ending February 6, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...31	29.93	26	37	15	64	38	51	N.W.	N.W.	12	15	F.	C.	
M.. 1	29.98	33	42	24	61	63	62	W.	W.	12	11	O.	O.	
T.. 2	30.00	36	38	33	65	100	82	N.W.	E.	10	12	O.	N.	.20
W. 3	29.80	33	35	31	95	95	95	N.	N.	10	13	N.	O.	.93
T.. 4	29.96	31	35	27	78	67	72	W.	N.W.	12	10	F.	C.	
F.. 5	30.00	22	29	15	84	73	79	N.W.	N.W.	12	16	C.	O.	
S.. 6	30.29	19	27	10	70	53	64	N.W.	W.	12	9	C.	C.	
☞	29.99	28	35	22	74	71	72			11	12			.16

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 6, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	790	289	11.33	17.82	2.64	.44	3.30
Chicago . . .	1,099,850	—	—	—	—	—	—	—
Philadelphia .	1,046,964	525	181	14.63	15.01	1.90	2.47	8.17
Brooklyn . .	806,343	387	126	13.52	18.20	5.72	—	6.24
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	185	55	9.72	21.06	3.78	.54	2.70
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	125	46	8.80	15.20	.80	3.20	4.00
Cleveland . .	262,000	105	34	11.40	24.70	—	—	3.80
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	98	34	15.30	12.24	2.04	2.04	8.16
Milwaukee . .	240,000	—	—	—	—	—	—	—
Washington .	230,392	125	35	8.00	23.20	—	4.00	1.60
Nashville . .	76,168	17	5	—	11.76	—	—	—
Charleston . .	65,165	34	6	2.94	2.94	—	2.94	—
Portland . . .	36,425	23	5	4.35	26.10	4.35	—	—
Worcester . .	84,655	25	8	24.00	40.00	8.00	—	8.00
Lowell . . .	77,696	53	10	7.56	28.35	—	3.78	—
Fall River . .	74,398	—	—	—	—	—	—	—
Cambridge . .	70,028	20	9	—	10.00	—	—	—
Lynn	55,727	14	10	14.28	28.56	—	7.14	7.14
Lawrence . .	44,654	24	3	8.32	12.48	—	4.16	—
Springfield . .	44,179	15	5	6.66	—	—	—	—
New Bedford .	40,733	—	—	—	—	—	—	—
Salem	30,801	20	6	10.00	—	—	—	—
Chelsea . . .	27,909	15	9	26.66	6.66	6.66	—	20.00
Haverhill . .	27,412	9	2	—	—	—	—	—
Taunton . . .	25,445	7	3	14.28	—	—	—	14.28
Gloucester . .	24,651	9	3	22.22	11.11	—	—	11.11
Newton . . .	24,379	5	2	20.00	—	—	20.00	—
Malden . . .	23,031	8	1	—	12.50	—	—	—
Fitchburg . .	22,037	8	2	—	—	—	—	—
Waltham . .	18,707	7	0	—	28.56	—	—	—
Pittsfield . .	17,281	6	1	—	83.30	—	—	—
Quincy . . .	16,723	5	3	20.00	20.00	—	—	—
Northampton .	14,990	6	2	16.66	33.33	—	—	—
Newburyport .	13,947	3	1	—	—	—	—	—
Medford . . .	11,079	1	0	—	—	—	—	—
Hyde Park . .	10,193	3	2	33.33	—	—	—	—
Peabody . . .	10,158	3	1	—	—	—	—	—

Deaths reported 2,680: under five years of age 899; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 326, acute lung diseases 503, consumption 310, diphtheria and croup 131, scarlet fever 71, typhoid fever 35, diarrhœal diseases 22, whooping-cough 19, cerebro-spinal meningitis 15, erysipelas 10, puerperal fever 3.

From diarrhœal diseases New York 11, Philadelphia 5, Lowell 2, Cincinnati, Cleveland, Washington and Worcester 1 each. From whooping-cough New York 7, Boston and Pittsburgh 3 each, Philadelphia and Cleveland 2 each, Gloucester and Hyde Park 1 each. From cerebro-spinal meningitis New York and Philadelphia 3 each, Brooklyn and Washington 2 each, Worcester, Salem, Taunton, Gloucester and Quincy 1 each. From erysipelas New York 4, Cleveland 2, Brooklyn, Boston, Springfield and Northampton 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending January 23d, the death-rate was 35.4. Deaths reported 6,884: acute diseases of the respiratory organs (London) 1,465, whooping-cough 254, measles 124, diarrhœa 41, diphtheria 38, scarlet fever 32, fever 26, small-pox (Liverpool) 3.

The death-rates ranged from 17.3 in Huddersfield to 60.9 in Brighton; Birmingham 27.2, Bradford 20.5, Cardiff 24.5, Gateshead 21.2, Hull 19.1, Leeds 20.3, Leicester 19.1, Liverpool 40.0, London 46.0, Manchester 23.9, Newcastle-on-Tyne 31.2, Nottingham 19.4, Sheffield 21.8, Sunderland 23.6, West Ham 30.5.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending January 30th, the death-rate was 32.1. Deaths reported 6,275: acute diseases of the respiratory organs (London) 1,192, whooping-cough 241, measles 92, diphtheria 39, diarrhœa 34, fever 25, scarlet fever 24.

The death-rates ranged from 18.8 in Sunderland to 47.2 in Croydon; Birmingham 19.8, Bradford 20.7, Hull 23.9, Leeds 21.8, Liecester 21.2, Liverpool 33.1, London 41.0, Manchester 27.6, Newcastle-on-Tyne 22.8, Nottingham 26.6, Portsmouth 32.5, Sheffield 20.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 6, 1892, TO FEBRUARY 12, 1892.

February 5, 1892. The following named officers, having been found by Army Retiring Boards, incapacitated for active service on account of disability incident to the service, are by direction of the President, retired from active service this date, under the provision of Section 1251, Revised Statutes: Captain Henry G. Burton, assistant surgeon, Captain Arthur W. Taylor, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 13, 1892.

P. H. Bryant, assistant surgeon, ordered to Naval Hospital, Philadelphia, Pa.

H. T. Percy, passed assistant surgeon, detached from C. S. S. "Patterson" and granted leave for two months.

C. J. Decker, passed assistant surgeon, detached from Naval Hospital, Philadelphia, and to C. S. S. "Patterson."

John F. Urie, passed assistant surgeon, ordered to Naval Hospital, Portsmouth, N. H.

Howard Wells, surgeon, detached from Naval Hospital, Portsmouth, and wait orders.

Joseph A. Guthrie, assistant surgeon, ordered to Naval Station, Port Royal, S. C.

L. L. Young, assistant surgeon, detached from Naval Station, Port Royal, S. C., and to the Receiving-ship "Independence."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING FEBRUARY 6, 1892.

Purviance, George, surgeon. Detailed as Chairman, Board of Examiners. February 3, 1892.

Hutton, W. H. H., surgeon. Detailed as member Board of Examiners. February 3, 1892.

Sawtelle, H. W., surgeon. Granted leave of absence for ten days. January 30, 1892.

Irwin, Fairfax, surgeon. Granted leave of absence for fourteen days. January 26, 1892.

Mead, F. W., surgeon. Detailed as recorder, Board of Examiners. February 3, 1892.

Carter, H. R, passed assistant surgeon. Granted leave of absence for seven days. January 20, 1892.

Carmichael, D. A., passed assistant surgeon. When relieved to proceed to Port Townsend, Wash., and assume command of Service. January 23, 1892.

Glennan, A. H., passed assistant surgeon. When relieved to proceed to South Atlantic Quarantine and assume command of Station. January 23, 1892.

White, J. H., passed assistant surgeon. Relieved from duty at South Atlantic Quarantine; to assume command of Service at Savannah, Ga January 20, 1892.

Carrington, P. M., passed assistant surgeon. When relieved to proceed to Evansville, Ind., and assume command of the Service. January 20, 1892.

Magruder, G. M, passed assistant surgeon. Relieved from duty at New Orleans, La.; to assume command of Service at Portland, Oregon. January 23, 1892.

Vaughan, G. T., assistant surgeon. When relieved to report to the Supervising Surgeon-General. January 20, 1892.

Cobb, J. O., assistant surgeon. Ordered to examination for promotion. February 3, 1892.

Stoner J. B., assistant surgeon. Ordered to examination for promotion. February 3, 1892.

Condict, A. W., assistant surgeon. When relieved to proceed to Wilmington, N. C., and assume command of the Service. January 23, 1892. Ordered to examination for promotion. February 3, 1892.

Gardner, C. H., assistant surgeon. Assigned to temporary duty at Baltimore, Md. January 27, 1892.

PROMOTIONS.

Carter, H. R., surgeon. Commissioned by the President as surgeon. January 28, 1892.

Vaughan, G. T., passed assistant surgeon. Commissioned by the President as passed assistant surgeon. February 6, 1892.

APPOINTMENT.

Gardner, C. H., of Maryland. Commissioned by the President as assistant surgeon. January 28, 1892.

AN ARMY MEDICAL BOARD.

An Army Medical Board will be in session in New York City, N. Y., during April, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before April 1, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C.

C. Sutherland, *Surgeon-General U. S. Army.*

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, February 22, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. T. M. Rotch: "*Improved Methods of Modifying Milk for Infant Feeding.*"

Dr. E. Reynolds: "Rapid Methods of Repairing the Pelvic Floor in Primary and Secondary Operations."

G. G. Sears, M.D., *Secretary.*

Medical Association of Georgia. — The Forty-third Annual Session will meet in Columbus, Ga., on April 20, 21, 22, 1892.

Dan H. Howell, M.D., *Secretary*, Atlanta, Ga.
G. W. Mulligan, *President*, Washington, Ga.

BOOKS AND PAMPHLETS RECEIVED.

Poliomyelitis with Perineuritis. Tumor of the Brain. By J. T. Eskridge, M.D., Denver, Col. Reprints. 1891, 1892.

Essentials of Medical Electricity. By D. D. Stewart, M.D., and E. S. Lawrence, M.D. Philadelphia: W. B. Saunders. 1892.

Stricture of the Rectum. A Study of One Hundred and Thirty-eight Cases. Second edition. By Chas. B. Kelsey, M.D. New York. 1892.

Syphilis in Ancient and Prehistoric Times. By Dr. F. Buret, Paris. Translated by A H. Ohmann-Dumesnil, M.D. Volume I. Philadelphia: F. A. Davis. 1891.

A Treatise on Diseases of the Lungs and Pleura. By the late Wilson Fox, M.D., F.R.S. Edited by Sidney Coupland, M.D., F.R.C.P. Philadelphia: P. Blakiston, Son & Co. 1892.

Consumption: How to Prevent it and How to Live with it. By N. S. Davis, Jr., A.M., M.D., Professor of Principles and Practice of Medicine, Chicago Medical College, etc. Philadelphia: F. A. Davis. 1891.

Addresses.

THE OBJECTS, PLANS AND NEEDS OF THE LABORATORY OF HYGIENE.[1]

Extracts from an Address Delivered at the Opening of the Laboratory of the University of Pennsylvania, February 22, 1892.

by JOHN S. BILLINGS, M.D.

From those who have preceded me you have heard of the origin of this laboratory, and something of the wishes, hopes, and expectations of the public with regard to it, as indicated by the donor, and by representatives of the University and the State.

You see clearly that this magnificent gift imposes a heavy responsibility upon those who are charged with the duty of managing it, and of seeing that it is so used as to meet the many and various demands which may rightfully be made upon it: and, in attempting to explain to you briefly what the laboratory now is, and why it is as it is, I come before you oppressed with a keen sense of this responsibility, which is not lessened but rather increased by the fact that I feel that I am speaking to friendly critics.

For this new building, with its equipment and resources, is but an implement — a piece of mechanism — which may be used to shape products of vast importance, not only to the world as it is, but to generations not yet conceived; or which, on the other hand, may be so used as to be of little more importance to humanity than the toy tool chest or the doll's house of a child.

What this use shall be depends upon the force and skill applied to it; upon the materials submitted to it; upon the ability of those who guide it to foresee the direction in which at each moment of time it is best to move it; upon the knowledge and patience of those who are working in it; and, when all these are at their best, the results must still depend upon the decrees of Divine Providence, upon circumstances which no man can fully foresee, and which, therefore, no man can, with certainty, control to the end desired.

The position of laboratories in their relations to education, to science, to technology, and to the executive departments of governments and the welfare of the public, has become a very notable one within the last fifty years. A laboratory — or, as it was called in old times, an "elaboratory" — is, as its name indicates, a place for labor, for work — and especially for skilled labor, in the making of delicate and difficult observations and experiments; for analysis, to determine composition and causes; for synthesis, to determine the results of new combinations; for solving old problems, and for stating new ones. It is not a museum, or a store-room, or a show place, nor does this kind of a laboratory offer much for sale, except opportunity.

Only an opportunity — just a few possibilities, offered to the man who desires knowledge, who wants to see, and touch, and try for himself. Yet this offer of such an opportunity is what distinguishes it from those institutions established for the benefit of individuals.

The ideal laboratory of the alchemist or philosopher of by-gone days was a mysterious, dusky place, the operations in which were kept a profound secret, and which thus gained in repute what they could not have obtained by publicity and free criticism.

Laboratories planned and fitted for public use, offering to any one who is able and willing to pay a moderate fee, and to submit to a few simple regulations, not only opportunities for learning the details of the processes carried on therein, but also facilities and means for making special research as he could only obtain otherwise at great expense and loss of time; such laboratories, I say, are all of comparatively recent date.

It is not yet twenty years since the first separate institution of this kind was established for hygiene — and even now there are not more than a dozen such laboratories, specially built and fitted for their purpose, in existence throughout the world. Of these, the best known is probably that of the University of Munich, under the direction of Professor Pettenkofer, while the largest is that of Berlin.

This laboratory is the first structure of its kind erected in the United States, and it therefore opens a comparatively new field of work in this country. What is the nature of this field, and what are its boundaries? The object of hygiene is to preserve and to improve health, and there are few matters affecting the physical, intellectual, emotional, and moral condition of man as an individual, or of men in communities, that may not come within the scope of its investigations. The destruction or avoidance of causes of disease is but a part of its objects — it is at least equally concerned with the means of making a man better fitted to resist these causes. "That kind of health," says Montesquieu, "which can be preserved only by a careful and constant regulation of diet is but a tedious disease." Disease, like health, is a vague term, including widely different and often very complex conditions, processes, and results, which must be observed, classified and described in such a way that different men, widely separated in space and time, may know that they are seeing the same things, and thus may have the benefit of each other's experience.

In its scientific aspects, then — those which relate to definite and precise knowledge — hygiene rests largely on physiology and pathology, the third leg of the tripod being formed by vital statistics; while, in its practical aspects, it must rest on chemistry, physics, and the data of sociology and politics. . . .

The physician deals with sick men, and his first question is, What is the matter with this person? That is, what group of symptoms does he present, and to what derangement of his mechanism are these due? The hygienist deals with two sets of problems — the first relating to men who are not sick, and how their health and vital resistance-power are to be not only preserved but improved and strengthened; the second relating to sick houses, feverish blocks or wards, infected localities — where the first questions to be solved are, What are the causes of this condition of things? how have they found entrance? are they still acting?

In the investigation of causes he must consider not only the immediate or exciting, but also the remote or predisposing; not only those which are preventable, but those which, with our present knowledge, are unpreventable; and thus it is that heredity, race, local meteorology, occupation, and many other circumstances must be studied by him, as well as the effects of food, clothing, habitation, poisons and viruses. . . .

The recent advances in our knowledge as to the action of certain micro-organisms in the production of disease in animals and man have been largely made by laboratory methods, and indicate clearly that the study of bacteria and microzoa, and of their development, products, and effects, must be an essential part of the work of an hygienic laboratory, which should provide the peculiar arrangements and apparatus which are required for this sort of work. In fact, several so-called hygienic laboratories are simply bacteriologic laboratories, the interest in this particular branch of investigation having, for the time being, overshadowed all others.

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[1] From advance sheets of the Medical News, February 27, 1892.

Our laboratory, however, must provide also the means for chemic investigations of air, water, food, sewage, secretions, and excretions, and the products of bacterial growth; for testing the effects of gases, alkaloids, and albumoses of various kinds upon the animal organism; for investigations in the domain of physics pertaining to heating, ventilation, house-drainage, clothing, soils, drainage, etc. . . .

Just at present, research is being specially directed to certain minute animal organisms — the microzoa — such as are found in the blood in malaria and in the skin in certain diseases, and to immunity, especially to that immunity which may be artifically produced.

Experimental investigation is a slow process, and very uncertain in its results.

An experiment may be conceived which seems as if it would give important results. The experiment itself would require only a few moments or a few hours if all the apparatus were ready to produce the required conditions, and to record in terms of weight and measure the results obtained. But to make this apparatus in the best form, and to provide the means of recording, may take a year or more, and in making this preparation a dozen problems will come up to be solved by other experiments. You are pretty sure to discover something new, but by no means sure that it will be what you began to seek. Every discovery opens new questions and indicates new experiments, and the precise shape in which the work presents itself varies with place and season.

We cannot foresee precisely the demands which will be made upon us, or which we shall make upon ourselves, but we do know that we shall want some large rooms in which a dozen or twenty men can be at one time taught how to investigate, working under the eye of an instructor; and also a number of small rooms, each fitted for the work of one or two men who have attained a certain degree of skill, and are engaged in original research. In all of these rooms we shall at times need to use microscopes, gas-heating and steam; there will be vapors and fumes produced; there will be delicate instruments scattered about, and the rooms must, therefore, be light, have abundance of gas, steam, and water, hoods and flues for conveying away fumes, and they must have plenty of fresh air without dust.

Many of the things that will be seen through the microscopes will be rapidly changing form, and we shall need pictures as well as descriptions of their different shapes.

The most useful drawings for our purposes are those made by sunlight, and, therefore, we want photo-micrographic rooms.

We shall wish to test the merits of various articles of house-equipment, such as different patterns of steam radiators, of traps, of sinks, and closets, etc., and for this purpose we must have places where they can be fitted and put into use.

We must know what other investigators in other laboratories, and many places besides laboratories, have done and discovered, that time and effort may not be wasted. We must, therefore, have the books and journals in which these are recorded, which are already many, and coming rapidly. A small library and reading-room is therefore essential.

Much of the apparatus to be used must be either made or specially fitted and adjusted on the spot to meet special indications which it is impossible to foresee, and, therefore, we need a large workshop, with tools and appliances for working in wood, glass and metal, and with power. . . .

The chief object of the existence of this building is to fit a certain number of men from all parts of the country to investigate and solve the problems connected with the securing of the best health and vigor among our people.

We hope, also, that some increase of knowledge will be made here by the workers in the laboratory itself; but the main point to be kept in view is to provide well-trained, scientific, and practical men for other fields of labor. Dr. Mitchell has said that the true rate of advance in medicine is not to be tested by the work of single men, but by what the country doctor is. So, also — and even more so — advance in practical sanitation is not to be measured by laboratory records, but by what health officers and sanitary engineers are able to accomplish.

Even now we *know* much more than we *do*, and the skilled sanitarian too often finds himself in the position of the unhappy daughter of Priam and Hecuba, who could foretell, but to no purpose.

This laboratory is fortunate in being closely connected with, and in the immediate vicinity of, a great medical school, and of great hospitals. As was said before, one of the essential foundations of scientific knowledge of the causes of disease is minute and accurate diagnosis and pathology, and we are, therefore, in constant need of the best knowledge of leaders in these branches of medical science. The hospital is filled with specimens of the results of such causes, acting on the human body — from one point of view, Nature's experiments with poisons cunningly elaborated in the tissues of the body, or with viruses coming from without, upon blood and bone, muscle and brain. Much of the work of this new department will be connected with the results of these experiments.

The laboratory is also fortunate in being located in a great manufacturing city, where the effects of different occupations, of trades dangerous or offensive by reason of dusts, or of vapors, or of waste products, can be readily observed and the materials for study obtained. There is an immense field for a sanitary clinic here, and in the habitations, the streets, the water-supply, and the sewers of Philadelphia.

These clinics, however, cannot, as a rule, be reported for the press, either lay or medical, since to do so would, to a great extent, defeat their object; the great majority of sick houses and manufactories must be considered as strictly private patients, and their affairs held as confidential. In the case of public institutions. or of public nuisances, a somewhat different rule may apply.

Practical hygiene is to play an important part in municipal government, to secure the best form of which is now one of the most urgent questions of the day. Many of the questions to be decided by city officials as to water-supplies, sewage disposal, etc., require expert knowledge to answer.

Of course, the subject of hygiene and the work of a university department devoted to the increase and diffusion of knowledge in sanitary science extends far beyond the experiments and demonstrations for which this laboratory is specifically fitted.

Bacteriology, chemistry, pathology, physics, and medical and vital statistics give us the foundation, but sociology and jurisprudence must also be studied in their relations to sanitation to obtain the best results.

It is in and to the home and the workshop that these results are to be applied, and he who aspires to be his brother's keeper, must know how his brother lives.

Labor questions, education questions, maritime and inter-state commerce questions, and methods of municipal finance and government, are all intimately connected with matters of personal and public hygiene, and economic consequences, as well as health, must be considered in the advice and regulations of the sanitarian.

I count it as fortunate, therefore, that there is a law school and a school of finance and political economy in this University to which the Department of Hygiene can look for advice and friendly criticism when these are needed, as they surely will be.

And now a very few words as to the needs of the laboratory. First of all it needs men — men thirsting for knowledge, and fitted by previous training and education to come here and acquire that knowledge, not merely the knowledge that exists in books or that the teachers in this laboratory may possess, but that which is yet unknown, the weight of that which no one has yet put in the balance — the shape and size, and powers for good or evil of things the existence of which has not yet been demonstrated — men who will patiently and earnestly seek the answers to the questions, "what?" "when?" and "how?" in the hope that thus they may by-and-by obtain some light upon the more difficult problems of "whence?" and "whither?" even if they may never be able to answer "why?"

There are not many such young men whose tastes will be in the direction of these lines of research, and of these there will be very few who will have the means to support themselves while engaged in the work. We need, therefore, the means to help them in the shape of half-a-dozen fellowships, paying about five hundred dollars a year each, and granted only to those who give satisfactory evidence of capacity and zeal.

The second thing we want is a demand on the part of the public for really skilled, well-trained sanitary investigators and officials, such as we hope to send out from here; we want a market for our product; we want the legislators of this and other States, and of our rapidly-growing municipalities, to be educated to appreciate the importance and practical value of such health officials, and to give the best of them employment.

Thirdly, the laboratory wants the coöperation and assistance of sanitary authorities and inspectors, and especially those of this city and State.

It needs to know from time to time what they are interested in and are working at, to have the opportunity of showing to its students cases of special interest — sick houses, localized epidemics, special forms of nuisance.

And, on the same principle, and for the same reasons, it desires to have its attention called to special methods of heating, ventilating, and draining buildings, and especially public buildings, such as schools, hospitals, prisons, churches and theatres, and to matters connected with the hygiene of manufacturing establishments and special occupations, methods of disposal of offensive or dangerous waste-products, of protecting workmen against dust, gases, etc.

In short, we want to know how these things are managed by the men who have a practical interest in them; and if, in our turn, we can suggest improvements, we shall be glad to do so.

Fourth, the laboratory wants a reference library as complete as it can be made, and always up to date. Many of the books and journals required must be purchased, and for this purpose a special fund is needed, but many of the works required can only be obtained by gift.

Thus, we want all the reports of boards of health — State and municipal — of municipal engineers, water-works and water commissioners, park commissioners, etc.

We want the catalogues and circulars of all manufacturers of heating and ventilating apparatus, of plumbers' supplies and house fixtures, of electric and gas fixtures, of machinery and apparatus connected with water-supply and sewage-disposal.

We want copies of plans and specifications of large buildings of all kinds.

And these things can only be obtained through the aid and good-will of manufacturers, engineers, architects and sanitarians all over the country; and this aid I venture to ask, feeling sure it will be granted by those who know what is wanted.

I will mention but one more special want to-day, and that is of means for the proper publication of illustrated reports and accounts of the work done in the laboratory.

In the meantime we must be patient, and not too eager to touch the fruit of the blossom that is not yet blown.

In the chambers of this laboratory are to be explored and tested some of the strangest and subtlest of the manifestations of force which surround and are within us.

Here we are to deal with problems of life and death, to seek to unravel some of the webs which bind and choke our children, and which make our strong men helpless, that we may for a time, at least, put these trammels aside or sever them.

I dare not attempt to promise or to prophesy as to the work which will be done here, or as to the future of this new department of the University.

Those who are to be connected with it may not do the best that can be done, but at least they must do the best they can, and, if needful, give place to others who can do better.

Those to whom we owe this laboratory and its equipment and endowment, have been generous and wise in their generosity, which has been in accord with the teaching of the son of Sirach, "Having grace in the sight of every man living, and detained not for the dead."

Death comes by many paths to one or other of the three porches of the microcosm through which he enters, and brings his poppy flowers to all doors soon or late; but if we knew that which we might know, and did that which we might do, he would be preceded by fewer heralds of suffering, and would arrive only when we were ready to be "hushed in the infinite dusk."

If "ye shall know the truth, the truth shall set you free"— not free from change, or from grief, or from the final passage beyond the veil, but free from causeless fears, from unnecessary pain, from useless labor; and this is a part of that wisdom "which passeth and goeth through all things," and is "the brightness of the everlasting light, the unspotted mirror of the power of God."

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ADDRESS

Delivered at the Opening of the Laboratory of Hygiene of the University of Pennsylvania, February 22, 1892.

BY BENJAMIN LEE, A.M., M.D., PH.D.,
Secretary of the State Board of Health of Pennsylvania.

MR. PROVOST, LADIES AND GENTLEMEN: — I trust there is no one present on this memorial day and this auspicious occasion whose bosom does not swell with patriotic pride at the thought that he is an American citizen.

Recalling, as we are wont, the virtues of him whom, above all others, we are accustomed to regard as the founder of our liberties, let it be a part of our grateful observance to sum up the blessings which flow from them. And that we may the better appreciate them, let us compare the wretched lot of the denizens of cities of the old world, groaning under the iron heel of despotism, with our own more highly favored circumstances. The tyrannical rulers of those downtrodden people actually presume to interfere with their meats and drinks, — forbidding them to quench their thirst with water enriched by the sewage of cities, hallowed by the infusion of the remains of their dead ancestors, or delicately tinted with the drainage of coal mines; or to refresh themselves with beer rendered aromatic and enlivening by cocculus indicus and strychnine, or wine manufactured from the juicy apple and the generous turnip, or tea composed of rotten leaves and catechu and colored with verdigris, or coffee innocent of Java and Mocha, or chocolate in which the offensive cocoa-butter has been entirely replaced with tallow. They are not permitted to eat the flesh of tuberculous cattle and trichinous swine, while we are freely allowed to feast on those which have been condemned for their markets. Even the little children are forbidden the delights of sucking candy brilliant with arsenic, or munching buns beautified with chrome yellow. The very air which they breathe is deprived of the fragrant and nutritious elements which we enjoy in ours by the removal of manure and other putrefactive substances from the streets before they have had time to pulverize or decompose.

If they desire to ride in public conveyances, they are compelled to obsequiously sit, instead of having the opportunity of athletic exercise and muscular development by hanging on to straps suspended from the roof of the vehicle; or if, perchance, they prefer their own equipages, they have no escape from the dull monotony of smooth and noiseless pavements, so different from our charming variety of cobble-stone and car-track, of hillock and hollow. Thus these unfortunates are hedged in on every side by onerous ordinances and petty infringements of their liberties. When we add the humiliating fact that those who govern their cities and inflict these burdens upon them are men of their own race and nation, instead of being of alien birth or parentage, what is needed to complete the picture of their misery or to demonstrate the immense superiority of our free institutions? As a result of the admirable training which we receive from the foreigners in authority over us, we have acquired to a distinguished degree the divine virtue of patience; so that an American citizen is recognized at once all over Europe by the lamb-like way in which he submits to physical inconviences and pecuniary impositions.

But lest this hurried *résumé* of our causes for exultation should make us too vain-glorious, I would ask your attention for a moment to a feature of the republican form of government which is, perhaps, less encouraging.

It has been said in regard to our legislative bodies, that, as a fountain cannot rise above its source, so we cannot expect in our legislatures a higher degree of intelligence and education than the average of that possessed by all classes of the population, whom they represent, by whom they are elevated to office, and whom they fear to offend.

It follows from this that legislation of what may be termed the higher order, which recognizes the arts and sciences, and aims to lift the people to a higher plane of culture and civilization, and which is founded on the most recent revelations of science, is not to be expected of our municipal and State legislators. And, indeed, so true is this of our own State, that a clause exists in the constitution forbidding the outlay of the public funds for any such purposes. Hence, if institutions of learning of a high grade or devoted to specific objects are to exist among us, they must owe their origin, and to a great extent their support, to the public spirit and generosity of private citizens. Perhaps this is not an unmixed evil. Perhaps it is well that in the mad haste to get rich quickly, which characterizes our people, there should be a constantly present condition which evokes brilliant examples of public giving as contrasted with individual grasping. Certainly magnificent instances of such liberality exist all over our broad land, and, perhaps, nowhere have more frequent benefactions of this kind increased the opportunities of a great institution of learning, than have of late years been poured into the lap of the venerable University who has called us together to-day to rejoice with her over the reception of her latest gift, and the opening of the newest and loveliest flower in her coronal.

At a regular meeting of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania, held November 12 and 13, 1891, a communication was received from the trustees of this University announcing the early opening of its new Laboratory of Hygiene, and presenting a brief curriculum of its proposed line of instruction; whereupon the following resolutions were adopted:

"*Resolved*, That this Board has received with sincere satisfaction the formal announcement of the approaching opening of the Laboratory of Hygiene of the University of Pennsylvania, considering that this event marks an era in the progress, not of science only, but of civilization in this State.

"*Resolved*, That the secretary be instructed to communicate with Dr. William Pepper, Provost of the University, and with Dr. John S. Billings, Director of the Laboratory of Hygiene, suggesting a conference for the purpose of formulating a plan by which this Board may avail itself practically of the facilities to be afforded by the laboratory for the investigation of disease, and of the means for its prevention, for the analysis of foods, water and other beverages, and for bacteriological studies.

"*Resolved*, That in a definite co-operation between the University and the State Board of Health in the prosecution of such researches, this Board recognizes an opportunity, not only for mutual aid, but for advantage of the greatest moment to the entire Commonwealth."

In accordance with the above resolutions, such a conference has been held, and to me has been assigned the duty of briefly stating the conclusions which were reached, premising, however, that they have not as yet been submitted to the trustees, and may be to some extent modified before either body is called upon to consider them.

The necessity of a Laboratory of Hygiene to the State Board of Health has been urgently felt, and arises out of the duties imposed upon the latter by Section 5 of the Act of Assembly establishing it, which reads as follows:

"The State Board of Health and Vital Statistics shall have the general supervision of the health and lives of the citizens of the Commonwealth, and shall especially study its vital statistics. It shall make sanitary investigations and inquiries respecting the causes of disease, and especially epidemic diseases, including those of domestic animals, the sources of mortality, and the effects of localities, employment, conditions, habits, food, beverages and medicines on the health of the people. It shall also disseminate information upon these and similar subjects among the people. It shall, when required by the governor or the legislature, and at such other times as it deems important, institute sanitary inspections of public institutions or places throughout the State."

Now, to carry out in any adequate degree, the purposes of the law with regard to investigating the causes of disease, and the effects of foods, beverages and medicines on the health of the people, two things, among others, are absolutely essential: first, that the Board should have means and opportunities for making or procuring chemical analyses; and secondly, that it should have means and opportunities for prosecuting what are now known as bacteriological examinations — the study of the germs of disease. And, it goes without saying, that where the interests of the health and lives of five million people are concerned, these means and opportunities should be on a generous scale, and should conform to the most recent developments of scientific hygienic research, both in this country and in Europe. It does not at all meet the intention and requirements of the statute, that the Secretary of the Board should spend a few cents on test-tubes and chemicals, or press his old Dolland microscope, handed down from a previous generation, into the service of the State. Nor, is it fitting that this great Commonwealth with its millions of revenue, should be depending, as it has done, I say it with burning cheeks, on the charity of private chemists, who have, in a spirit of generous patriotism, placed their services at the disposal of the Board in order to enable it, in some slight degree, to meet the claims that are constantly and properly made upon it, for the analysis of suspected waters and foods. It is hoped, therefore, that the trustees will see their way clear to allowing the Board to refer applications of this kind to the laboratory for investigation. The Board, for its part, will make every effort to obtain from the legislature a reasonable appropriation for such purposes, distinct from its general appropriation, which will enable it, to meet at least, the cost of all work done for the State.

Further, Section 9, of the Act creating the Board, instructs it, "from time to time, to engage suitable persons to render sanitary service or to make or supervise practical and scientific investigations and examinations requiring expert skill, and to prepare plans and reports relative thereto." Observe the phrases: "suitable persons," "expert skill." Heretofore the Board has been compelled to call to its aid for these objects simply medical men, intelligent, educated, sound practitioners, but without that special training and equipment which would render them "suitable persons" in any strict, technical, construction of the expression, or would furnish them with "expert skill." Here, again, the laboratory will prove the right hand of the Board, giving just that instruction which a sanitary inspector needs to fit him for his special work. And, on its side, it will be the object of the Board to pursue more persistently even than it has in the past, its purpose of obtaining a thorough sanitary organization of the State under legislative sanction and compulsion, the result of which will be to create a constantly increasing demand for just such trained practical sanitarians as this school will graduate. In this view of the case it might be the part of wisdom for you, gentlemen, trustees, to place a certain number of scholarships at the disposal of the Board.

Finally, it is desirable that publicity should be given to the important work which will be carried on in this institute, which, I risk nothing in saying, after a careful inspection, and after comparison with other similar laboratories, will be far in advance of any in this country, and the peer of any abroad; it is highly desirable, I say, that this work should be frequently brought to the notice of the legislature, the medical profession and the public; and I therefore suggest that its director present a stated report, quarterly, or at such interval as may be deemed expedient, to the State Board of Health, of all investigations here prosecuted directly in the interest of the public health, which report shall form a portion of the annual report of the Board, to be transmitted to the governor, and of which a certain number of reprints shall be furnished to the trustees for general distribution, as well as for preservation in the archives and various libraries of the University.

The edifice whose inauguration has drawn our willing feet hitherward, ladies and gentlemen, is a temple of Hygiea in a truer sense than those fair structures whose marbles flashed back the morning light on the hills of Greece and Rome.

It is in honor of the "sweet, smiling Goddess of Health" that we have met.

The ancients were right in making the divinity whose especial care was the bestowment and maintenance of health, a feminine conception; since woman, as the wife, the mother, the nurse, has for her special function that daily ministry to the bodily welfare of husband and of offspring, that constant presence in and care of the home which are the two essentials to health in the individual and in the family. Her embodiment must needs have been youthful, as presenting ever to the mind of the entranced beholder that period of life when a blood unvitiated by vice or excess courses through a frame unmarred by violence or exposure, and colors a cheek unstained by sin. Purity must look forth from her eyes and truth sit enthroned on her brow, for unbridled passion and soul-torturing deceit are alike inimical to perfect health. Her form must be lithe, vigorous and well nourished, but not redundant, as warning her devotees that neither asceticism on the one hand, nor gluttony or voluptuousness on the other, are allowable in her worship. Cheerfulness must radiate from her every feature, for gloom and despondency are the recognized foes of sanity, whether of body or mind; and over all, pervading expression of face or pose of limb, must be that indescribable charm of gentleness, as teaching her votaries that in the mutual interchange of kindly sentiment and act, they shall greatly promote the common health and the common weal. And so has the charming inspiration come down to us, immortalized by the sculptor's cunning hand, — a frank and joyous maiden, full of tender grace, robed in chaste and flowing vestment. The fabled daughter of Æsculapius, her temple ever nestled under the shadow of his loftier fane, as does that which we dedicate to-day, and her lovely image was sometimes seen in the same shrine even, side by side with his severer figure.

May I be pardoned for appropriating to her praise the beautiful sonnet of America's most American poet, although addressed by him to a sister divinity whom also we glorify on this national anniversary?

> " Who cometh over the hills,
> Her garments with morning sweet,
> The dance of a thousand rills
> Making music before her feet?
> Her presence freshens the air,
> Sunshine steals light from her face,
> The leaden footsteps of care
> Leap to the tune of her pace.
> Fairness of all that is fair,
> Grace at the heart of all Grace!
> Sweet'ner of hut and of hall,
> Bringer of life out of naught,
> Hygiea, oh, fairest of all
> The daughters of Time and Thought! "

Original Articles.

THE CARE OF WOMEN IN PREGNANCY.[1]

BY CHARLES M. GREEN, M.D.

It is probably true that the great majority of pregnant women are not seen by their physician professionally until he is summoned to attend them in labor. If serious complications arise during the pregnancy, such as excessive nausea and vomiting, uterine hæmorrhage, unusual pain or convulsions, the doctor is necessarily summoned; but the minor ills and discomforts are endured in silence, and no advice is taken except that of relatives and neighbors, who love so well to fill the ears of the young gravida with accounts of their own experiences. In other words, in the great majority of cases, no attention is paid to the hygiene of pregnancy, and the woman arrives at term in good, bad or indifferent condition, as the case may be.

The reasons for this unsatisfactory state of things are not far to seek. Many women believe that pregnancy is a more or less pathological process, and assume that its ailments must be borne as a necessary concomitant of childbearing. They do not know that most of the ills of gestation are preventable, or largely remediable, by competent medical supervision and advice, and that so far from being pathological, pregnancy is indeed a physiological process, except in occasional instances. Again, probably a large majority of women are ignorant of the fundamental laws of health, and, while perhaps seldom very sick, are seldom quite well. When, in such women, pregnancy supervenes, it is not surprising that it is often attended with pathological conditions. To ignorance, then, both of the ways of correct living and of the advantages of proper advice during pregnancy, must be ascribed largely the unsatisfactory condition in which many women are found when labor overtakes them.

Another reason for the lack of medical supervision during pregnancy is the attendant expense. The great majority of women are attended in labor by contract, so to speak; that is to say, they expect to pay a certain definite fee, usually a small, inadequate one, which shall cover the doctor's attendance during the labor and his subsequent visits during the convalescence. If the woman desires, or feels that she needs, to consult her physician during her pregnancy, she usually seems to take it for granted that advice at such times should involve no additional fees. It is not surprising that for the very small fees for obstetric attendance that obtain in most suburban and rural districts, medical men should be sometimes unwilling to extend their advice over the pregnancy as well as to take charge of the labor and convalescence. On the other hand, most women are unable or unwilling to pay fees for advice on matters relating to their pregnancy.

For one or more of these reasons, to repeat my original statement, the great majority of pregnant women receive no medical advice or supervision. I believe this to be a misfortune, and a detriment to the best interests of the race; and it is the object of this paper to point out the importance, necessity and advantages of proper supervision of pregnancy, how in my opinion it should be exercised, and how the obstacles in its way can be removed.

There is, supposedly, no question but that pregnancy and parturition ought to be, and were in the divine plan intended to be, physiological processes: that in a large proportion of cases they are not so, a somewhat extended experience leads me to believe. Making due allowance for the congenital and acquired defects of general or local character which are certain to make these processes pathological, the fact still remains, in my judgment, that, in a great majority of cases, pregnancy and labor can be brought quite within physiological and normal limits. If this opinion is true, there is no necessity of dwelling on the importance of adopting such measures as will lead to this most desirable end.

The true object of modern medical science is to do away with the necessity of medical art: in other words, the aim of the true physician is to make the further exercise of his profession useless. While the force of this statement is admitted in general, it has not seemed to me that the extent to which it is applicable in obstetric medicine is fully realized. I believe that, accepting the existing states and conditions in which women of the present day are found, very much can be done by competent supervision during pregnancy to bring labor and puerperal convalescence quite near to normal, physiological bounds; whereas experience has abundantly convinced me that to the lack or inadequacy of such supervision much unnecessary suffering and disaster are due. But to relieve myself of the probable criticism that my expectations of preventive medicine are altogether utopian, let me hasten to add that whatever may be the possibilities of prevention in the field of epidemiology and general medicine by measures of public and private hygiene, the day is doubtless far distant when the services of obstetric medicine and surgery will be found useless.

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[1] Read before the Boston Society for Medical Improvement, December 28, 1891.

Supposing the obstacles in the way of medical supervision of pregnancy, — namely, ignorance of its importance and necessity on the part of the patient, and the question of expense on the part of patient and doctor, — can be set aside, let us consider what can be done for the welfare of the young pregnant woman and her prospective offspring, when free and full opportunities for obtaining medical advice are open to her. What are the respective duties of doctor and patient in the premises? Suppose the woman to have passed over one or two menstrual periods, and in the absence of other probable causes of amenorrhœa presumes herself to be pregnant: she consults her physician. By a few simple questions he satisfies himself that presumably she is pregnant: is it his duty to proceed to confirm his presumptive diagnosis by a physical examination? In most cases, certainly not. If important plans, as of journeys abroad, of changes of residence or manner of living, are dependent on a knowledge of the woman's condition, it may be necessary to determine, if possible, by physical examination whether pregnancy actually does exist; but under ordinary circumstances it is proper to proceed with a presumptive diagnosis, knowing that time will settle the matter beyond question. But at this time it is important that the physician should make careful inquiry in regard to the patient's general health. Of course, if he has been her medical adviser previously, her temperament, constitution and general condition will be known to him; but if not, he should inform himself on these points, and adopt such measures as may be necessary to promote good general health, and to remedy, as far as possible, constitutional defects. There are some special points, also, on which specific advice should be given: these points will be considered in detail.

Nutrition is a process of great importance in pregnancy, both to the mother and to her child: it is desirable for the mother to be able to put forth all her strength in her labor, and to endure its necessary sufferings with the least possible shock to her system. To this end attention should be paid to her appetite, diet and digestion. Some women during pregnancy have inordinate and perverted appetites, which need to be moderated and controlled. Some purposely restrict themselves unduly, in the hope of thereby retarding fœtal growth and of thus having an easier labor. Others for some reason have an insufficient appetite, which needs to be stimulated by proper therapeutic measures. The diet of pregnancy needs differ in no important particular from that which is proper in other phases of hygienic living, unless some special condition requires specific modification. Some authorities believe the food should be especially rich in phosphates, to promote the bony development of the fœtus; but it seems reasonable that whatever food is best for the mother may naturally be expected to be most suitable for fœtal development. Simple, nutritious diet, in moderate but sufficient quantity, should be advised: candy, pastries and fries should be avoided. The use of tea, coffee and wine should depend on their effects and on the patient's habit. Some women, who habitually eat too little, may require forced feeding, — a light lunch between meals and at bedtime, of milk, broth, egg-nog, malt, or bread and butter.

Most women at this early period of their first consultation with their physician are suffering more or less with nausea and vomiting, although some happily escape this often distressing symptom. It is not my purpose to discuss the treatment of this affection, which usually disappears spontaneously when the uterus has become an abdominal organ; but rather to express my belief in the importance and wisdom of checking or limiting it in its incipiency. The water which will quench a small blaze will add to the fury of a conflagration; and measures which will control this symptom in the beginning often prove worse than useless when once perverted function has assumed full sway. No one can tell to what end an apparently physiological nausea may attain. While occasionally no therapeutic measure short of induced abortion (and sometimes unhappily not even that) will control this symptom, in most cases simple remedies will suffice to remove it or keep it within due bounds: it is often found that attention to diet and digestion is all that is necessary. Morning nausea is often proved to be due to a want of nourishment, and is prevented by taking a lunch at bedtime, and another in the morning before raising the head from the pillow. If simple dietetic measures do not prevail, the cause should be sought for, and perhaps found, in a displacement or impaction of the uterus, or in an abnormal condition of the cervix: in other cases the cause will be found in a perverted innervation or hysteria. But whatever the cause, it should be found and removed, if possible, before the development of serious results in the patient's condition. A return of these symptoms in the later months should be given special attention.

At the first early interview the condition of the bowels should receive careful inquiry. Not only are most women chronically constipated, but those with whom the function of defæcation was previously normal are often disturbed with sluggishness of the bowels in the early months of pregnancy: indeed, constipation is considered by some a symptom of pregnancy in those previously regular. No speedy resort should be had to drugs, but an effort should be made to correct the difficulty by hygienic and dietetic measures. The woman should be cautioned not to strain at stool; enemata will suffice to ensure an easy movement when the failure is due to torpidity of the rectum. Much can be accomplished by proper exercise and dietetics; but should such measures fail, others must be employed to insure a regular, daily movement.

The skin is also an important organ of elimination. The better the functional activity of the skin, the less work will be thrown upon the kidneys at a time when unusual demands are made upon them. If the patient has not the habit of daily bathing, the duty of adopting it should be enjoined, the bath to be followed by vigorous friction with coarse towels. Apart from the benefit of stimulating glandular activity in the skin, daily bathing has a sedative effect on the nervous system and tends to promote the functional activity of the bowels, and other digestive and eliminative organs.

Unless the patient has some antecedent affection of the kidneys, there is seldom any disturbance of their function in the early months. Micturition is sometimes frequent, owing to the pressure of the enlarged and anteverted uterus on the bladder, or there may be an irritability of the latter viscus caused by concentrated urine. Women proverbially drink too little water to properly dilute their urine, which is often high colored, of high specific gravity, and excessively acid. This condition is not, of course, peculiar to pregnancy; but it is liable to be aggravated thereby and should receive attention. A glass of water three times a day will often suffice to relieve this condition: failing this, lithia water or acetate of potash may be advised with benefit. Throughout the pregnancy the state of the kidney should be closely watched. By this is not meant that the urine should be examined necessarily at frequent intervals. The patient herself, if of average intelligence, can be taught to do most of the watching, and that, too, without exciting her nervous apprehensions. In these days when water-closets are to be found on every floor of most houses, bedside cabinets and the old-time chamber-vessel are seldom used: as a result, most people rarely see their own urine and are unable to give much information concerning it. It is my custom, therefore, to direct pregnant women to see their urine at least once a day: I instruct them as to the average daily amount in health, tell them that it is important that this amount should be maintained, and ask them to notify me, if they notice any departure from normal standards, either in color or amount. I also ask to be informed of the occurrence of œdemas, puffiness of the eyelids, headaches, disturbances of vision, nervousness, and indeed of any symptom of ill-feeling. Twice or three times in the later months it is well for the physician to examine the urine; but even without such examination there is no occasion for apprehension of eclampsia so long as the urine is normal in amount, so long as the nervous system is in stable equilibrium, and so long as there is no apparent indication of central nervous irritation: the mere presence of moderate œdema and albuminuria, without other symptoms, does not disturb me in the least, although it makes me watchful.

As may be inferred from the last paragraph, the condition of the nervous system should receive special attention throughout pregnancy. Making due allowance for a poor inheritance, most women can be brought into a state of nerve equilibrium by a skilful guidance on the part of the physician into ways of correct living. There is no better medicine for unstable nerves than a plenty of sound sleep. If, therefore, it is found that the patient's sleeping habits are unsatisfactory, the cause should be sought for and removed. Suitable exercise, and a warm bath and a lunch at bedtime are often efficacious; but sometimes a course of bromides may be advisable. In the later months the woman sometimes fails to sleep because she cannot lie comfortably in bed. She may be accustomed to sleeping on her side, but finds herself unable to lie comfortably on her side when the abdomen is much enlarged. In such cases I have found that the use of a small pillow, upon which the abdomen can rest as upon a shelf, has been productive of comfort and repose. A pregnant woman's nervous system is often grieviously upset by the injudicious conversation of her friends and relatives. Some people are singularly, nay criminally, indiscreet in their talks with pregnant women. Accounts of appalling hæmorrhages, of convulsions, and of the graver obstetric operations are certainly not conducive to nerve quietude in the pregnant state. Neither is it judicious for the gravida to read all about it in the family medical books: such books are responsible for much harm. The more ignorant of the act of parturition a woman can be kept, the better: I would not have her know that there is such a thing as a placenta even. I always advise against any reading or any conversation with friends on the whole subject, and warn against listening to what may be well meant in the way of lay advice, promising that I will answer any question, if it be proper.

If a women dresses properly at other times, she needs make no changes during pregnancy, except to provide for the gradually enlarging uterus. Most women, however, still cling to the garter and the corset, both of which are more than usually deleterious during pregnancy. It is sometimes difficult to induce a woman to lay aside these abominations even in the later months; but such a course should be advised, and the reasons why should be explained. It is gratifying to know that some women are substituting a comfortable waist for the corset; and are suspending the skirts from the shoulders, instead of buttoning them tightly around the waist. Garters are also to some extent giving way to tapes attached to the corset-waist. It will be the better for all women, when they follow the advice of physicians in these matters of dress.

How much exercise ought a pregnant woman to take? It is often difficult to prescribe the exact amount that is suitable for any given person. Most women obtain all needed exercise in the pursuit of their usual affairs; some, however, in the leisure class, need more than their habitual activity. Walking is probably the most suitable exercise in pregnancy, not carried, however, to the point of fatigue: the august lady at the court of St. James set her subjects a good example in this respect. In the latter weeks, when walking may have become difficult, driving may well take its place. One might hesitate to prescribe gymnasium exercise for the pregnant; yet I recall one patient, habituated from early childhood to gymnastic exercise, who continued her training during nearly the whole of her gestation, omitting only the heavier work, and she had a most rapid and easy labor and an uneventful convalescence. Fortunately, most women are engaged in house-keeping duties, and except for the want of the open air housework is probably the healthiest occupation a woman can have. It is difficult sometimes to induce women to take sufficient open-air exercise; but there is no question that most women are greatly benefited by it during pregnancy, and have easier labors in consequence. Women should be willing to train themselves in some degree for their labor, as an athlete would train himself for a race.

Pregnant women should be cautioned against indiscrete exertion at the times which would be menstrual periods were they not pregnant. I have too often seen the unfortunate results of indiscretions at these times. When miscarriage occurs, it is usually at the time of a menstrual epoch. Some women are made aware of the approach of these epochs during pregnancy by certain unmistakable sensations and feelings of malaise; but to avoid oversight in those not so warned, they should be advised to mark off on their calendars the days when menstruation would ordinarily occur. In these days no undue exertion should be made, and exercise should be somewhat restricted: above all at such times nervous excitement should be avoided.

This leads me to speak of the propriety of sexual intercourse during pregnancy. To many women I believe coitus during pregnancy is distasteful, to many even obnoxious, to all, in my opinion, it is more or less injurious. Aside from the mechanical disturbance of the uterus by impact, the sexual act injuriously congests the pelvic vessels, excites and then depresses the nervous system, and is often a cause of miscarriage, especially when practised at a menstrual epoch. So far as my knowledge of the animal creation goes, the pregnant female will not suffer the sexual approach of the male, but will fight, if necessary, to protect herself. Certainly among enlightened human beings, men who have at heart the welfare of wife and children should be willing to forego sexual indulgence during the time when the wife needs all her vital powers for her own well-being and that of her expected offspring. Many men and women err through ignorance, and are grateful for advice on this subject.

It is believed by some that the pelvis should always be carefully measured in the early months of pregnancy with a view to anticipating some serious complication in labor at full term. In women who have a history of difficult and pathological labors, such a course is wise; but in primigravidæ it has never seemed to me warrantable to subject them to a routine examination unless there was a reasonable suspicion of some deformity in the parturient canal. Marked forms and degrees of pelvic deformity are likely to be suspected during pregnancy, if the patient is under observation, and in such cases pelvimetry should be made. The minor degrees of pelvic contraction, on the other hand, even if suspected and ascertained to exist, would not warrant obstetric interference before full term in a woman pregnant for the first time. In such cases the child is often proportionally small, and is safely delivered either by nature or by art. If, however, the first labor proves disastrous, and the woman demonstrates her unfitness to give birth to a full-term child, premature labor can be induced in subsequent pregnancies. I do not, therefore, include pelvimetry among the necessary duties of the medical attendant, as a matter of routine.

With a view to successful lactation the breasts should receive some attention. They should be relieved from injurious pressure by corsets and tight clothing early in the pregnancy; no other care except cleanliness is necessary until after the seventh month when it is advisable to begin to prepare the nipple. The old-time custom of applying a decoction of green tea and brandy in equal parts is familiar to all, and doubtless this mixture is very efficacious in toughening the nipple: I have found, however, that absolute alcohol, diluted one-half with water, is quite as satisfactory and less troublesome. I am accustomed to advise the use of this lotion morning and evening during the last two months. If the nipple is flat or inverted, it is well to draw it out by gentle suction with a heated bottle before applying the alcohol. With proper preparation in pregnancy and suitable care during lactation, sore nipples need rarely occur.

As the abdomen enlarges in the later months, and the skin is tightly stretched, much comfort is imparted by inunction with sweet oil or lanoline. I have thought, too, that the skin is thereby softened and made more elastic, and that there is not so much tearing in the deeper layer and consequently not so much disfiguration by scars. Some women are oppressed with the weight of the uterine tumor and are unable to go about with comfort: a well-adjusted abdominal support is a great comfort in such cases, and often enables the woman to walk and drive until she is brought to bed.

It is well known that a species of anæmia is a physiological condition in pregnancy: the red corpuscles, albumen, iron, and the salts of the blood are diminished; while the white corpuscles, fibrin, and water are increased. Robust, well-nourished women may have sufficient reserve power to sustain the demands which pregnancy makes upon their vital energy without artificial assistance; but this type of women is not common in my experience. I have already spoken of the importance of careful attention to nutrition during pregnancy, as a means of preventing undue impoverishment of the blood; and it has seemed to me that most women are benefited by the administration of iron, especially in the last two months. Apart from the general benefit of iron as a tonic, there is ground for belief that post-partum hæmorrhage is less likely to occur in those whose blood has not been too much impoverished by the unsupported demands which pregnancy makes upon it. It has long been my custom to prescribe Quevenne's iron in the last two months of pregnancy, with great apparent benefit.

There remains for me to speak of one more subject of great importance to both patient and physician, the selection of the nurse. Too often this duty is attended to by the patient without consultation with her medical adviser; such, indeed, is the custom. While some men may be indifferent, most physicians would prefer to select the nurse who is to be their lieutenant and assistant, as much as the commanding officer to choose his adjutant, as indeed it is his prerogative to do. It is only right that he who is to have the responsibility of the case should select or approve the nurse who is to carry out his orders: no man can do his best work, if handicapped with an assistant in whom he has not confidence. There is need, I think, of some educational work on this point among the laity: women engage their nurse long before their physician, and without consultation with him, because they have not a correct understanding of the relation of the nurse to the physician. In most cases when the patient's means allow her to employ a training-school graduate, the nurse may be entirely satisfactory to the physician; yet it is unnecessary for me to assert in this presence that there is room for choice among trained nurses. And when we pass without this circle to the greater field of the old-time monthly nurse, we find them good, bad or indifferent, septic or otherwise, according to circumstances. I have long since declined to attend cases unless I could select, or approve of, the nurse, and my own results and peace of mind have greatly benefited thereby: it is needless to add that the patient's welfare is promoted, quite as much as the physician's, by thus allowing the doctor to give his patient the benefit of his own better knowledge as to the relative fitness of nurses. He surely can choose more wisely than his patient.

I hope it will not be supposed, from the length of this paper, that under ordinary circumstances much time or money must be spent in the exercise of suitable supervision over pregnancy. When the woman is in good general health two or three interviews with her physician will usually suffice: at these consultations, distributed through the pregnancy, all needed advice can be given, and the physician can assure himself that his patient continues well. If, however, at any time the pregnant woman is not well, it is needless for me to emphasize the importance of bringing her as near as possible to normal standards.

It has often seemed to me that the physician's visits came at the wrong time: in most cases he does not see the patient during pregnancy, when he might be of great service, but makes numerous visits during the lying-in period which ought to be for the most part unnecessary. If the patient approaches her labor in good physical condition, in the best possible physical strength and with stable nerves, — if then the labor is skilfully conducted and she is delivered without septic infection and left in the hands of a competent nurse, there is little or nothing to require the subsequent attention of the physician: his care and advice can be much more profitably bestowed before the baby is born. If the physician's visits could be transferred in part from the puerperal to the pregnant period, there would be in my opinion fewer abnormal labors, less suffering, more rapid convalescence and better obstetric results.

How can this desirable state of things be brought about? How can the two chief obstacles be removed? Ignorance of the advantages of supervision among the laity can only be removed by active missionary work by the medical profession: when it comes to be understood in any community that the leading physicians will not attend obstetric cases unless women place themselves under observation early in their pregnancy, the lesson will soon be learned. Already among the more enlightened and well-to-do classes of this community, it is quite generally the custom for women to inform their physician as soon as they have passed over one or two periods and to place themselves in his care. And among those less well-circumstanced the lesson could soon be taught by well-directed effort in the circle of each physician's influence. The question of expense ought not to be an obstacle in the way of all necessary supervision of the pregnant: it is not, among those pecuniarily well situated. Indeed, it has seemed to me that less expense is incurred on the average when the patient has received adequate attention during pregnancy, for the reason that fewer visits are necessary during the puerperal period. Among those who by force of circumstances or by custom are attended by contract, where the physician's services must be unrequited, if given during pregnancy, selfish motives alone would seem sufficient to induce him to give all needed attention to prevent complications and disasters which more or less affect his reputation, often give him much additional work and disturb his peace of mind. But appeals to such motives are unworthy of a liberal profession: the true physician is ever willing to give freely of his time and ability to promote the best interests of those who are placed in his care.

A NOVEL OFFENCE AGAINST A PHYSICIAN. — A recent number of *Vratch* quotes a statement to the effect that a St. Petersburg physician was about to prosecute a man who had caused one of the physician's prescriptions for his deceased wife to be posted over her grave, in order to call public attention to his belief that the medicine she had taken had been the cause of her death.

THE ESTABLISHMENT OF SANITARIA FOR PULMONARY DISEASES IN THE VICINITY OF OUR GREAT CITIES.[1]

BY VINCENT Y. BOWDITCH, M.D.,

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THE treatment of pulmonary diseases in sanitaria established for the purpose, has been for a number of years a well-recognized method in Europe, especially in Germany, and, during the past few years, the foundation and success of institutions in various parts of the United States, shows that the hopes of those who originated the idea were not vain, and that much more can be done now than heretofore in combatting the ravages of consumption.

To Hermann Brehmer should be given the credit of having established the first institution of the sort, about thirty-two years ago, in Görbersdorf, a little village of Silesia, situated in a well-sheltered mountain valley about 1,600 feet above the level of the sea, where phthisis was never known to arise, and where Brehmer himself recovered his health.

He conceived the idea of establishing there an institution to be devoted to the treatment of pulmonary diseases only, and although ridiculed and maligned to an outrageous degree at first by members of his own profession, he finally proved that his views were correct and his name and memory now are honored throughout Germany and elsewhere in the medical world.

Since then, and upon the same principle, the famous sanitarium at Falkenstein, in the Taunus Mountains near Frankfort-on-the-Main was established under the care of Dettweiler, and later, many smaller institutions have sprung up in various parts of Germany, all devoted to the same purpose, and although varying perhaps in details of treatment, they carry out the same general idea that good food, fresh air and strict supervision to prevent the results of indiscretion, in diet and mode of life, are the chief factors in restoring the patients to health. Under these methods both Brehmer and Dettweiler claim that fifty per cent. of the incipient cases of pulmonary disease have been cured.

It was my good fortune in the summer of 1889 to see both of the above-mentioned sanitaria, and I can testify to the great care and pains shown by those in charge of the institutions. Brehmer's sanitarium at Görbersdorf, is a lasting monument to a noble man. Beginning as a small cottage for two or three patients, a little over thirty years ago, the institution now comprises two immense red-brick, Gothic buildings, with accommodations for two hundred or more patients; a large winter garden, reading-rooms, etc., in addition to various small villas scattered about the grounds for wealthier patients. Beautiful gardens surround the houses and a magnificently wooded park with carefully graded paths extending for many hundreds of acres over the sides of the mountains, forms a delightful pleasure-ground for the use of the patients.

In both of these institutions the strictest watch is kept over the general treatment of the patients, in regard to diet, amount and kind of exercise, and methods of life generally. At Görbersdorf, after a light and early breakfast consisting of a cup of tea, coffee or milk, with bread and butter, exercise in the open air is prescribed and regulated according to the ability or disability of the patient. When the patient's strength admits of it, a walk up the mountain-side through the park is advised. To facilitate this, paths are laid out with the greatest care at a very gentle grade, seats being provided at many points, and the patients are told to stop and rest frequently to avoid undue fatigue, and at the same time to enable them to get the benefit of increased expansion of the chest and quickened circulation, so important in cases of pulmonary disease. Even in the height of winter is this made possible, as the paths are cleared of snow every morning by eight o'clock, up to the top of the mountain.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Massachusetts Medical Society, Suffolk District Medical Society, December 16, 1891.

About eleven o'clock a more substantial breakfast is served, dinner at two, and supper about half-past six, the intervening time being occupied by exercise or rest in the open air, the patients even in the coldest weather, well wrapped up, reclining in chairs for hours during the day.

The moral welfare of the patients is cared for also, and frequent concerts, readings, games and other forms of amusement make an important feature of the treatment.

The same general methods are carried out at Falkenstein, and although the institution has not yet reached the magnificent condition of Görbersdorf, everything is done for the comfort and welfare of the patients.

It is a significant fact in favor of sanitarium treatment, that although the climate of Görbersdorf differs decidedly from that of Falkenstein, yet the favorable results are about the same in both places. In Görbersdorf they are blessed with infinitely more sunshine than in Falkenstein, which although situated at about the same altitude as Görbersdorf, and on the sheltered side of the mountain, has the characteristic wet, gloomy weather of a German winter.

Opinions differ at present as to the effects of altitudes *per se* in their beneficial effect upon pulmonary disease; some observers maintaining that it is one of the most, if not *the* most important factor in the large percentage of cases of recovery reported in regions over 1,500 feet above the level of the sea.

Brehmer himself remarked to me that he believed the altitude of Görbersdorf (about 1,600 feet above the level of the sea) had much to do with his success. Dettweiler, on the other hand, deemed it of much less consequence than other factors. Observers like Solly, Fisk and Denison, in Colorado, are firm in their belief that the altitude of Colorado (over 6,000 feet) is one of the chief reasons of the benefit obtained by the life there, while Dr. Geddings, of Aiken, S. C., whose large experience makes his opinion of much weight, is evidently of the same opinion as Dettweiler.

A discussion upon this point would be of great interest, but it is out of the limits of this paper, as I only wish to speak of the plan of establishing sanitaria for pulmonary diseases in the immediate vicinity of our great cities, in healthy localities, for the benefit of those who can not, or will not, for various reasons, seek more salubrious climates.

The late Dr. Paul Kretschmar, of Brooklyn, N. Y., two or three years before his death, read papers before the American Climatological Association, and before the local New York societies, strongly urging the establishment of such an institution in the hilly portion of New Jersey, near New York, but so far as I know, no active steps have been taken towards carrying out Dr. Kretschmar's excellent idea.

Very early in my practice I felt that some such institution was needed near Boston, and as the idea grew stronger, I was enabled, with the assistance of Dr. Lovett, to establish, through the generosity of wealthy people here and elsewhere, a small Sanitarium at Sharon, Mass., on the Providence Railroad, a region long known as one of the most healthy localities about here, on account of its gravelly porous soil, its abundance of woodland, and pure water-supply, my idea being to supply to people of very limited means a comfortable home where at the same time a constant medical supervision could be maintained.

The institution was opened last February, and although it is, of course, much too early to give actual results, yet the evidences of the advantage over this method to that of sending patients hap-hazard out into the country to board, are so strong, that I am already convinced that I was not wrong in my first belief that a properly regulated sanitarium would be of the greatest use in our community.

A brief description of the sanitarium will be in place here.

The place selected was a small farm on high land not far from the Sharon station, overlooking a charming view towards the south and west. The soil is gravelly, very porous and dry, well-water not being found above twenty or thirty feet below the surface. Behind the house stretches from east to west a number of acres of woodland, chiefly of pine and hard-wood trees, which, with the line of the Moose hills, form an effective shelter from the harshest winter winds. On three sides of the house extends a broad piazza, in the centre of which, in a recess made on the southern front, the patients can be well protected, even in severely cold weather, when exercising or resting in the open air. The interior of the house is arranged to have as much sunshine and good ventilation as possible; open fireplaces are found in every room, and each patient has her own separate bedroom, no two ever sleeping in the same apartment. The walls are all painted, and are frequently wiped with damp cloths; the floors are of hard-wood covered with rugs, which are frequently cleansed, no laid carpets being allowed. The strictest rules are made as to the sputa of the patients. Cuspidors filled with damp sawdust are on the ground floor, and the contents are burned every day. In the bedrooms small paper cups in frames are at the bedside, and burned after use. When on the grounds the patients carry cloths placed in a rubber pouch in the pocket, the rags being destroyed in the same manner, and the patients are forbidden to expectorate on the grounds or to use any other receptacle than those provided, every effort being made to insure the utmost cleanliness.

The treatment usually pursued is first, that of giving all the good nourishing food possible at the three daily meals, a lunch of milk or raw eggs being taken in the middle of the forenoon and afternoon. According to the nature of the case, more or less exercise in the open air is taken, and daily rest in reclining chairs on the piazza, even in midwinter, when the sun shines, is one of the most important parts of the treatment, especially in hæmorrhagic cases, in which much active exercise either on rising or level ground, is prohibited.

In most of the cases, I have found the tri-weekly or daily use of the pneumatic cabinet to be of very marked benefit where expansion of the chest is needed, combining it oftentimes with some soothing vapor in cases where symptoms of bronchial irritation are marked. It is in such institutions that this instrument or other methods for expanding the chest and inhaling medicated vapors, can be used with the most beneficial effect, for the patient has the advantage of being near at hand, and can easily take the treatment as often as thought necessary. Judging by the effect in most cases at the sanitarium I regard the pneumatic cabinet as one of the most valuable factors in the general treatment. Tonics are usually given; stimulants occasionally when necessary, but drugs are avoided as far as possible. Everything is done to contribute to the mental welfare of the patients, and drives through the country and both out-door and in-door games are encouraged.

The institution only receives women now, and only cases which are in the first stages of pulmonary disease. We hope, as the project grows, to have cottages built adjoining the present house and to receive both sexes.

The objection has been frequently raised by some, that the effect of putting many patients together is to increase the risks of possible infection, and that the effect upon the patient of seeing others ill about him, will be very depressing and hence deleterious.

That both of these objections have a certain amount of truth in them no one can deny, but that practically, they amount to very little, to those who have had experience in sanitaria, I am convinced.

Before the Sharon Sanitarium was begun, I felt very strongly the force of the latter objection, and one of my first questions to Dr. Trudeau, when I visited his sanitarium at Saranac, N. Y., was, "Do not the patients become depressed by seeing each other ill?" In reply he said, "Listen to that!" and at that moment the sound of some negro songs and very jolly laughter came from a group of patients on the piazza near by, and he added, "That is the way it is all the time. Of course, there are times when each one feels depressed, especially at first, but they usually become accustomed to their surroundings, and if they improve, seem as happy as possible." This was quite in keeping with the sentiments expressed at the large institution at Görbersdorf, by a young American lady who had been there for two years, when I asked her if she never felt depressed at being in a place where there were so many sick people. She laughed and said, "Oh, for the first two weeks I came, I was homesick and of course I felt depressed, but I soon got over that and ceased to think of it, and I am so happy here now I hate to think of leaving, as Dr. Brehmer tells me I probably can in a few months"; and she told me that was the feeling with the majority. My own experience with the patients at Sharon only confirms this idea. They seem very happy; and when depression comes I usually find it attributable to some outside cause and not to the proximity to other patients.

As to the possibility of infection; with proper care I think this danger is reduced to a minimum. No one would deny that the ideal way would be for each patient to have his or her own establishment with a physician in constant attendance to regulate the daily mode of life in the most perfect climate to be found; but as this method is unfortunately impossible for the large majority of sufferers, a less expensive course must be adopted, and my own belief is that the advantages of the method of treatment I am advocating so far outweigh its possible dangers that the latter practically fade into insignificance.

Dr. S. E. Solly of Colorado Springs, in an admirable paper entitled "Comparative Results of Treatment of Phthisis by Climate,"[2] gives the conclusions of several of the most celebrated authorities upon pulmonary diseases in Europe and America and by them gives a very convincing proof of the great advantages of treatment in closed resorts (sanitaria) as compared with that in open resorts. In Table III, entitled "Comparison Between Open Resorts and Sanitariums in Low Climates," he gives the following striking figures:

ALL STAGES OF THE DISEASE.

	Cases.	Cured.	Benefited.
Open Resorts in Low Climates,	1,724	6%	46%
Sanitariums in Low Climates,	2,443	13%	27½%

FIRST STAGES OF THE DISEASE.

Open Resorts in Low Climates,	685	5%	45%
Sanitariums in Low Climates,	89	31½%	45%

In thus advocating the establishment of sanitaria in healthy towns near our large cities I do not wish it to be understood that I expect such results as are obtained in climates more salubrious and less trying than our own; but I firmly believe and am daily becoming more convinced from results thus far obtained at Sharon that we can do infinitely more than heretofore to help a large class of patients who are unable for various reasons to seek other climates.

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THE ETIOLOGY OF ACUTE PLEURISY WITH EFFUSION.[1]

BY GEORGE G. SEARS, M.D.

OF the five cases which are here briefly reported, I have been very kindly allowed to refer to the Records of the Massachusetts General Hospital for the early history of three; while this list could have been easily extended, the five which have been selected illustrate sufficiently the more recent views of the etiology of acute pleurisy with effusion, to serve as a text for its discussion.

Mrs. J. M., aged thirty-six, family history good. In May, 1890, had an attack of pleurisy with large serous effusion for which she was twice aspirated. Nine months previously she had overtaxed herself by nursing a sister-in-law who was in the last stages of consumption and since then had had, at times, a short hacking cough of which she had thought nothing. She recovered sufficiently to perform her household duties, but died a year later of phthisis.

M. H., aged twenty-one, family history unknown, had an attack of pleurisy with effusion, requiring aspiration, in the spring of 1888, from which he entirely recovered and resumed work. In September of the following year, phthisical consolidation of both apices was found.

M. B., aged twenty-one, of good family history, entered the Massachusetts General Hospital in June, 1876, with an effusion completely filling the left side which he attributed to a strain. Six weeks later he was discharged well and resumed his work, that of a stevedore. Six years later he died of phthisis after an illness of over a year.

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[1] Read before the Boston Society for Medical Improvement, December 28, 1891.

[2] Hare's System of Therapeutics, Vol. 1. H. C. Lea & Sons, Philadelphia.

S. V., aged fifteen, entered the hospital in 1885 with a slight effusion into the left chest following exposure to cold. He had had a slight attack of pleurisy the previous winter. After three weeks he was discharged well, but died four years later of consumption in California, where he had been sent for his health.

Annie L., aged twenty-two, entered the hospital in 1890. Three years before she had had pleurisy with effusion for which she was aspirated. At the time of entrance well-marked signs of phthisis were found in the lungs and she was suffering also from ascites which was ascribed to a tubercular peritonitis. Five weeks later she was so much improved that she was discharged. When she again came under observation, six months later, the pulmonary lesion had advanced and bacilli were found in the sputum, but abdominal examination was negative.

With the exception perhaps of the first case, where the possibility of infection or contagion at an earlier date cannot be excluded, the disease came on suddenly in previously healthy individuals, some of whom were without hereditary taint, ran an acute course and ended in apparent recovery, the patients resuming their ordinary occupations. Later, at periods varying from a few months to a few years, phthisis manifested itself. It is to be regretted that the tubercular or non-tubercular character of the process cannot be definitely settled by an examination for bacilli as in other diseases in which such a suspicion exists, but they have been unsuccessfully sought for with the microscope by Ehrlich, Fraenkel and others in some cases of undoubted tubercular origin, while inoculation and culture experiments have proven equally fallacious. Direct evidence is not, however, altogether wanting that primary tubercular inflammation of the pleura may exist. Vaillard's and Kelsch's[2] cases are very strongly corroborative, but are not quoted here as objection has been made that the bacilli were not sought for. The same criticism cannot be made to two cases reported by Lauth[3] in both of which the disease was similar to phthisis, but the autopsies showed tuberculosis of the pleura without previous involvement of the lungs. It cannot be considered positive proof of the tubercular origin of certain cases that they have been followed by consumption after the lapse of several months or years, nor, on the other hand, can its connection with tuberculosis be denied where complete and lasting recovery has taken place. The prognosis in all tubercular affections has been recently so thoroughly modified that cure is expected in a considerable proportion of cases. König, for example, found that out of 131 cases of tubercular peritonitis which he had collected, 30, or about 23 per cent., remained well from two to twenty-five years after laparotomy, and it seems still an open question if this has not shown, by proving the diagnosis, rather that tubercular peritonitis can be recovered from, than that the operation is in itself always the cause of recovery.

If it could be shown that in a large number of cases a much greater proportion dies of tubercular disease than could be expected from the general average, strong presumptive evidence of the connection between the two diseases would be furnished and the probability of the tubercular origin of pleurisy be strengthened. Such evidence I have endeavored to procure by collecting all the published series of cases of any considerable size which I could find in the literature of the subject. These have not been very numerous and are not free from several sources of error. Some of the reporters have made no distinction between dry pleurisy and pleurisy with effusion, or have included in their list cases which were secondary to pneumonia, measles or other infectious disease, as well as cases which were under observation too short a time. Such errors might, in a measure, balance each other, but Fiedler's[4] figures, whose original paper I have not seen, are so one-sided that he would seem to have included cases in which the effusion occurred in an already well-established tuberculosis of the lung. A striking point in these statistics is the wide variation in the experience of the various observers. Blakiston reports 53 cases which had remained well for several years. Austin Flint, 47 cases with three possible instances of subsequent tuberculosis; out of 21 cases reported by J. P. Bramwell,[5] three only died of tubercular disease. Coriveaud[6] had but four deaths from this cause out of 27 cases, one of whom he had followed twenty-five years and one fifteen. On the other hand, V. Y. Bowditch[7] found in 90 cases occurring between 1849 and 1879, that 32 had become consumptive. Barr,[8] out of 57 cases occurring between 1880 and 1884, found that 21 at the time of his report (1890) had already died of pleurisy or some well-recognized tubercular disease, mainly phthisis, and of 44 cases treated by Böcher, 32 presented later manifest symptoms of tuberculosis of the lungs. Fiedler, quoted by Sée, says that of 112 cases of pleurisy treated by thoracentesis, but 21 recovered; of the 91 other patients, 25 died of phthisis either at the hospital or their homes; 66 recovered from the pleurisy, but were found later to be victims of confirmed phthisis or other tubercular disease.

Four hundred and fifty-one cases are here mentioned of which 176, or about 39 per cent., developed phthisis or other well-marked tubercular affection. Coustan and Dubrulle,[9] from their army experience, say that all soldiers who have suffered from pleurisy are no longer fit for military duty and that a majority die later of consumption. An exactly opposite opinion is held by Blachez who mentions an epidemic of pleurisy many years ago without the subsequent development of pulmonary disease in a single case. Westbrook, Vickery, and others have reported cases which were followed by phthisis and from a review of the recent literature there seems to be an increasing tendency to ascribe to the tubercle bacillus a more and more important rôle in the causation of pleural effusions, but as the pendulum of medical opinion is proverbial for the length of its vibrations, it is fair to ask if, in the present instance, it is not tending to swing too far in this direction. The frequent occurrence of pleurisy as a complication of pneumonia, rheumatism, measles and other infectious diseases where no doubt exists that it is the same in origin, suggests the question, if so-called idiopathic pleurisy may not at times be due to the same causes, which for some reason affect only the pleura, a question which the discovery of the pneumococcus in pleural effusions, not secondary to pneumonia, goes far toward answering, while the reported curative effect of salicylic acid in many cases suggests its being at times a local manifestation of rheumatism. From any series of cases similar to that given above, a certain number must be deducted for those who would have developed phthisis in the natural order of events without the incidence of a previous pleurisy, while the part which a latent tuberculosis of the bronchial lymph glands may take in the subsequent onset of a more general process must also be considered, as has recently been emphasized in papers by H. P. Loomis[10] and Northrup.[11] Of 91 autopsies on tubercular patients collected by the latter from the records of the New York Foundling Asylum in which conclusions could be drawn as to the primary seat of the lesion, in 88 it was situated in the bronchial glands, which in nine cases had already advanced to a state of cheesy degeneration while the lungs showed only a beginning tuberculosis. In 13 cases, most of which had died from acute infectious diseases, they were alone affected. Loomis inoculated rabbits with material from the bronchial glands of 30 adults who had died either suddenly or after an acute disease and found that in eight cases active tubercle bacilli were present, although there were no other traces of tuberculosis. There can be no doubt that the unfortunate possessors of such glands are constantly exposed to the dangers of a general infection which may occur whenever proper conditions are found for dislodging the bacilli and setting them adrift in the general or pulmonary circulation. Such conditions would seem to be well satisfied in acute pleurisy with effusion where a shower of bacilli might be washed out by the large amount of fluid which, in process of absorption, must pass in part, at least, through the lymphatics. Ulceration of the degenerated glands might also be set up by the sudden increase in their functional activity. Such a theory would explain the onset of a general miliary tuberculosis following the rapid absorption of an effusion as in the cases reported by Litten, Troisier and others. In other cases where months may pass before phthisis is recognized, it is possible that the dislodged bacilli may remain quiescent or develop so slowly as to cause no special symptoms until some further impulse is given.

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[2] Arch de Physiol., 3, s. 7, 8, 1886.
[3] Gaz. Hebd. de Med. et de Chir., 1887, p. 649.
[4] Centrblt. f. Chir., No. 35.
[5] Edinb. Med. Jour., 1889, ii, p. 909.
[6] Journ. de Med. de Bordeaux, xvii, 1887-88, p. 601.
[7] Philadelphia Medical News, July 20, 1889.
[8] British Medical Journal, 1890, i, p. 1058.
[9] Gaz. Hebd. de Méd., 1886, 2, s. xxiii, 662.

In conclusion it can be said that a very considerable proportion of cases of acute, apparently idiopathic pleurisy with effusion, is followed by pulmonary phthisis. In a part of such cases the pleurisy is doubtless of tubercular origin and is its earliest expression just as hæmorrhage may be the first symptom and not the occasion of pulmonary phthisis, while of the cases which remain permanently well, in view of the spontaneous recovery of tuberculosis in other situations, it is fair to assume that a certain proportion is due to the same cause, the process remaining local. In others, though itself benign, pleurisy may be the cause of grave disease by dislodging the bacilli from their comparatively harmless position in the bronchial glands, or by crippling the movements of the lung favor the development of phthisis. Whatever may be the relative importance of these processes in inducing the same result, the deductions to be drawn as to treatment are sufficiently obvious and should lead to the greatest care during convalescence to protect the patient so far as possible from danger by building up his powers of resistance, while the expansion of the lung should be aided by early, and if necessary, repeated aspiration. Equally obvious, for both prognosis and treatment, is the necessity for frequent, careful examination of the lungs themselves as well as a bacillary examination of the sputum, lest in the greater interest of watching the daily changes of the fluid the beginning of a more serious condition may be overlooked.

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[10] New York Medical Record, December 20, 1890.

[11] New York Medical Journal, February 21, 1891.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, December 28, 1891, the President, Dr. Frederick I. Knight, in the chair.

Dr. C. M. Green read a paper on

THE CARE OF PREGNANT AND PUERPERAL WOMEN.[1]

Dr. Reynolds: I am very glad to hear this paper. I think the subject is one of the very greatest importance. I think it a very widespread belief that the sole duty of the obstetrician is confined to labor. I think myself that, in the great majority of cases, among the women of more delicate health of the upper classes of society, the care of pregnancy and the puerperium is, by all odds, the most important part of the obstetrician's duty, and has more to do with the after-health of the patient than anything he can do in ordinary labor, with the single exception of asepsis.

I think there is one thing that the physician in pregnancy should bear carefully in mind and that is the extent to which the normal annoyances of pregnancy are to be exaggerated by mental influences. It is very important that he should always bear in mind the fact that by too much attention, by appearing to attach too much importance to minor troubles, he may bring the patient to a state in which she imperatively demands treatment for things she had better endure. While he should bear that in mind carefully, and while it is often a difficult point to decide whether a given annoyance should be endured or be treated, I do think that the decision of this point properly and the treatment of the annoyances from the moment that they exceed the physiological limit conduces enormously to the health of the patient in succeeding years.

As regards the treatment of nausea and vomiting during pregnancy I have been especially impressed with the truth of what Dr. Green said about the importance of having something to eat before the patient rises from bed. I believe that the reason why the nausea of pregnancy is known as "morning sickness" is because that is the only time in the twenty-four hours that the patient has been twelve hours without food, and I think that, in the vast majority of cases if at the time when nausea first appears the patient takes a hearty supper just before she goes to bed, and a cup of milk before she rises in the morning, the nausea will be very mild even in cases where it might become severe without that precaution.

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[1] See page 186 of the Journal.

Constipation is certainly one of the most important of all the derangements of pregnancy. I think nothing conduces more to comfort during the later months of pregnancy and prompt recovery after labor, than early treatment of constipation. If constipation is allowed to persist to the sixth, seventh or eighth month, very little can be done for it except the employment of cathartics, often in considerable doses and for long periods, and that use of cathartics, it seems to me, hardly relieves the system fairly. It prevents the worst effects of the accumulation of fæces, but defecation can seldom at that period, with the fœtus and uterus pressing upon the intestines, be made sufficiently regular and normal and physiological to relieve the patient from the evils which attend the minor degrees of constipation in ordinary health if an accumulation of fæces has already been permitted to occur. I differ from Dr. Green a little in what I understood to be his advice in the employment of enemata. I believe it is a mistake to have the patient contract the habit of making frequent use of enemata, and I have failed to find that attention to diet will regulate the bowels. I have been rather accustomed to pin my faith to the fluid extract of cascara sagrada or the elixir rhamnus Pursh, Co., (N. F.) If the patient begins the use of one of these preparations, using them three times a day from early in the pregnancy, and carries it through to the end, I think the bowels almost always maintain a fairly normal action.

Another point of great importance is care to recommend the abundant use of water during the pregnancy. Nothing, I am convinced, adds more to the safety of the patient than that the physician should be careful to see that she takes a sufficient quantity of fluid of some kind; and I think that as Dr. Green has stated, most women so uniformly take too little water, that this is a point to speak of in almost every case.

As regards the mental condition of the patient, every one knows the delight which women who have had children have in detailing to primiparæ the sufferings of labor. I think a point of great importance in the care of the latter months of pregnancy is for the physician to take care to draw his patient out, find out her ideas about labor, contradict some of these stories, and reassure her. I think this often has more effect on the *morale* of a patient, and on her general condition, than is ordinarily imagined. I think it is important to look after the nervous tone of the patient, to care for her sleep, to caution her to avoid anxiety, worry and mental work.

As regards pelvimetry, I agree with Dr. Green that the employment of pelvimetry in the ordinary run of cases is not only impossible, but entirely unnecessary from the obstetric point of view, for the reasons he gave. I think it is important to urge upon physicians to reach for the promontory of the sacrum at the first examination in every case of labor. If there is any contraction of the pelvis it will be detected then, and any degree that is so slight as to have escaped attention during pregnancy will thus be recognized at the beginning of labor, which is plenty soon enough to recognize minor degrees, and will prevent their neglect until serious complications have arisen.

I was a little surprised to hear what Dr. Green said about the care of inverted nipples. I should be afraid to habitually pull out inverted nipples for fear of reflex action upon the uterus.

Dr. A. H. Nichols: While not venturing to add anything to the subject of this paper, I can perhaps furnish another illustration of the physiological principle that while the danger of abortion from external violence is comparatively small during the greater part of the month, there does exist a very marked susceptibility to such an accident during or immediately before the menstrual epoch. I remember when a student in Paris to have been impressed by a seemingly exaggerated statement on this point made by Professor Depault, that a pregnant woman could under ordinary circumstances jump from a second-story window with greater safety as regards an abortion, than she could slip from an edge-stone at this particular time of the month, when the reproductive organs are more easily excitable. An experience derived from more than twenty summers spent at a sea-side resort has convinced me that there exists a very imperfect knowledge of this law on the part of many physicians sending thither women patients; for pregnant women are, as a rule, not furnished with instructions as to the propriety of bathing in the ocean where very considerable shock may be sustained from the low temperature of the water or from the height of the waves. When consulted upon this matter, my advice has invariably been, that if the woman is otherwise in good health and the abdominal enlargement not extreme, sea-bathing can be indulged in with benefit under the simple restriction with regard to the menstrual epoch, as above indicated: and in no instance have I observed any ill-effects from such bathing where this rule was observed. On the other hand, I have witnessed several abortions and many threatened abortions in women who have subjected themselves to the violence of the surf indiscreetly and in violation of this rule. I am furthermore inclined to the belief that a more general application of the principle embodied in this law would permit much greater latitude to women in the way of general exercise, gymnastics, etc., than is now accorded; and it would certainly seem that the improved physical status thus induced would tend to facilitate the process of childbirth.

Dr. H. W. Broughton: I feel glad that my own habits seem to be so well in accord with the teachings of so good a teacher as Dr. Green. A case by way of illustration, as Dr. Nichols has set the example of practical experience, is suggested to my mind that shows the value of encouraging our patients to call upon us in the early months of pregnancy. Not long ago a woman called upon me with a view of consulting me about her little girl. I was impressed immediately with the pallor and extreme whiteness of her face, and asked her as to the occasion of it. I learned that she was three months' pregnant, and that led me to ask further questions. I found she was limiting herself to a strictly vegetable diet. I asked why that was done; and it seems she had read with great interest a book something after the general style of "Childbirth Made Easy," written by some very wise person who imagined that by an absolute vegetable diet the bones would be so softened that the fœtal head would pass without pain. I found my patient was deeply imbued with the idea. She was a very intelligent woman. I saw that some tact would be necessary to disabuse her mind of the fallacy, and I ventured to remind her that a diet that would produce so marked an effect upon her own system as to soften the bones might produce a very serious effect upon the child. She would not want a child to have bones so soft as to be bow-legged, and that idea seemed to take her. She went home, changed her diet, and in a few weeks she was in a very much better condition.

In regard to exercise. I should agree fully with Dr. Green as to the desirability of exercise, but the matter of gymnastic exercise has seemed to me to require careful instructions and caution on our part. I do not know whether there is any foundation to the popular notion that reaching the hands above the head is likely to cause the cord to encircle the neck. I should like to ask Dr. Green his opinion upon that point. In a general way I think gymnastic exercises should be somewhat restricted, to say the least.

There is one other matter which is perhaps trivial, and yet has been observed in the history of the Roman empire. It was the custom among the wealthy Romans to surround their pregnant wives with the most beautiful pictures and statuary so that the mother might be likely to produce beautiful offspring. I question how much direct influence such habits would have, and yet I think it would be well for a mother to accustom herself to viewing those things which are beautiful and which delight her mind to the end that the child may be comely. I know of many women who habitually during the months of pregnancy make it a point to look at pretty babies and at pretty little children and study to surround themselves with such things as appeal to their eye. I am not sure that it is an unpractical thought.

In the latter months of pregnancy iron is usually prescribed. I have been apt to use the German preparation as being less constipating.

With regard to the nipples, I have not observed any bad results from the custom of using the hot bottle, but have invariably instructed the patient to draw the nipple out with her fingers, and apply an astringent lotion, as Dr. Green suggests.

DR. C. W. TOWNSEND: My attention has been forcibly called recently to the importance of examining the urine. I think most of the cases of eclampsia are in women who have not been seen at all before the time of the eclampsia or until the immediate symptoms of eclampsia came on. I saw a patient of that sort the other night and it seemed to me if this patient had been seen a month before and the urine examined and proper treatment instituted the eclampsia could have been prevented, and the patient could have gone on to full term instead of requiring manual dilatation and version at the seventh month.

DR. H. F. VICKERY: I came with great interest to hear Dr. Green's paper, and was disappointed he did not have time to speak of the period after delivery. I hope he will in the second volume.

What Dr. Townsend just said reminds me of a most impressive incident. A physician was engaged by a bride to attend her in her confinement, and she was very anxious that he should not come near the house until pregnancy ended. When he was sent for, she was dying of eclampsia from renal trouble. It is a case which he regretted very much, although it was not his fault at all.

It seems to me that where albumen is found in many cases, it is not of any significance, because it is not associated with renal inflammation. I should always search for casts. In those cases where I have found casts I have always had trouble so far as I recollect now. I think, beside the other ways of determining whether there was danger, the microscope should be used.

I have just been obliged to draw the water of a woman recently delivered, for a week, and I read a suggestion this morning which dropped into a thirsty mind. I do not know whether any other gentleman has tried it; but this writer suggested that for some time before delivery a pregnant woman should be requested to practise making water on the bed-pan. I shall certainly request my nurses to ask their patients to do it. I would like to ask Dr. Green if he has had any experience about that.

DR. O. K. NEWELL: I have listened to this paper with great interest. It seems to me there is one important point in the management of pregnant women, and that is the determination by care and treatment of one kind or another whether or not the mother will be able to nurse her children. One outcome of civilization seems to be that women living under its influences tend to lose the ability to nurse children. Whether that is due to one cause or another is not for me to say; but it seems to me it is one very important aspect of child-bearing in this day and generation.

DR. J. C. MUNRO: Dr. Green spoke of giving Quevenne's iron. I think it may not be generally known that when Quevenne's iron is written for, the druggists are liable to give some inferior substitute, which is not so easily absorbed. In pregnancy and other conditions it is even more easily assimilated by combining with Vallet's mass. In the matter of cathartics Dr. Reynolds spoke of a number of the buckthorn bark preparations. I have used pretty steadily for three years the rhamnus frangula bark. Patients chew and swallow a piece of the bark as big as the finger-nail three or four times a day, gradually diminishing the dose. It is more efficacious than any cathartic preparation I have ever seen, especially among pregnant women or those chronically constipated. It is a drug not much used, because it is not expensive and not fashionable; but if physicians are careful to get the pure bark I think they will find it more useful than any preparation.

DR. GREEN: In regard to the preparatory treatment of flat or inverted nipples, I have never known harm to follow the careful use of the hot bottle. I doubt if the reflex irritation is sufficient to excite uterine contractions.

As regards the mental and nervous condition of pregnant women, it is of course important that in our efforts to guide women into ways of hygienic living we should not make them unduly mindful of trivial ailments nor excite their nervous apprehensions. My effort is to take the woman's mind entirely away from her pregnancy. To this end I advise against reading books which treat of pregnancy and labor; I inform patients, as far as is found necessary, of such things as it is well for them to know, and only ask them to follow the laws of correct living, and then notify me if anything goes wrong with them.

The practice suggested by Dr. Vickery of training women to pass their urine lying on their back was originally proposed by Skutsch. I have never followed this plan, and doubt the wisdom of it. It is well to remember that some women, who cannot pass water lying on their back, can do so by resting on the hands and knees. Most women in the lower classes sit up on a chamber-vessel to urinate, and in spite of tradition to the contrary, I am not sure that such a procedure is harmful, unless there is much weakness, a torn perinæum, or organic disease of the heart.

Dr. G. G. Sears read a paper on

THE ETIOLOGY OF ACUTE PLEURAL EFFUSIONS.[2]

Dr. F. Minot: I should agree with the reader as to the necessity for making careful observation of a patient with acute pleurisy for a long time afterward; but I think the question of the effect of simple pleurisy in producing pulmonary tuberculosis at a later period is one that it is almost impossible to determine at the present time, since tuberculosis of the lung is the most frequent of all diseases, causing about one-seventh of all deaths. There is no question, of course, that a very large number of cases of acute pleurisy recover completely, the patient living a long time, and never showing symptoms of tuberculosis. The frequency of pulmonary tuberculosis makes it very possible that a former pleuritic patient should be attacked with it, as well as anybody else; but I do not think the true connection between the two is so far established by statistics as to make it very probable. Undoubtedly there are some cases in which pleurisy with effusion is primarily tuberculous. In other cases the patients may have had latent pulmonary tuberculosis, and a small tubercular cavity might break into the pleural cavity, and the bacilli gain admission in that way; in others, through the lymphatics or blood-vessels. A practical point is the importance of early aspiration of the chest in all cases of serous effusion, on the bare supposition that the pressure upon the lung might develop the disease latent there in the lymphatic glands.

Dr. Vickery: I have been much interested in this paper, and I have little to add. There is one thing, — a lung which has been allowed to retract by the presence of a large effusion is not favored with such æration as in normal circumstances, and affords a good nidus for any bacilli that come along. I suppose we all breathe tubercle bacilli more or less into our lungs, and they are overcome there by the cells; and in the disabled lung the danger is greater than in the healthy lung. So, whatever our views may be as to this yet unsettled point, there can be no question in my mind that the care of a person who has had acute pleurisy with effusion should be very great in hygienic measures to protect him against tuberculosis. A good many of those gentlemen who have seen favorable results follow acute pleurisy have patients in such circles of society with so much intelligence and wealth that they are more apt to get well even if they have tuberculosis. I think that is one reason why Dr. H. I. Bowditch entertained so favorable a view of pleurisy with effusion, and why a good many country doctors are very much surprised that there is any such discussion going on. Their cases are in the open air, and one or two bacilli do not make much difference. The tissues and the oxygen in the air overcome them.

Dr. H. Jackson: I think it is a most difficult matter to prove one way or the other, but clinically it seems to me very difficult to believe that ordinary simple pleuritic effusion is due to the invasion of tubercle bacilli. Tuberculosis of the pleura and of the peritoneum is not very rare, and when it does exist there is some anatomical lesion of the surface. Most authorities consider bloody effusion usually points to the presence of tuberculosis as a cause; also, as seen in the lower animals, miliary tuberculosis of the peritoneal cavity is very apt to cause a slightly bloody fluid, and the pleura is thickly studded with miliary tubercles. I think, if we assume that tuberculosis is the cause of ordinary pleurisy, we must at the same time assume that it causes that effusion without giving rise to any anatomical lesions of tuberculosis, that is, to the presence of miliary tubercles or of new formed tissue. That, I myself am not prepared to believe. I do not believe tubercle bacilli will cause effusion without some anatomical lesion in the pleural surface.

Dr. Vickery: I think that tubercle bacilli have been seen in the false membranes following pleurisy with effusion, on section. Perhaps it is just chance that they were there.

Dr. Jackson: I did not know of their being found in that particular way.

Dr. F. I. Knight: There seems to be a general feeling of uncertainty in regard to the matter, in which I share. It is one of those questions which I feel is still under judgment. Certainly I have seen a good many cases of complete recovery from pleuritic effusion, and I have also seen a good many cases where I could not but feel that the invasion of bacilli and subsequent disease was induced by the crippled condition of lung by long exposure to pressure, and I should certainly like to emphasize the point Dr. Minot has made, that that is one great reason for early interference. If the effusion remains any great length of time, more than four or five weeks, we almost never see complete recovery. There is a decided want of expansion left, which seems to me to be always an invitation, as it were, to other pathological processes.

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MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

Regular meeting, December 16, 1891.

Dr. V. Y. Bowditch read a paper on

THE ESTABLISHMENT OF SANITARIA FOR PULMONARY CASES IN THE IMMEDIATE VICINITY OF OUR GREAT CITIES.[1]

Dr. Mason: I am sure that Dr. Bowditch's sanitarium will be of the greatest possible service, especially when its scope is increased through larger means, so that more patients can be received, and when it can be made available for men. At present there is the greatest difficulty in Boston in having a male phthisical subject in the early stages taken care of for a long time. They come to our out-patient departments and wards for a few weeks and then disappear. They are not able to pay a large amount of money for their support, therefore they generally go rapidly from bad to worse. The women have a better chance in small homes for that purpose. I do not think a large number recover in the small city establishments. I hope the time will not be long before Dr. Bowditch's sanitarium will be able to receive at least a few men such as present themselves every week at our hospitals and have to be turned away without much hope of benefit.

Dr. Osgood: One factor of Dr. Bowditch's sanitarium, which I am very glad has been opened, I wish to endorse strongly, and that is the separation of his patients. This plan recalls to me an interesting visit which I made ten or twelve years ago at the Hospital for Consumptives in Ventnor, Isle of Wight. For, at this institution, consumption was treated upon what was called, the "separate system." At the time this hospital was opened the bacillus of consumption, of course, was unknown, and undoubtedly the separate plan of treatment adopted resulted simply from the observation of physicians, namely, that consumption, if not contagious, presented a good many strange coincidences in cases where persons who took care of the consumptives themselves were attacked by the disease. However that may be, the Ventnor plan, so far as I know, was in advance of any treatment of consumption that is in general use to-day, and I would like to ask Dr. Bowditch if his sanitarium is not the only one in the country in which patients are treated on the separate system, which, of course, is the only one to be used in this disease.

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[2] See page 192 of the Journal.

[1] See page 190 of the Journal.

Dr. Bowditch: I cannot say positively. I know of Dr. Trudeau's sanitarium at Saranac. He never has more than two patients in a room, and most of them have separate sleeping apartments.

Dr. Osgood: In the Ventnor Hospital, by means of charitable donations, every patient, even the poorest, had his private room. I am quite able to sympathize with Dr. Bowditch's new project, because, being connected with the Home for Incurables, I am fairly pestered by people who demand entrance for consumptives into the Home. Our regulations refuse admission to such cases. It seems to me there is no question as to the great need of such retreats for consumptives among the poor and I hope Dr. Bowditch's sanitarium will become rapidly enlarged.

Dr. Knight: I think there can be no question in the mind of any one who has had to deal with pulmonary disease, tuberculosis particularly, that it is one that requires such constant care and supervision that it can be afforded much better in an institution than out of it, it being not the disease which has to be treated at present, but the condition of the patient, and the factors are so many which have to be regarded in improving the condition of the patient and enabling him to withstand the disease and bring about its ultimate arrest, that it is only the most constant care which brings about in the majority of cases the successful result, and there is no question that the results are better in sanitaria than outside of them. Of course the sanitaria in health-resorts like Colorado are going to show better results as a rule. There are two in Colorado Springs and it is fair to suppose that their results are going to be somewhat better at any rate than sanitaria in our own neighborhood, but the constant care which they get in the sanitaria here is going to be productive of excellent results.

The first time that this subject was brought to my mind very forcibly that hospital treatment was good for consumption was when I was in Bellevue temporarily serving with the elder Flint. He said one day "Did you ever notice how well these consumptives do in the hospital although our diet is poor and you would suppose in the crowded condition of our wards that they would not do particularly well, but you notice how well they are doing, and they are not having any medicine. You see what the regulation of their life will do for them." This was true, so far that the majority of consumptives who came in in all stages, improved from the judicious regulation of their diet and habits of life. Now it is perfectly well known that a patient will undo in one day's over-exercise, all that you have done for him in six months. That is not likely to happen in the sanitarium, neither are they likely to be upset in the thousand and one ways that their relatives and friends at home offer them. That is one advantage, being free from the constant meddling and annoyance of friends.

Then the association of patients with the same disease curiously enough leads them to feel very differently in regard to it. They talk over their symptoms, expectoration, consolidation and bacilli just as we talk about matters of medicine, with no more feeling really than we have.

The other day when I was at Sharon, I was asked to drive down to the station with an attractive young lady. She had been discharged at the end of a week's residence. She was supposed to have serious disease, but upon careful examination it was found that she did not have tubercular disease at all. I imagined she would rejoice at getting away from all those people, but, on the other hand, she was mourning that she could not stay. She said it was a delightful place and she would liked to have staid several months, so that the impression made on her mind in a week's time was only a pleasant one.

Dr. Bowditch, in closing, stated the present capacity of his sanitarium was for nine women. Incipient cases were especially desired, since they offered better prospects of cure. It was not a hospital. All the patients were up and about and able to take walks. They were not obliged to lie in bed unless something occurred which made it desirable to remain in bed for a day or two. There was no provision for free patients at present. The price of board for each patient was five dollars per week.

Recent Literature.

Manual of Chemistry. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons. Third edition, thoroughly revised. With forty-four illustrations and seven colored plates. Philadelphia: Lea Brothers & Co. 1891.

An earlier edition of this manual has been reviewed in these columns, and it is unnecessary therefore to give this one an extended notice. The book has been prepared specially for the use of students of medicine and pharmacy, and includes descriptive chemistry, qualitative analysis, and physiological chemistry. It is, of course, impossible to do full justice to these three branches of chemistry in a book of the size of this one and it is not surprising that many subjects have failed to receive, at the hands of the author, the attention that their importance demands. In spite, however, of some deficiencies of this kind the book is better than many of the works on chemistry which have been thrown upon the world during the past few years, and will doubtless be found useful in connection with lectures and laboratory demonstrations covering the same ground. As a text-book or book of reference for students in general, we do not see that it supplies any present want.

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ABSORPTION OF DRUGS BY THE SKIN.

The old question of the absorption of drugs through an intact epidermis has been revived by Peters[1] who seems to have thrown a new light upon the subject. Almost all carefully conducted experiments (for example, Röhrig, 1872, Fleischer, 1877, Yuhl, 1884, Riker, 1886) have shown that when ointments containing potassium iodide are rubbed into a sound skin, none of the KI is absorbed. This drug has been usually selected, not on account of its harmlessness, but chiefly because of the ease with which very small amounts may be detected in the secretions. When any iodine was found in the urine, as did sometimes occur, it was thought, in view of its infrequency, that an absorption had occurred by means of a mucous membrane (vapor of the material used) or that a skin abrasion had been overlooked. Rózsahegyi,[2] on the other hand, had maintained that the skin could absorb small amounts of the iodide, but believed the amount too small to be of therapeutic significance. He also pointed out that for the detection of small quantities of iodine, the liquids in question should be evaporated and then carefully extracted with alcohol and ether, and also that CS_2 was a better reagent than starch or chloroform for iodine which should be set free by a mixture of strong nitric and sulphuric acids.

Peters made use of Rózsahegyi's method (with some modifications) and finds the CS_2 reaction of such delicacy that he can detect iodine in a KI solution of 1:80,000. He found that when fresh ointments, of varying composition as to fat, but all containing KI, were used, a very small amount of I could be detected after a few hours in the urine when properly examined, even though the liquid, before evaporation, gave negative results. The failure of other observers in similar experiments is thought to be due to the imperfection of their method, although that has usually been one which had meet with general approval. None of these results are quantitative and simply show the absorption of very minute quantities of the iodide and it is still difficult for any one but a therapeutic enthusiast to look with much favor upon this kind of medication, so far as the action of the drug itself is concerned.

The article of Peters led Paschkis and Obermayer[3] to publish a brief statement of some positive results obtained by them. They used the oleate of lithium made into an ointment with lanolin. This metal was chosen on account of the ease with which small quantities may be detected by the spectroscope. The ointment was rubbed into the skin of the back of one of the experimenters on two occasions and once a hairless African dog was exposed to the spray of a five per cent. solution of the chloride of the same metal. In each of these cases lithium could be detected in the urine, but the quantity was exceedingly small, enough so to make any therapeutist sceptical.

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TYPHUS FEVER IN NEW YORK.

During the past week typhus fever cases have continued to develop among the Russian Hebrews who came over on the *Massilia*, but with the possible exception of a supposed case of the disease in an Italian, received at Bellevue Hospital, none have occurred outside of these Russian immigrants.

During the past week three deaths have occurred from typhus fever. One new case was reported on February 18th, and four on the 19th. Several cases have also been reported among the Russian passengers who had gone to other places before the disease was discovered by the Board of Health, among them being cases at Valatie, Columbia County, N. Y., and at North Oxford and Oakdale, Mass.

The number of deaths that have occurred from typhus fever in New York since 1865 is as follows:

1866	132	1878	4
1867	189	1879	4
1868	137	1880	3
1869	125	1881	160
1870	96	1882	67
1871	65	1883	15
1872	86	1884	27
1873	39	1885	15
1874	14	1886	14
1875	28	1887	0
1876	20	1888	4
1877	17		

Since 1888 there have been no deaths from the disease until now.

In order to stamp out typhus fever as promptly as possible in the city, the New York Board of Health has appointed ten special sanitary inspectors, selected from the physicians of New York, whose duty it shall be to make a house-to-house visitation of all tenement and lodging houses, in order to discover any cases that may hitherto have escaped the notice of the authorities. For this purpose the city has been divided into ten districts, and each inspector is required to visit every house in his district and personally examine all its inmates. He is also instructed to make a thorough search for small-pox cases, and is provided with virus to vaccinate all persons who are willing to have this done. Cases of small-pox are being discovered every day in the city, and thus far forty-one cases have been reported during the present month; a very unusual number.

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[1] Peters: Ueber die Resorption von Iodkalium in Salbenform. Centralbl. f. Klin. Med., 1890, 937.

[2] In a Hungarian Journal and in the Jahresber ü. d. Fortsch. d. Pharmacog., Pharm. u. Tox., 1878, 564.

[3] H. Paschkis and F. Obermayer: Weitere Beiträge zur Hautresorption. Centralbl. f. Klin. Med., 1891, 65.

ANNUAL APPROPRIATIONS FOR HOSPITALS IN BOSTON, OTHER THAN THE CITY HOSPITAL.

The Committee on Cities of the Massachusetts Legislature gave a hearing on Wednesday last, on the question of allowing the City of Boston to give annual appropriations to hospitals other than the City Hospital. A large number of citizens representing different interests appeared against the bill. The only person appearing for it was the member who first introduced the measure in the Common Council, but his advocacy seemed half-hearted and as if chilled by his surroundings, and when he realized his solitary position he readily acquiesced in the proposition to report, inexpedient to legislate.

We are really amazed that any one should have had the temerity to go to the legislature or anywhere else with a proposition so pregnant with possible mischief.

MEDICAL NOTES.

Randall's Island Hospitals. — The New York Commissioners of Public Charities and Correction have appointed William James Morton, M.D., neurologist to the Randall's Island Hospitals.

Immigration and Typhus. — A resolution has been introduced in the national House of Representatives in concurrence with the Senate providing for an investigation by the Senate and House Committees on Immigration, of the law relative to immigration, and the facts attending the condition of the typhus-stricken Russians at New York.

Removal of Filth at Quarantine. — Since the outbreak of typhus fever in New York, the quarantine officers in Boston have devoted especial attention to Russian Jews. Nine from the steamer *Norseman* and forty from the *Huron* were removed to the quarantine station, and were compelled to take a bath and remain until their clothes were thoroughly cleaned. An account of their first impressions of America would be interesting.

An International Congress of Gynæcology and Obstetrics. — The Belgian Society of Gynæcology and Obstetrics has taken the initiative in the organization of a series of International Congresses to be held every four years in Switzerland and Belgium alternately. The first Congress is announced to take place at Brussels between the 14th and 19th September, 1892. Three main questions are set down for discussion — (1) Pelvic Suppuration, by Dr. Segond (Paris); (2) Extra-Uterine Gestations, by Dr. Martin (Berlin); (3) On Placenta Prævia, by Dr. Berry Hart (Edinburgh). The Secretary-General is Dr. Jacobs, of Brussels.

Cholera among the Pilgrims to Mecca. — According to the Egyptian delegate to the Hedjaz, Dr. Saleh Soubhy, there were in 1891, 46,953 pilgrims who came by sea on their pilgrimage. Of these, 25,253 returned to their homes, the remainder, 21,700 having died, most of them with cholera. Of the large number journeying entirely by land the mortality can only be estimated.

Famine in India. — Official notice has been given in Bombay that famine prevails in that Presidency, and that the famine code will be applied over an area of 6,000 square miles, including the districts of Bijapur, Belgaum and Dharwar. These districts contain a population of 1,500,000 persons.

Calomel and Morphine. — During the last year and a half five deaths have occurred in Prussia by the dispensing of morphine by mistake for calomel. On this account the Prussian government has decreed that in future morphine and its salts must be kept by apothecaries in distinctive cupboards, and it is forbidden to prepare mixtures in which either morphine or calomel is used in powder until needed to fill a prescription.

BOSTON.

Bequests to Institutions. — By the will of the late Richard D. Rogers, the sum of $10,000 is bequeathed to the House of the Good Samaritan.

Boston Board of Health. — The Board of Aldermen have confirmed E. J. Donovan as a member of the Board of Health for three years, and for the unexpired term of E. L. Pilsbury, resigned.

Deaths in Boston. — During the past week there were 206 deaths reported, against 184 for the corresponding week last year, making the death-rate 23.3. The deaths reported as due to influenza were four, consumption 22, pneumonia 27, bronchitis 15. Persons over sixty years of age, 42.

An Elevated Road through Hospital Grounds. — A proposed elevated road in the west end of the city, which was to go through the property of Massachusetts General, the Lying-in, and the Samaritan hospitals and the West End Nursery was last week vigorously opposed by representatives of these institutions before the Rapid Transit Commission.

NEW YORK.

Influenza seems to have revived to some extent, as on February 18th, seven deaths were reported from it; the largest number since February 3d, when there were eight deaths.

Investigation of a "Keeley Institute." — A resolution introduced into the State Senate to investigate the treatment at the Keeley Institute at White Plains, has been referred to the Committee on Public Health.

The Rapid Breather.— The physicians who examined Michael McCarthy, the patient whose extraordinary rapidity of respiration was supposed to be due to a lesion of the medulla oblongata, at Bellevue recently, have been not a little astonished within the last few days to learn that his apparently incurable malady has suddenly disappeared. This was brought about, it seems, by a visit to Father Adams, a suspended Roman Catholic priest of Brooklyn, who professes to cure disease by the application of certain holy relics in his possession. It would appear, therefore, that the case was really one of hysteria, or, at all events, of functional character, and that the impression made on him by the priest and his relics was sufficient to remove the difficulty, at least for the time being. It is said that the man received $4,000 damages from the Boston Electric Car Company, on account of the result of the injuries he received. Since publicity has been given to this "miraculous cure" by the newspapers, the reverend father has been fairly besieged by hosts of sufferers of various kinds, the lame, the halt and the blind.

Suit against a Hospital.— A case of considerable interest has been in the courts during the past week. Suit was brought for $50,000 damages against the New York Hospital for the loss of a boy's leg which, it was claimed, was due to incompetence and negligence on the part of the hospital surgeons and nurses. The judge finally dismissed the case on the ground that inasmuch as the New York Hospital was a charitable corporation, a suit, under the laws of the State, could not be sustained against it.

Miscellany.

EXECUTION BY ELECTRICITY.

At a meeting of the Section on Public Health and State Medicine of the New York Academy of Medicine, February 17th, Dr. Ira Van Gieson, who made the autopsy, with microscopical examinations, on the body of Kemmler, the murderer, executed by electricity at Auburn prison, gave a report of the results of his examination. He described the appearances of the various parts of the body in detail, and asserted that in such executions, beyond the blistering of the skin by the electrodes, the current passes through the body without producing any effect upon the organs or internal tissues. The blood corpuscles, red and white, he declared were not affected either by rupture or contraction or in any other manner by the passage of the current.

Dr. Samuel Lockwood, of Freehold, N. J., however, in a paper read before the New York Microscopical Society, on February 19th, on "The Blood of Kemmler after His Electrocution, Demonstrating the Effect of Electric Shock on the Blood Corpuscles," stated that there were certain changes produced in the blood. He examined two specimens of Kemmler's blood — one taken from the back of the head, near the place of contact of the electrode, and the other from the thigh, where the blood was not in the direct line of the current, and was only affected by the general diffusion of the electricity through the body. He found that the corpuscles were both smaller and fewer in number in the blood from the head than in that from the thigh. The contraction in size, he believed, however, was due to the heat produced by the current.

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BIRDS AS SURGEONS.

Some interesting observations relating to the surgical treatment of wounds by birds were recently brought by M. Fabio before the Physical Society of Geneva.[1] The author quotes the case of the snipe, which he had often observed engaged in repairing damages. With its beak and feathers it makes a very creditable dressing, applying plasters to the bleeding wounds, and even securing a broken limb by means of a stout ligature. On one occasion he killed a snipe which had on its chest a large dressing composed of down, taken from other parts of the body and securely fixed to the wound by the coagulated blood. Twice he had brought home snipe with interwoven feathers strapped on to the side of fractures of one or other limb. The most interesting example was that of a snipe, both of whose legs he had unfortunately broken by a misdirected shot. He recovered the animal only on the following day, and he then found that the poor bird had contrived to apply dressings and a sort of splint to both limbs. In carrying out this operation some feathers had become entangled around the beak, and not being able to use its claws to get rid of them, it was almost dead from hunger when discovered. In a case recorded by M. Magner, a snipe which was observed to fly away with a broken leg, was subsequently found to have forced the fragments into a parallel position, the upper fragments reaching to the knee, and secured them there by means of a strong band of feathers and moss intermingled. The observers were particularly struck by the application of a ligature of a kind of flat-leaved grass wound round the limb, of a spiral form, and fixed by means of a sort of glue.

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INFLUENCE OF COLD ON THE PRODUCTION OF PNEUMONIA.

Lipari,[2] in a paper on the above subject, says that, along with the pneumococcus, cold is of great influence in causing pneumonia. Animals which have remained well after an intra-tracheal injection of pneumonic sputum become affected with pneumonia very quickly if exposed, either before or after the injection, to cold. The author thinks that the cold disables the ciliated epithelium of the bronchi, and causes a swelling of the mucous membrane, by which means the entrance of the infectious material into the alveoli is facilitated.

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CHRONIC ARSENIC POISONING.

The theory proposed by Selmi, that toxic gases are formed by the action of microbes on pigments contained in wall-papers and the like, has received additional support by the recent experiments of Gosio in the laboratory of the Public Health Department in Rome.[3]

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[1] Medical Press, December 16.

[2] Fortschritte der Medicin, December, 1890.

[3] British Medical Journal, December 26th.

This observer made nutrient media of potato paste, impregnating them in some cases with arsenious acid, and in others with various arsenical pigments; the nutrient media thus prepared were exposed for some days to a constant current of air, which was drawn over them by means of an aspirator. The air after it had passed over the paste was made to bubble through a solution of silver nitrate, which would detain all volatile arsenical compounds which might have been formed. As a result of this first rough experiment the author found that many moulds and some fission fungi developed on the arsenical media, and that very appreciable quantities of volatile arsenic compounds were given off. Proceeding then to isolate the different species which developed, and testing the action of each on fresh sterile prepared media, he found that only two species — mucor mucedo, and in a less degree penicilium glaucum — were able to split up the solid arsenical compounds as above described. From a great number of experiments he comes to the following conclusions: Mucor mucedo will grow well in presence of a notable quantity of arsenic; it seems to grow more luxuriantly under these than under normal conditions. Many fixed compounds of arsenic, and among them the green pigments ordinarily used, are changed by the growth of these moulds into gaseous bodies, among which is certainly arseniuretted hydrogen. The sulphides are not decomposed like the oxygenated compounds, but their presence in the culture media seems in no way detrimental to the growth of the moulds. Under certain conditions of light, moisture, and temperature, it is possible to obtain arsenical gas by the growth of mucor mucedo (and perhaps other mucorineæ) on tapestry colored by either Scheele's or Schweinfurt's green. Thus without denying the possibility of occasional poisoning by detached particles, the author considers he has made out a strong case in favor of the germ theory of arsenical poisoning.

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THERAPEUTIC NOTES.

ANTIDOTE IN PHOSPHORUS POISONING. — Bókai and Koranyi[1] recommend a solution of permanganate of potash, of the strength of from one-fifth to one-third per cent. as an antidote in phosphorus poisoning. This solution oxydizes the phosphorus into a harmless phosphoric acid, whereas the solution of permanganate if no stronger than one-half of one per cent. does no harm to the stomach.

EUCALYPTOL.[2] — Mr. G. Archie Stockwell shows, in the *Bulletin of Pharmacy*, that eucalyptol is not a proper name for oil of eucalyptus, but should be restricted to eucalyptus camphor, this perversion of the word being either due to ignorance or for ulterior ends. Eucalyptus camphor, however, has no therapeutic value beyond that of a good oil, which, as it is a pure terebinthinate, may agreeably be substituted for common oil of turpentine.

BROMIDE OF ETHYL AS AN ANÆSTHETIC.[3] — Witzel reviews the results obtained in four hundred and sixty-five administrations of ethyl bromide as an anæsthetic. The effects were good, except in twenty-eight cases, in which the following disagreeable symptoms were noted: Great excitement in nine cases, in four of them with marked sweating; cyanosis in two patients, who were hilarious students; asphyxia, which lasted a short time upon the occurrence of anæsthesia in a number of cases, and in two cases long enough to make artificial respiration necessary; indisposition and weakness in the limbs in three of the cases, with severe vomiting; urination in three cases, great sexual excitement more frequently; in two cases, 60 and 30 grammes respectively of ethyl bromide failed to produce anæsthesia.

PEROXIDE OF HYDROGEN. — Richardson[4] in a long paper on the medical uses of this substance gives, among others, the following prescriptions:

For a gargle,

℞	Acidi tannici		gr. x.	
	Glycerin		ʒ i.	
	Alcohol		℥ ss.	
	Aquæ distil.		℥ iv.	
	Sol. hydrogen peroxid. (10 vols.)	*ad*	℥ viij.	M.

For anæmia, and in the first stage of phthisis,

℞	Sol. hydrogen peroxid. (10 vols.)		℥ iiss.	
	Acidi phosporici dil.		ʒ i.	
	Syrupi ferri hypophos.		ʒ iv.	
	Glycerin		ʒ i.	
	Aquæ	*ad*	℥ vi.	M.

Dose, one ounce.

For severe cough,

℞	Sol. hydrogen peroxid. (10 vols.)		℥ iiss.	
	Morphinæ hydrochlor.		gr. ss.	
	Syrupi tolu		ʒ vi.	
	Glycerin		ʒ iiss.	
	Aquæ	*ad*	℥ vi.	M,

Dose, one ounce.

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Correspondence.

LETTER FROM JAPAN.

YOKOHAMA, JAPAN, January 20, 1892.

MR. EDITOR: — The general hospital here, excellently located on a hill, was built about eighteen years ago. It has accommodations for about fifty patients of both sexes. Sleeping arrangements seem to be mixture of foreign and native ways, that is, partly in cots, partly on mats on the floor. Sewers are used to let water run away; but intestinal discharges are received in vessels and carried off. Roses were blooming in the hospital grounds — mid-January.

A Japanese gentleman from the *Ken cho* (City Hall), was my friend and guide (in schools, hospitals and language). The physician in charge understood English, without venturing to speak the tongue, which so many of the Mikado's subjects are learning — especially in the last three of the eight years' course in the public schools.

In the vicinity is the "lock-hospital," with room for more than the present inmates. This building was formerly used for a much larger territory. Recently, however, each political subdivision has its own temporary home for the afflicted. A hospital for contagious diseases is situated on the outskirts of the city. January 13th, 120 cases of smallpox were reported in Yokohama, 747 in Tokyo. The local authorities are using vaccination to stay the spread of the disease in both cities; near this city is a crematory, whence the bones alone are taken for burial in the ground; but the old method of inhumation is yet largely practised. Burial of the body is forbidden within the city limits of Tokyo.

In Tokyo, Dr. T. Nakahama (Director of the Tokyo Hygiene Laboratory, Member and Manager of the Central Board of Health), conducted me about the institution under his charge, the chief one of the empire, others being at Osaka and Yokohama. At these laboratories are made examinations of all food-stuffs and all other articles connected with the health of the people. As health officer, Dr. Nakahama is obliged to go to various parts of the Empire to investigate epidemics or special diseases, and inspect local sanitary conditions. This place is fitted up with all the modern appliances for chemical analysis, bacteriological studies, etc. During the past few months *tuberculin* has been made, apparently the same as that received from Berlin. Experiments with *tuberculin* are being made on guinea-pigs. Many "cultures" were *in situ* — the various stages of such work in active operation. The museum has an extensive variety of filters, disinfecting apparatus, heating contrivances, models of sanitary appliances, etc. The library consists largely of German publications, with works in other foreign tongues. The periodicals have the familiar look of European and American journals, — German, French, English, American publications.

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[1] St. Petersburg med. Woch.
[2] American Journal Medical Sciences.
[3] Therapeutic Gazette, January.
[4] Asclepiad, Fourth Quarter, 1891.

The government has decided to supply Tokyo with "water-works" extending thirty miles distant to source of supply. The people were largely opposed to this, probably chiefly because of the great expense. But the authority, in this land, is yet in the hands of the intelligent, and the uninformed masses are forced to adopt modern ways that appear to be good, even if "old ways are good enough." The question of drainage, sewerage, etc., must be left, for the present, till the revenue will allow the needed outlay.

A few steps from this institute, is a branch of the University Hospital (to which I referred in a former letter), these two being the only public ones in the city. This is similar in form and accommodations to the other, though smaller. At this season, only about half the space is occupied. In the summer (warm weather) there are many more patients.

The annual reports for the past year have not yet been published. Very respectfully,

F. B. Stephenson, *Surgeon, U. S. N.*

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A NEW AND SAFE WAY OF EXPEDITING DIFFICULT CASES OF LABOR.

Boston, February 8, 1892.

Mr. Editor: — Dr. Marshall L. Brown, in the Journal of February 4th, speaks of a new and safe way of terminating difficult labors by pressure upon the abdomen. I am surprised to learn that it is either new or safe.

My preceptor forty years ago was a well-known accoucheur, and widely demanded as a consulting physician in confinement cases. He practised in my presence, and taught me to add force to uterine action when the uterus was incompetent of itself, and that practice was followed by me for many years.

A case came into my hands from a neighboring doctor who had spent two days and two nights with the young woman in her first confinement. Getting discouraged on the second night and also desiring to be relieved to see other patients, he gave the woman ergot while the cervix was but little dilated. It acted on the muscles of the lower segment as well as on the expulsive muscles, thus holding the child back as much as it was forced downward, causing excruciating suffering, which he relieved by shutting off the muscular action by doses of morphine.

When I reached the case, four miles away, in the early morning, uterine action was almost totally suspended and the cervix dilated to the size of a quarter of a dollar; but all things were natural. Having nothing to do but wait, I returned home, to be sent for when labor started up again, which it did very tardily at eight o'clock that evening. The pains were not strong, and the cervix but slowly gave way before them; I had my forceps with me, but thought that there was really no necessity for their application. Being more familiar with their use to-day, I should probably apply them in a similar case. As it was, I did not, but applied my hand over the uterus pressing and relaxing with the pain. The uterus had been so much exhausted by overaction from the ergot that there was not natural force to do the work and no prospect for the termination of the labor for a long time. As the cervix became more dilated, I got a strong woman to assist me, the patient making as strong expulsive effort herself as she could. At length she was safely delivered about seventy-two hours from the setting in of the labor.

That this procedure is always safe I do not believe; for I think I had a case in which the child was lost by it. This patient was about thirty-two. She was well developed and vigorous. She had had some half-dozen conceptions, which she somehow lost, the oldest fœtus being six months. Everything went well till the cervix dilated to the size necessary to let a six months' fœtus pass, when it seemed rigid and unwilling to dilate any further, though the pains were frequent and very strong, I applied such remedies as had reputation in overcoming rigidity. Years before I should have bled such a patient, but did not do it in her case, as the fashions of practice had changed. After many hours of this active work, during which the child was yet alive, the rigidity of the os began slowly to yield, when I began external pressure. Now the pains were long and the pressure correspondingly long, causing strangulation of the cord and the death of the child before it passed the upper strait; this I attributed more to the external pressure than to the uterine contractions themselves, strong though they were. To-day, in a like case, I would give more chloroform, and get on the forceps as soon as I could, deeming it safer to exert traction below than to add the force above when the uterus was itself so strongly acting. Relaxing the cervix by venesection would be the best method, being safer for both mother and child. Since the above I have more rarely resorted to external pressure.

Very truly yours, E. Chenery, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, February 13, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	806	326	14.04	21.24	3.60	.72	5.76
Chicago . . .	1,099,850	540	230	20.52	27.18	3.42	9.90	3.42
Philadelphia .	1,046,964	525	179	13.87	15.58	1.52	3.42	7.60
Brooklyn . .	806,343	387	134	17.16	21.84	2.86	.26	8.32
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	194	58	8.67	23.46	1.53	1.53	3.06
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	134	47	7.40	11.11	.74	1.48	4.44
Cleveland . .	262,000	118	42	10.26	16 00	.85	.85	4.25
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	104	37	17.28	12.48	.96	7.68	5.76
Milwaukee . .	240,000	93	43	22.47	18.33	2.14	4.28	12.84
Washington .	230,392	139	45	7.92	30.24	—	2.88	.72
Nashville . .	76,168	27	9	11.11	22.20	—	—	3.70
Charleston . .	65,165	38	13	—	2.63	—	—	—
Portland . . .	36,425	19	14	5.26	20.04	—	—	—
Worcester . .	84,655	32	9	9.39	12.52	—	—	9.39
Lowell . . .	77,696	50	22	12.00	24.00	—	6.00	—
Fall River . .	74,398	33	13	6.06	30.30	—	—	6.06
Cambridge . .	70,028	20	6	10.00	15.00	—	—	10.00
Lynn	55,727	15	3	—	13.33	—	—	—
Lawrence . .	44,654	27	3	22.20	14.80	14.10	7.40	—
Springfield . .	44,179	16	3	18.75	12.50	—	6.25	12.50
New Bedford .	40,733	14	6	7.14	14.28	—	—	—
Salem	30,801	12	1	8.33	8.33	—	—	8.33
Chelsea . . .	27,909	11	4	9.09	18.18	—	—	9.09
Haverhill . .	27,412	7	0	—	14.28	—	—	—
Taunton . . .	25,445	—	—	—	—	—	—	—
Gloucester . .	24,651	8	3	25.00	12.50	—	—	12.50
Newton . . .	24,379	6	2	—	33.33	—	—	—
Malden . . .	23,031	6	0	—	16.66	—	—	—
Fitchburg . .	22,037	14	4	7.14	50.00	—	—	7.14
Waltham . .	18,707	12	2	—	25.00	—	—	—
Pittsfield . .	17,281	3	2	—	—	—	—	—
Quincy . . .	16,723	5	0	—	—	—	—	—
Northampton .	11,990	6	0	—	33 33	—	—	—
Newburyport .	13,947	6	0	—	16.66	—	—	—
Medford . . .	11,079	2	0	—	50.00	—	—	—
Hyde Park . .	10,193	10	2	20.00	20.00	—	—	—
Peabody . . .	10,158	4	0	—	25.00	—	—	—

Deaths reported 3,443: under five years of age 1,252; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 493, acute lung diseases 725, consumption 340, diphtheria and croup 189, typhoid fever 108, scarlet fever 79, diarrhœal diseases 34, cerebro-spinal meningitis 23, whooping-cough 23, measles 13, erysipelas 11, malarial fever 8, puerperal fever 4.

From diarrhœal diseases New York 14, Brooklyn 5, Chicago 4, Cleveland 3, Milwaukee and Lowell 2 each, Boston, Cincinnati, Washington and New Bedford 1 each. From cerebro-spinal meningitis Chicago 9, Brooklyn 4, Philadelphia and Washington 3 each, Boston, Milwaukee and Lawrence 1 each. From whooping-cough Chicago 6, New York 4, Brooklyn 3, Philadelphia and Pittsburgh 2 each, Boston, Cleveland, Washington, Portland, Lowell and Gloucester 1 each. From measles New York 9, Brooklyn 2, Chicago and Nashville 1 each. From erysipelas New York and Brooklyn 3 each, Philadelphia 2, Boston, Cleveland and Washington 1 each. From malarial fever Brooklyn 5, New York 2, Chicago 1.

METEOROLOGICAL RECORD,

For the week ending February 13, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 7	30.10	25	35	15	58	100	79	W.	S.E.	6	6	C.	R.	.02
M.. 8	29.71	31	34	28	100	100	100	N.W.	N.E.	7	7	R.	N.	.04
T.. 9	29.87	30	34	26	89	70	80	N.W.	W.	7	9	O.	C.	
W. 10	30.01	28	32	23	62	61	62	N.W.	N.E.	12	6	C.	C.	
T..11	29.31	31	34	27	100	100	100	E.	N.W.	23	12	N.	N.	.59
F..12	29.22	27	33	20	78	72	75	S.W.	W.	14	12	C.	C.	.01
S..13	29.60	14	20	8	71	60	66	W.	W.	19	24	C.	C.	
☞	29.69	26	32	21	80	80	80			13	11			.94

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 13, 1892, TO FEBRUARY 19, 1892.

The leave of absence granted **Captain Walter W. R. Fisher**, assistant surgeon, U. S. A., is extended fifteen days.

The leave of absence on surgeon's certificate of disability granted **First-Lieut. James D. Glennan**, assistant surgeon, U. S. A., is extended fifteen days.

MUTTER LECTURESHIP OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The next course of ten lectures under the bequest of the late Prof. Thomas Dent Mütter, M.D., LL.D., "On Some Point or Points connected with Surgical Pathology," will be delivered in the winter of 1893–94, before the College of Physicians of Philadelphia. Compensation, $600. The appointment is open to the profession at large. Applications, stating subjects of proposed lectures, must be made before October 15, 1892, to

William Hunt, M.D., *Chairman of Committee*,
13th & Locust Sts., Philadelphia, Pa.

APPOINTMENTS.

R. H. Fitz, M D., has been appointed Professor of the Theory and Practice of Medicine in the Harvard Medical School.

H. P. Walcott, M.D., has been elected a Trustee of the Massachusetts General Hospital.

RECENT DEATHS.

Lewis H. Steiner, M.D. (Penn., 1819), librarian of the Enoch Pratt Library, Baltimore, died February 18th, aged sixty-four. He was at one time editor of the *American Medical Monthly*, and the author of numerous works on different subjects During the war he was chief inspector of the United States Sanitary Commission in the Army of the Potomac, and after the war reorganized the public schools of Frederick County, Maryland. In 1869 he received the honorary degree of A.M. from Yale College. In 1871 he was elected to the State Senate from Frederick County. When the Enoch Pratt Free Library was established six years ago, Dr. Steiner was elected librarian.

Charles Parke Kemp, M.D., died at Rugby, Tenn., February 12th, aged fifty-one. He gradnated from Harvard College in the class of 1862, and from the Medical School in 1866. He served for a year as house-officer at the Boston City Hospital, and then settled in Springfield, where he remained until 1879, when on account of ill health he went to Rugby, where he has since remained.

James Sweeney, M.D., died in Brooklyn, February 18th, aged fifty-four. During the war he served as surgeon of the 153d New York Regiment. He has twice been a member of the Brooklyn Board of Education.

Cœleb Burnham, M.D. (Dart., 1869), M.M.S S., of Lynn, died February 17th, aged fifty.

A. H. Paquet, M.D., Professor of Clinical Medicine in the Medical Department of Laval University, Montreal, died recently at St. Cuthbert.

BOOKS AND PAMPHLETS RECEIVED.

Annual Reports of the President and Treasurer of Harvard College. 1890-91.

First Annual Report of the State Board of Medical Examiners of New Jersey. 1891.

Bromoform in the Treatment of Pertussis. By E. J. Mellish, M.D. Reprint. 1892.

Cocoa and Cocaine. By William Martindale, F C.S. Second edition. London: H. K. Lewis. 1892.

Land Liberation as a Public Health Measure. By George Homans, M.D., St. Louis. Reprint. 1892.

Thirteenth Annual Report of the State Board of Lunacy and Charity of Massachusetts. January, 1892.

The Relation of Land Monopoly to Population Health. By George Homan, M.D., St. Louis. Reprint. 1891.

Report of the Directors of the Boston Training-School for Nurses, attached to the Massachusetts General Hospital for 1891.

Apparatus for Collecting Water for Bacteriological Examination. By Samuel G. Dixon, M.D., Philadelphia. Reprint. 1891.

Nursing in Abdominal Surgery and Diseases of Women. By Anna M. Fullerton, M.D. Philadelphia: P. Blakiston, Son & Co. 1891.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1891.

Notes on General *versus* Local Treatment of Catarrhal Inflammations of the Upper Air-Tract. By Beverley Robinson, M.D., New York. Reprint. 1891.

Pneumonic Fever; its Mortality, with a Consideration of Some of the Elements of Prognosis. By Edward F. Wells, M.D., of Chicago, Ill. 1892.

Forty-fourth Annual Report of the Trustees of the Massachusetts School for the Feeble-minded at Waltham, for the Year Ending September 30, 1891.

An Account of the Influenza as it Appeared in Philadelphia in the Winters of 1889–90 and of 1891–92. By J. Howe Adams, M.D., of Philadelphia. Reprint. 1892.

Annual Address before the State Board of Health of Pennsylvania. By Prof. Samuel G. Dixon. M.D., of Philadelphia. Read May 15, 1891, at the Sanitary Convention at Atloona.

The Microscope and Histology. Part I. The Microscope and Microscopical Methods. By Simon Henry Gage, Associate Professor of Physiology, Cornell University. Ithaca, N. Y.: Andrus & Church. 1891.

Report of the Board of Health of the City of Newport, R. I., on the Character of the Public Water-Supply. By Thomas M. Drown, M.D., Professor of Analytical Chemistry in the Massachusetts Institute of Technology, Boston.

The Complete Medical Pocket-Formulary and Physicians Vade-Mecum, containing over 2,500 prescriptions, etc. By J. C. Wilson, M.D., Physician to the German Hospital. Philadelphia: J. P. Lippincott Company. 1892.

Hospitals and Asylums of the World, Their Origin, History, Construction, etc., with plans of the chief medical institutions. By Henry C. Burdett. In four volumes and portfolio. Vols. I and II. London: J. & A. Churchill. 1891.

Diseases of the Skin. A Manual for Practitioners and Students. By W. Allan Jamieson, M.D., F.R C.P., Lecturer on Diseases of the Skin, School of Medicine, Edinburgh. Third edition. Philadelphia: Lea Brothers & Co. 1892.

A Treatise on the Ligation of the Great Arteries in Continuity, with Observations on the Nature, Progress and Treatment of Aneurism. By Charles A. Ballance, M.B., M.S., F.R.C.S., Assistant Surgeon to St. Thomas's Hospital and Walter Edmunds, M.A., M.C., F.R.C.S. London: Macmillan & Co. 1891.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.

The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening, March 2, 1892, at *eight* o'clock.

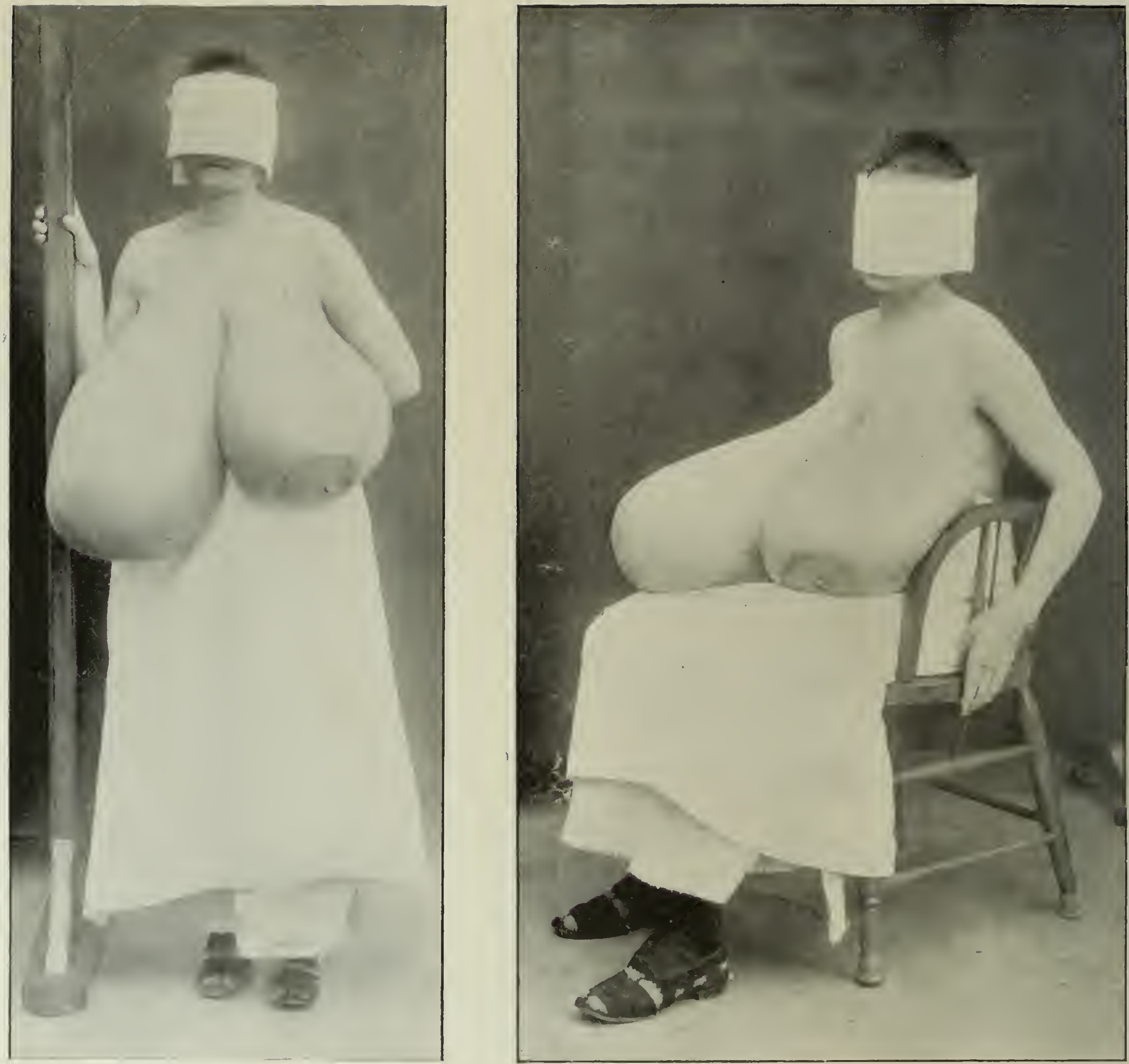
A report of experimental and clinical investigations into the use of Dermatol will be made by Dr A. K. Stone.

The general subject for Discussion will be the Surgery of the Liver.

Dr. W. W. Keen, of Philadelphia, will present a paper upon: "Three Cases of Hepatic Surgery: I, Resection of a large portion of the liver for adenoma of the bile ducts, recovery; II, Perforating gun-shot wound of the liver, laparotomy, recovery; III, Cholecystotomy in which the gall-bladder had to be reached through the pancreas, death" Dr. Geo. W. Gay, Dr. A. T. Cabot and Dr. M. H. Richardson will each report Cases of Cholecystotomy; Dr. M. H Richardson, A Case of Echinococcus Cyst of the Liver; Dr Homer Gage, of Worcester, A Case of Secondary Laparotomy for Pistol-shot Wound of Liver; Dr. Irish, of Lowell, Cases of Hepatic Abscess; Dr. S. J. Mixter, Retention Cyst of Liver.

It seems necessary to remind the members of the Section that the meeting is called for EIGHT O'CLOCK.

CHARLES L. SCUDDER, M.D., *Secretary*, 94 Charles Street.



DIFFUSE HYPERTROPHY OF BREASTS.

(CASE OF DR. C. B. PORTER. Page 181.)

Original Articles.

A CASE OF DIFFUSE FIBROMA WITH A TENDENCY TO INTRACANILICULAR GROWTH OF BOTH BREASTS; OPERATION ON EACH WITH AN INTERVAL OF THREE WEEKS; RECOVERY.[1]

THE SMALLER WEIGHED, AFTER REMOVAL, SEVENTEEN POUNDS, THE LARGER FORTY-THREE; COMBINED WEIGHT, SIXTY POUNDS.

BY C. B. PORTER, M.D.,
Surgeon Massachusetts General Hospital; Professor of Clinical Surgery, Harvard University.

I SHOULD not think of asking the attention of such a distinguished gathering of surgeons to the report of a single case, were it not that it falls to the lot of but few surgeons to see such a case, and still fewer to operate upon one.

My patient, Mrs. M., aged thirty-seven, was born and has lived in Nova Scotia. She entered the Massachusetts General Hospital just at the close of the service of Dr. A. T. Cabot, who did not think her at that time in a condition to undergo such serious operations, and she became a patient of mine in the service following his. Her family history is of no importance. Her personal history is that of ordinary health up to three years ago. Has borne two children, the youngest ten years old. Her catamenia have been regular and normal up to three months ago, when they ceased.

Three years ago she discovered a hard lump in the upper part of right breast, which gradually increased in size, and with it the whole breast. Three months after the right breast commenced to enlarge, the left breast became similarly affected, and at the end of six months the right was the size of a baby's head, and the left a little smaller. For sometime, then, the growth was very gradual; but three months ago a rapid increase took place, and they became so burdensome by their size and weight that she could not work and could stand only for a short time. She is most comfortable sitting with the breasts resting on a pillow in her lap. In the recumbent posture the pressure of the weight and the dragging upon the chest walls embarrass her respiration: so much so, that after her entrance to the hospital a frame was made upon which the breasts could be suspended. Never any pain: appetite good, and sleeps well. Pulse, 96; temperature, 97.8°.

Physical examination shows she is pale, emaciated, with ovarian facies. Both breasts enormously enlarged. Right breast: largest circumference, thirty-eight inches; length from chest wall to nipple, seventeen inches; circumference at base, twenty-three inches. Left breast: largest circumference, twenty-eight inches; length from chest wall to nipple, fourteen inches; circumference at base, twenty-three inches. Skin œdematous, thickened and porky. Throughout both are to be felt movable, hardened masses of irregular outline, varying in size from an orange to a closed fist. No tenderness. For two weeks every attention was given to building up her strength for an operation, which in size of wound would equal a hip-joint amputation. At the end of that time she was brought to operation. I decided to remove the left and smaller breast first. Feeling that loss of blood was one of the dangers, I had made two large skewers; with these I transfixed the breast vertically and horizontally close to the chest wall, and behind them placed a tightly-drawn rubber tourniquet. An anterior and posterior flap was made and the breast removed. All vessels large enough to be recognized were tied with sterilized silk before the tourniquet was removed, and little blood was lost. The operation so far was done in the sitting position; she was then placed upon a table and a few remaining pieces of the breast tissues removed. Continuous silk suture closed the wound, with bone drainage. Six days after the stitches were removed, and there was a slight oozing at two points. Four days later wound solid, and dressed with collodion dressing for support. Three weeks after first operation I removed the remaining breast in the same manner. This was followed by more marked shock than the first, but six hours after she had reacted well and was in good condition. Temperature, 98°; pulse, 80.

In ten days the dressings and sutures were removed, and there were two small stitch-hole abscesses. Convalescence rapid; and in ten days she was strong enough to desire to leave the hospital and visit some friends. There remained two very small granulating spots, and she was advised to report at the hospital soon, in case all did not go well. The sequel of this seems to have been decided by the irony of Fate, for the woman, instead of visiting her friends in the near vicinity of Boston and reporting in two weeks at the hospital, decided in a few days to return home, and took, in the middle of winter, a cold and perilous sea-voyage. She arrived home the day before Christmas, and called her physician to dress two small spots where the cicatrix had given away since she left the hospital. From a letter from her physician, Dr. C. A. Foster, of Bridgewater, N. S., I obtained the following history: At the time he first saw her, temperature and pulse were normal, but she was much exhausted by her sea-voyage and the attendant seasickness, which was violent during her whole passage, and she had suffered much from cold. For about a week she seemed to improve, when she developed erysipelas, first in the region of right breast, and then extending over back and abdomen. This in four days had faded markedly when she suddenly aborted a five to six months' fœtus, and died three hours afterwards in collapse.

It should now be stated that before she left the hospital my senior house-surgeon called my attention to an enlargement of the uterus, and her history stated that her catamenia had been absent three months before entrance. I told him as she knew nothing about it to let the matter drop. She might be pregnant, and that time would determine; she might have a uterine fibroid, but had better be left to find it out later, for after two such severe operations I was content that she was well. Her condition was not suspected until her convalescence after the second operation.

HISTOLOGICAL EXAMINATION.

The histological report is by Dr. W. F. Whitney, Pathologist to the Hospital.

"The section surface of the growth, which was irregularly divided into lobules, was of a slightly translucent, grayish color, and traversed by numerous irregularly branching chinks or fissures lined with a softer and more grayish opaque substance than the intervening tissue.

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[1] Read before the American Surgical Association, September, 91.

TABLE OF CASES.

No.	Reference.	Social Condition.	Age.	Breasts.	Duration.	Treatment.
1	Deutsche Chirurgie Lieferung, xli, § 43, p. 29. 1880. Billroth.	Domestic, single, virgo.	16 years.	Both. Left 23 in., right 19½ in. circumference.	2½ months.	Unoperated.
2	Billroth, 1880.	Domestic, pregnant.	22 years.	Both. Left 65 cm., right 68 cm. circumf.	5 months.	Unoperated.
3	Velpeau, 1857. Traité des Maladies du Sein. Paris, 1859.	Married, two sons.	43 years.	One. Left.	1 year.	Removed. Microscope.
4	Domarquay. Gazette Medicale. Paris, 1859, p. 818.	Married.	40 years.	One. Left, 66 cm. 4 kilog. Began during pregnancy	7 years.	Removed.
5	Gazette du Hôpital, p. 45. 1859. Manec.	Single.	17 years.	Both. Left 7.5 kilog., right 8 kilog.	1½ years.	Removed at 1 mo. interval.
6	Schmidt's Jahrbücher, cvi, p. 51. 1860. Lotzbeck.		26 years.	One. Left. After two pregnancies. 16½ lbs., 2 litres of milk.	8 years.	Removed.
7	Marjolin. Bulletin de la Société de Chir. Paris. Vol. ix, p. 342.	Single.	15 years.	Both. Right, 1,510 gms.		Removed R. Microscope.
8	Richet. Labarraque: Etude sur l'hyp. gia. Paris, 1875.	Single.	15 years.	Both. 1,985 gms., one weighed.	1 year.	Removed. Microscope.
9	Rosati and F. Calzi. Archivio della scuola d'Anat. pathol. Vol. ii.	Virgin.	14½ years.	Both. Right 109 cm. 7.2 kilo., left 84 cm. 3.3 kilo.	2 years.	Removed.
10	Humbert, 1885. Lancette Française, Gazette des Hôpitaux. Paris.		22 years.	Both.	1 year.	Unoperated.
11	T. J. Crofford. The Triennial State Medical Society, Little Rock, Arkansas. Vol. i, No. 12. June, 1891.	Virgo.	15 years.	Both. Right 27½ in., left 31 in. circumference.	1 year.	Removed.
12	Dr. Roy. Indian Med. Gazette. Vol. xvi. Calcutta. 1881.	Married, children, 8½ mos. pregnant.	30 years.	Right only; 14 in. long, 12 in. pedicle, 12 lbs.		Removed.
13	Le progrès Médicale, 14th year, 2d Series. 1886. Dr. Desenne.	Virgo.	15 years.	Both. Left 3 kilo., right 3.825 gms.	1 year.	Left operated, right operated later.
14	Prof. Baldassar. Gazetta Medica Torino, xxxv. 1884.		35 years.	Left, 53 cm. circumf.		Operated. Died on 14th day with fever.
15	Hoy. Practical Observations in Surgery. London. 1834.		14 years.	Both very large.		Left operated, right then diminished and cta. appeared.
16	Hess. Corresponzblatt des Vereins Nassausisher Aerzte, vol. 49, p. 17. 1859.			Both.		Operated at an interval.
17	Glück. Amtlicher Bericht uber die 39 Versammlung Deutscher Natuforscher und Aerzte in Geissen in Sept., 1864. Geissen, p. 219, 1865.			Both.		Operated at an interval. Microscope. Cysto-sarcoma.
18	Texas State Medical Association. Nelson.	Married, one child.	26 years.	One. 8¾ lbs.		Operated.
19	Western Medical Reporter. Chicago, 1884. Dr. Owen.	Married.	42 years.	Both. Right 22 lbs., left 23¾ lbs.		Operated.

"Microscopic examination showed the bulk of the growth to be made up of a fibrous tissue rich in cells, and holding in its interstices considerable thin serous fluid. Imbedded in this were gland acini and ducts widely separated, and into the openings of which the fibrous tissue had forced its way. These could be directly traced into the fissures seen with the eye, the lining of which proved to be flattened epithelial cells. In structure, therefore, the growth is essentially a diffuse intracanilicular fibroma, and is not to be regarded in the sense of a true hypertrophy of the breast; which is suggested by the bilateral and external, somewhat symmetrical shape."

Billroth, in the *Deutsche Chirurgie*, on "Diseases of the Breast," says that diffuse hypertrophy develops usually at the time of, or soon after, the first menstruation; most frequently it is noticed from the fourteenth to the sixteenth year. It begins, however, in some cases two or three years after the first menstruation. The development of the hypertrophy then goes on very rapidly for two to four months, and then, as a rule, maintains comparatively the same size, or increases still more with the first pregnancy, then to remain unchanged. In the cases I have been able to collect — nineteen in all — the time of life at which the disease commences varies much more than Billroth states — one being forty-three and another forty-two years old, and with those who were married, of which there were six, the ages varied from twenty-two to forty-three years. Of the unmarried, of which there were eight, the age varied from fourteen to seventeen years. There were three in which it was not stated whether married or single, and the ages were twenty-two, twenty-six, thirty-five, and there were two in which no age was mentioned, nor whether single or not. In thirteen cases both breasts were affected. Billroth says, in regard to the course of the disease, it alone is established that through the weight of the tumor the ability to do work is most altered, and that, as a rule, the nourishment of the subject of such affliction is bad. Any further constitutional influence does not seem to exist. He considers no constitutional or local treatment except amputation of any avail, and cites three cases, one each by Hanec, Hess and Gluck, where both breasts were removed at separate times with success. Billroth also states that within his knowledge no observations have been made as to whether such hypertrophied glands return to their former shape and size if the person becomes pregnant and nurses her offspring after birth.

In sixteen cases operated upon, nine had both breasts removed, and one, aged only fourteen, had both breasts very large; one was removed and the other diminished in size after her catamenia were established. Six who had only one breast affected had that removed. All the operations were successful except one in which the patient died on the fourteenth day with fever.

In conclusion, it would seem from this analysis that this disease develops mostly at the age of puberty, that nothing short of removal is of avail, and that only one case in sixteen died.

THE TREATMENT OF GANGRENOUS HERNIA.[1]

BY GEORGE W. GAY, M.D.,
Surgeon to the Boston City Hospital.

The cases of gangrenous hernia which will receive attention in this paper illustrate four modes of treatment, to wit: The expectant, or do-nothing method, a very good one in its place; returning the bowel, and closing or leaving the wound open; making an artificial anus; and resection of the intestine. Which of these, or of other methods, shall be selected in any given instance depends upon many circumstances, such as the kind and condition of the hernia, the age and state of the patient, and various other matters, which need not detain us at present. What to do with a bowel of doubtful vitality is one of those difficult questions which the surgeon is not infrequently called upon to decide at short notice. Individual judgment must determine whether it shall be returned to the abdominal cavity, or left in the ring, or excised; whether the wound shall be left open or closed. Written directions upon this subject are not quite satisfactory. Actual experience is the great teacher. The black, roughened, ash-colored, or ulcerated bowel of undoubted gangrene, is readily recognized. The very dark brown, or mahogany-colored ruptures are the doubtful ones. In cases of doubt it is good practice to reduce the hernia and keep the wound open with gauze, or some form of drainage, thus giving a ready exit to the intestinal contents, should one be required.

Time, and handling of the bowels, are very important elements in these operations, and are to be borne in mind, when deciding whether to make an artificial anus, or to resect the sphacelated structures. Most surgeons will require from forty-five to ninety minutes to excise the intestine, while an artificial anus can be established in a few moments. The ultimate result of the former method is infinitely preferable to the latter, but the immediate risk is greater. If the patient be *in extremis*, it would probably be better to save time by making an artificial anus, and trusting to the future for a closure of the same by nature or art.

The cases suitable for the expectant or let-alone treatment are limited to those, who are in the last stages of collapse. A patient with a cold, clammy, dusky skin; feeble, flickering pulse, or none at all; dull or stupid intellect, will hardly survive any operative treatment. While crossing the ocean some years ago the writer was asked by the ship's surgeon to see a man, who had a strangulated femoral hernia of several days' duration.

To look at the man one would not think that there was much the matter with him. He was quiet, conscious and comfortable. No pain, nor vomiting. All active symptoms had ceased. But he had no pulse at the wrists, and his extremities were cold. In other words, he was in a fatal collapse. Herniotomy was done and a recent, gangrenous knuckle of small intestine was found imbedded in a mass of old, thickened, adherent omentum. Death took place in a few hours.

Several years since I was called out of town to see a man, who had a large, irreducible, scrotal hernia of many years' standing, which had become strangulated three days before. The lower part of the tumor was purple and cold, indicating that mortification had set in. Vomiting and pain had ceased, and the pulse was weak. He was calm, conscious and desired an operation. It was decided to make an effort to relieve the strangulation. The patient took the ether slowly and quietly, but before he was fully under its influence the bronchial tubes filled with mucus or serum from a rapid œdema, and death took place at once.

It cannot be questioned that the fatal result in both of these instances was hastened by the operation, and that it would have been better to let them alone, as was done in the following case. An old woman was admitted to the City Hospital last year in a state of collapse from a gangrenous umbilical hernia of two days' duration. Vomiting, pain, delirium, dusky, clammy skin, followed by death in thirteen hours. It did not seem possible for any treatment to do her any good.

It is difficult to indicate upon paper, or even to determine at the bedside, in all cases, the degree of collapse that precludes an operation. My own experience would incline me to take pretty large risks under these circumstances. Much, very much, depends upon the manner in which these patients are managed. Time, animal heat, blood, the anæsthetic, moving the patient, and manipulating the parts involved are important factors in the treatment. Briefly, it may be said that the patient should be warmly covered, moved as little as possible, in fact, when practicable, it is better that the operation should be done in bed. Only sufficient anæsthetic should be given to deaden, rather than entirely remove sensibility to pain. The operation should be done as quickly as possible. Stimulants are to be given by the skin and rectum unless the stomach can be relied upon, which is seldom the fact during shock, however quiet it may seem to be. Absorption and assimilation are slow and unsatisfactory. Experience justifies the assertion, that, managed in this way, many desperate cases can be carried through an operation in safety. The following instance illustrates the fact.

Mrs. M., aged forty-seven, was admitted to the City Hospital in May, 1891. She was a large, fat woman with an umbilical hernia of five years' duration. Symptoms of strangulation had existed for sixty hours. Skin cold and clammy; pulse rapid and weak. She was restless, respiration was sighing, in short the collapse was very marked. The tumor was black at the apex and as large as the fist. A few whiffs of ether were given, and an incision was made directly into the bowel. The ring was enlarged, and the intestine secured *in situ* by sutures. The patient rallied fairly well, and although she had an attack of acute nephritis, yet she was much relieved by the operation, and lived seventeen days. She died from inanition, apparently due to the high location of the opening in the small intestine. About eight inches of the gut were gangrenous. At no time did the patient's condition justify any attempt at resection of the diseased tissues.

About a year ago I operated upon an old lady, a patient of Dr. Edson's, who had a gangrenous inguinal hernia. She was extremely weak, vomiting, dusky skin, and feeble pulse. The bowel was laid open by a free incision, the constriction divided, and a poultice applied. She died in a few hours from shock.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 6, 1892.

Another woman, aged forty-five, was operated upon at the hospital last summer for a very large strangulated umbilical hernia consisting of omentum and intestine. The bowel was in a doubtful condition, but was finally returned. The omentum was cut off, and the ring closed by sutures. The patient only partially rallied, and died apparently from suppression of the urine, in forty hours. No autopsy was made, but there were no signs of extravasation or peritonitis.

Another case of doubtful condition of the intestine terminated more favorably. A woman, aged fifty-five, was admitted to the hospital in April, 1888, with a strangulated inguinal hernia of three days' duration; the rupture was a recent one. On opening the sac the bowel was very dark, but glistened, except in three or four small patches, which were ashy in color and very thin, as though all the coats, but the serous, were perforated. The bowel was finally replaced, as it was thought that the risk to her life would be less thereby, than from a resection of the gut. She was an extremely fat woman, and apparently had feeble powers of resistance. The wound in the sac was left open as well as the external one.

At the end of ten days, fæces appeared in the wound and continued to be discharged for about a week. The wound was soundly healed in a month. The provision of a free outlet for the intestinal contents probably saved the patient's life.

The good effects of an operation under the most unpromising circumstances are well shown in a case recently treated at the hospital. A man, aged sixty-eight, was seen at the end of five days' suffering from a gangrenous inguinal hernia. Vomiting, hiccough, pain, delirium, dusky skin, weak, intermittent pulse were the symptoms. The rupture had only existed a week. The patient was not removed from the bed, but was surrounded with heaters, stimulated by skin and rectum. A very little ether was given, and an opening rapidly made into the intestine. No efforts were made to separate the gut from the sac, but a herniotome was passed into the bowel, the constriction was cut and the wound lightly packed with gauze. The operation occupied but a short time, and the patient suffered no additional shock thereby. The hiccough persisted for a week. In five weeks two-thirds of the fæces came through the rectum. He was discharged from the hospital in very good general condition at the end of forty-one days. A little thin watery fluid came from the wound for some time after he went home. He returned to his business as a printer, although not able to do much work. The sinus has not yet healed, it being over four months since the operation was done, but he is able to be out and about. As a rule, the sinus does not give him very much trouble.

Two cases of resection of the bowel have come under my care; one recovered and one died. A woman, aged sixty, entered the hospital last June suffering from a large umbilical hernia, which had existed fifteen years. It was gangrenous and had been strangulated twenty hours. Sac contained a large mass of more or less adherent omentum, in the midst of which, was a knuckle of black intestine. The former was tied in sections and cut off. Five and a half inches of the bowel were cut away with its accompanying omentum, the ring having first been freely divided to allow the bowel to be brought out into easy reach. The vessels having been tied, the mesentery was adjusted with a continuous silk suture. The bowel was closed by two rows of continuous silk sutures, one including the muscular coat, the other, a Lembert, involving only the serous layer. External wound closed.

Patient had some pain after operation. Bowels moved the next day, and also on the following day. Temperature rose gradually till the third day, when it was 103°. Some distension; delirium, pain, restlessness and prostration. Wound quiet; no abdominal tenderness. Sank and died on the fifth day.

An autopsy showed fæcal extravasation at the junction of the intestine and mesentery, as is to be seen in the specimen here presented. It will be noticed that union seems to be firm and complete everywhere, except for about half an inch, as indicated above. Perhaps this patient would have done better had the wound been left open and packed with aseptic gauze.

The next case operated upon in precisely the same manner, so far as the intestines was concerned, made a good recovery.

Mrs. K., aged fifty-five, entered the City Hospital October 16, 1891. She rode upon the front seat of the ambulance with the driver, although she had a large, gangrenous umbilical hernia of about two days' duration. She was pale, haggard, weak, pulse irregular and feeble. Vomited after admission. An enema of brandy and strong black coffee having been given, also a hypodermic injection of morphia, she was partially etherized, and the sac laid open. The inside of the sac was dark colored and contained about six inches of small intestine, which was black and mottled with grayish spots, indicating sphacelus. All of the intestine seen was covered with a layer of lymph. The destructive process extended about half way to the root of the mesentery.

The gangrenous tissues were removed with knife, and the bowel and mesentery united as described in the last case. Wound closed after approximating the ring with two strong silk sutures.

Notwithstanding the fact that this woman had a fibrous tumor as large as a child's head, and a considerable amount of ascitic fluid in the peritoneal cavity, she made a speedy recovery from the operation. The wound healed by first intention. The bowels moved spontaneously on the third day, and regularly afterwards. She had little or no pain, required very little medicine of any kind, soon regained and kept a good appetite. She left the hospital in five weeks in a most satisfactory condition. The wound was firmly healed, there was no protrusion at the navel, and the functions of the bowels were in a natural state. In other words, so far as concerned the hernia, she was well.

Patients in profound collapse from gangrenous hernia had better be let alone. If the prostration be too severe to allow a prolonged operation, an artificial anus may be established for a time, the closure of the orifice being left to future efforts of nature or art. If the condition of the strangulated parts be doubtful, they may be replaced, and the wound packed with sterilized gauze. Under all circumstances the constriction must be relieved, and a free outlet provided for all obnoxious matters.

THE MANAGEMENT OF GANGRENOUS HERNIA.[1]

BY HERBERT L. BURRELL, M.D.,
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When an operator has exposed a loop of intestine which is lustreless, mottled with chocolate-colored blotches from having been caught in one of the abdominal rings, an imperative question arises of what shall be done with this threatened gangrenous hernia. When the intestine is perforated, the operator's course is much clearer than where a threatened perforation exists; for the presence of the perforation indicates that either the intestine must be resected, or attached to the ring, and an artificial anus established.

There are three methods to be considered: First, a return of the bowel to the abdominal cavity after freely dividing the ring, and packing the canal down into the peritoneal cavity with iodoform gauze; second, an immediate resection of the intestine; third, allowing the intestine to remain *in situ*, after division of the constricting ring, that its condition may be known as the case goes on. Placing doubtful intestines inside the peritoneal cavity has always seemed to me a source of danger.

Intestinal resection is a procedure attended by great risk in the length of time consumed and the shock added to the patient's condition, so that it has seemed to me that in the majority of cases it would be better to leave the intestine *in situ*, that its fate may be watched, that it may be outside of the peritoneal cavity, and thus danger of infection be minimized. I have had four cases of gangrene of the intestine, the details of which I will present:

Case I. J. H., a healthy young man, entered the Boston City Hospital. For five years he has had an inguinal hernia on left side, which has bothered him a little, but it has usually been easily reduced. Yesterday, at 4 P. M., the hernia came down, and could not be put back. A good deal of force was used by a friend, who felt sure that he could reduce the hernia by taxis. In the left inguinal region there was a prominent tumor, extending into the scrotum. The testis formed the end of the tumor, apparently forced down under considerable tension. An incision was made, two and one-half inches long, over the hernial sac into the left lower abdomen, and nearly at right angles with the median line of the body. It was found impossible to reduce the hernia at this point, and a second incision was made at right angles to the first, over the hernia and down to the scrotum. The dissection was carried down until the sac was reached and opened. A piece of omentum, the size of the fist, protruded from the sac. Around this was a coil of intestine, seven or eight inches long, of a dark plum color. The ring was enlarged, and after considerable difficulty the omentum and intestine were replaced. The difficulty of replacing was due to the omentum being caught by the loop of intestine. The primary wound was diminished in size by sutures, and the wound was packed with iodoform gauze, leaving a direct channel to the peritoneal cavity. Operation lasted fifty-six minutes. The patient was in fair condition, having been vigorously stimulated.

Second day. Patient rather better to-day, and has no vomiting. Says he feels like having a movement of the bowels.

Third day. Patient much more comfortable, temperature nearly normal, and no pain. Sleeps well, and begins to have a good appetite.

Fourth day. Patient does not feel like having a dejection yet. Tongue has a whitish coat.

Fifth day. This morning the dressing was found soaked with fæcal matter. The bowel has, undoubtedly, sloughed. (Later a distinct segment of the ilium came away, two and one-half inches in length, and including the lumen of the intestine.) The wound thoroughly irrigated and cleansed. Patient's condition much the same. Wound to be dressed every six hours, and thoroughly cleansed.

Sixth day. Patient very comfortable.

Seventh, eighth, ninth and tenth days. Patient in very much the same condition.

Twelfth day. Complains of a transitory bunch coming around the artificial anus, which gives him a good deal of pain. Wound has granulated remarkably quickly, so that it is nearly closed, and the drainage is not good. Could not introduce a drainage-tube, so steel sounds will be passed from day to day.

Thirteenth day. No discharge from abdominal wound.

Fourteenth day. Patient feels like having a dejection.

Fifteenth day. Patient had a chill at 2 P. M. Temperature returned to normal after a few hours, and the patient felt much better.

Sixteenth day. The patient received an enema, which brought away considerable fæces. Since then he has had several dejections of formed fæces, normal in appearance. Almost no discharge from the external wound, which is nearly closed in.

Eighteenth day. Chill at 5 P. M. All sutures taken out to-day. Movement of bowels nearly every day.

Nineteenth day. The external wound has broken down again, and there is a great discharge of fæcal matter. None by anus.

Twentieth day. External wound still discharging. Has had very little fæces by anus.

Twenty-first day. Has had a good deal of pain. Fistula still open and discharging.

Twenty-third day. All fæces now by fistula, some wind passed by rectum.

Twenty-fifth to thirty-fifth day. Patient in very much the same condition, occasionally passing fæces by abdominal wound, but usually per rectum.

Thirty-fifth to forty-fifth day. Patient's condition is much the same. He thinks he has gained a little strength lately, but there is no marked gain. Abdominal wound much the same.

Forty-fifth to fifty-sixth day. Patient in very much the same condition. Occasionally has sharp attacks of pain referred to the abdominal wound, and a coil of intestine can be mapped out at this point when the pain is severe. The patient's friends removed him from the hospital and from the city, and since that time I have been unable to keep track of the case.

Case II. P. S., age seventy-two. The patient does not understand English very well, and cannot give an accurate account of himself. According to his own statement he has had a reducible femoral hernia on the right side five years. Three days ago began to have pain across the upper half of the abdomen and in the region of the rectum. He has not been able to reduce the hernia for three days, and has had no dejection. Has vomited repeatedly, and feels very sick.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 6, 1892.

An old, broken-down, poorly-nourished man. There is a tumor in the right groin about the size of a hen's egg. It is below Poupart's ligament, and is not reducible. The patient is pale, pulse weak, temperature about 98°, face haggard, tongue coated, seems on the verge of collapse. Moderate abdominal tenderness and distension.

The patient was put under primary anæsthesia, and a nearly vertical incision, about three inches long, was made, and the hernial sac exposed. On opening it, a few drachms of sero-sanguinous fluid escaped. The intestine was found to be chocolate-colored, mottled in places and collapsed. The sac also contained a piece of omentum the size of a walnut. The ring was divided freely on the forefinger, the omentum reduced, the intestine was sewed to the abdominal ring, and an incision was made into the projecting loop of intestine. A small amount of fæces escaped. A dressing was quickly applied, the patient was put to bed and actively stimulated with heaters. The operation lasted thirteen minutes.

First day. The dressing, when removed, was filled with fæces, patient's condition is bad, pulse poor, extremely restless, temperature 99°. In the evening required restraint. Took nourishment fairly well. Discharge from the artificial anus free.

Second day. . Patient failing rapidly. Did not rally under the influence of stimulants, and died.

Case III. H. D. R., age sixty-eight. Patient has had a hernia for three years, which has given her little trouble. There has been extreme constipation. She was poorly developed and nourished. There is a tumor over the left inguinal canal about as large as a good sized plum, semi-fluctuating and very tender to the touch. Her abdomen is distended and very tender in the dependent portions on palpation. Pulse is very fair in strength and rhythm. Facies anxious, extremeties cold, vomiting. Hernia has been down three days.

An incision was made over the tumor two inches long, the layers were dissected away, and the sac opened. A bloody fluid escaped, disclosing the intestine. The latter was glossy and here and there badly mottled. The finger passed up to the ring disclosed a tight stricture. This was divided with scissors. Adhesions were found to exist around the bowel as it lay in the inguinal canal. Stitches were taken between the bowel and the sac, and the bowel was opened. A certain amount of fæces escaped, semi-fluid in character.

Second day. Wound looks well, less pain over abdomen, takes treatment well, no vomiting. Urine, albumen 1–8 per cent., acid, 1027, sediment, hyaline, granular, fatty casts, renal granular cells, fatty and granular renal cells, vaginal and bladder cells, blood and pus.

Third day. Much more comfortable, very thirsty, takes champagne and coffee *ad libitum.*

Fourth day. Much better, complains of some pain about the lower abdomen on having a passage from the artificial anus. Eats well. No especial discomfort. Dressing changed every six hours.

Fifth day. Shows a tendency to collapse. Pulse rapid and jerky. Still has pain on having a movement of the bowels.

Sixth day. Rather better. Complains of less pain, takes stimulants unwillingly. Bowels move regularly through the artificial anus. A large piece of bowel has sloughed about two inches square. No hæmorrhage.

Seventh day. Rather more pain. Controlled by morphine, pulse seems weaker. Extremities are not especially cold. Skin clammy.

Eighth day. Patient passed the night in a comatose state, pulse gradually grew weaker and extremities colder. Died soon after midnight.

At the autopsy, it was found that although the artificial anus had relieved the strangulation of the intestine, there was a twist in the ilium which rendered the greater part of that portion of the intestine gangrenous (a distance of about eight inches). It was perforated at two points, and fæces had escaped into the peritoneal cavity.

Case IV. J. S., a strong, healthy adult, age twenty-eight. Has had a right inguinal hernia for three years. Has never worn a truss. Five days ago, while lifting a bale of cotton, felt the hernia come down, was unable to reduce it, and has applied for assistance to two physicians who declined to treat him, and advised him to enter a hospital. Has been in intense pain. The abdomen is distended, is vomiting a coffee-ground-like material. Temperature 100°, pulse 130, small. Tongue dry and brown, very thirsty, extremely anxious. The danger of his position having been explained to him, he was put under light anæsthesia, and an incision was made down to the intestine. A gangrenous loop of intestine, probably a portion of the ilium, was found glued in the hernial sac. The ring was divided freely, and the intestine remained *in situ.* An incision was made into the intestine, and a large amount of fluid fæces escaped.

Operation twenty-five minutes. Patient put to bed with heaters, subcutaneous injections. Seen at the end of three hours, at which time he was comfortable with a temperature of 99°, pulse 140.

Second day. Patient has discharged an enormous quantity of fæces from the opening. The abdomen is less tympanitic, temperature 101°, has considerable pain in the abdomen, has vomited three times, but retains some champagne. Discharge of fæces from artificial anus good, wound is looking well.

Fourth day. Retains nourishment, has had a small dejection from rectum.

Fifth day. Temperature normal, vomiting has ceased. A large dejection from rectum. Wound looking very well. A piece of intestine about an inch square separated.

Sixth to ninth day. Patient doing well, wound closing rapidly.

Fifteenth day. The wound was closed to about the size of a lead pencil. There was obstruction to the discharge of fæces and it was found necessary to introduce a drainage-tube, which gave the patient a great deal of relief.

Forty-second day. The wound had closed completely, the patient was having normal movements. The patient was seen two years later at which time he had suffered no inconvenience from the operation, and considered himself cured. Wore a truss constantly, and has a distinct impulse under the scar tissue.

I have never attempted to do an intestinal resection for gangrenous hernia, and have always felt that it was a hazardous undertaking, and that it would be better to establish an artificial anus, and if the patient recovered to do a secondary operation and resect the intestine at one's leisure. The first case is extremely interesting, for there was but little in the patient's condition after operation to indicate the sloughing of the intestine after it had been replaced in the peritoneal cavity. The sloughing of the intestine, and the discharge of fæces, occurred the fifth or sixth day, and by this time the intestine must have been walled off from the peritoneal cavity. This wall of inflammatory material, as thrown out, must have been a protection to the general peritoneal cavity, but the packing of the wound as carried out in this case has seemed to me a matter of a great deal of importance, in that it allowed a free exit for the fæces. The chills which he had were apparently associated with a diminished discharge from the artificial anus. For weeks I stood ready at any time to do an intestinal resection, upon the slightest failure in the patient's general condition, but at no time did the symptoms seem severe enough to indicate that course. When he left my care he was apparently on the road to recovery, and the outcome of the case will be one of great interest.

In the second case the patient was an old, broken-down, poorly-nourished man, with a gangrenous femoral hernia, and on the verge of collapse. The operation was a desperate measure, and can only be said to have relieved the acute suffering.

The third case seems to me to demonstrate the advisability of thoroughly exploring the canal, and drawing out a loop of the intestine to determine how far the gangrenous process has extended. Unless this is done and the intestine is allowed to remain *in situ*, one, at times, will be deceived by gangrenous intestine remaining in the peritoneal cavity.

The fourth case was successful, from the fact that he was a vigorous adult. The closure of the intestine after a separation of a slough of an inch square has seemed to me a matter of importance, particularly when it is considered that two years later the patient was seen and expressed himself as free from all symptoms which would indicate the formation of a stricture of the intestine.

I will attempt to formulate, for the purposes of discussion, the ideas I have formed from a consideration of these cases.

Questionable gangrenous herniæ should be treated either extra-peritoneally or by immediate intestinal resection. Whether to treat a gangrenous hernia extra-peritoneally or by resection must depend entirely upon the individual case, and the following factors should be considered:

(*a*) The general condition of the patient.

(*b*) The age of the patient.

(*c*) The length of time the hernia has been constricted. [This in relation to the probable time at which the intestine will give way, and the extravasation of fæces takes place.]

(*d*) The circumstances under which the operation is performed, whether the surgeon is ably assisted.

(*e*) The portion and amount of intestine involved; for in some instances where an artificial anus is established high up in the intestinal track the patient is practically starved to death.

The management of a gangrenous hernia requires prompt and accurate judgment, founded on a large experience, and it is only by carefully formulating our ideas that we can meet the emergency with intelligence.

The port of Santos in Brazil is still infected with yellow fever.

Clinical Department.

A CASE OF INTESTINAL RESECTION AND SUTURE FOR ARTIFICIAL ANUS FOLLOWING GANGRENOUS HERNIA.[1]

BY MAURICE H. RICHARDSON, M.D.

Raymond S., aged twenty-two, entered the Massachusetts General Hospital on Tuesday, October 1, 1891. About ten years ago he noticed a lump at the upper end of the scrotum on the right side, which would disappear only on lying down. Sometimes, after remaining down for quite a little while, the lump would get hard and painful. Nothing was ever done for it. On the 19th of June, 1891. he was taken with a sudden pain in the stomach. The tumor grew much larger, and he began to vomit almost immediately. The pain soon became so severe that the attending physician, Dr. Woodworth, of Canard, Nova Scotia, was sent for.

Dr. Woodworth first saw him at about eight o'clock on June 19th, and found him suffering from an obstructed hernia of a few hours' standing, which had come on while striking at a ball. There was a tense tumor in the right scrotum, and suffering was severe. Chloroform was given and taxis carefully tried, without success. A consultation was called, and fresh attempts made at reduction. There was no vomiting, and there were no constitutional symptoms. After local application of cold, taxis was again tried under chloroform, without avail. On account of the absence of constitutional symptoms and other evidence of obstruction, operation was postponed. Meanwhile, cold applications were continued.

Swelling increased in the region of the tumor until the penis was so involved that it was necessary to use a catheter. The temperature was never above normal except once, when it stood at 99.5° Cold was applied for sixty hours without reduction. The lower bowels had been opened freely, and strength was well sustained. In about a week a soft point was noticed over the hernia in the lower part of the scrotum, and soon fistulæ formed at this point with the escape of fæces, and, in the course of the following week, there escaped some ten or fourteen inches of intestine. During this time the pulse never exceeded 90 and the temperature was normal. He often had quite free movements and declared that blueberries, which he ate while in bed, passed by the rectum. From this evidence, it seemed to the attending physicians that the alimentary canal was not entirely cut off, and it seemed unaccountable to them that the constitution should be so little affected by all the local suffering and disease. On his recovery of the immediate effects of the strangulation, he was sent to the Halifax Hospital, where, on every second day, or thereabouts, he would have a passage of fæces through the natural channel — sometimes from a warm water injection, but more often without anything. After being in the hospital for some time, he was removed to another, smaller hospital, where one of the abdominal openings was enlarged.

At the time of his admission to the Massachusetts General Hospital, he was passing gas and some fæcal matter by the rectum. As long as the fistulæ remained open he suffered no pain. On examination, the right inguinal region was found riddled with openings through which fæcal matter almost constantly escaped. The right testicle was drawn up nearly into the external ring. The skin was infiltrated, œdematous and red, and there was considerable inflammation in the adjoining parts. His discomfort was so great as to be quite unbearable and life hardly worth living. He spent all his time in bed, wiping up with cloths the discharges which were constantly escaping through the numerous fistulæ.

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[1] Read before the Surgical Section of the Massachusetts Medical Society, January 6, 1892.

After a careful study of the case, in spite of which it was impossible to make out definitely the condition of the bowel ends or the direction of the sinuses, it was decided best to attempt the restoration of the alimentary canal. The history and physical examination made it quite apparent that the bowel had sloughed to a greater or less extent, but it was impossible to say that there was not still existing some communication to account for the occasional passage of fæces by the rectum. The foul condition of the parts was so marked that it seemed unduly hazardous to open the abdominal cavity through the sinuses. There was no improvement in this respect, however, after constant and prolonged daily efforts at cleanliness, both on the part of the nurses and of the patient. The operation was planned with especial reference to the necessarily foul condition of the parts and the great danger of infecting the peritoneum. My hope and intention was to lay open the numerous sinuses by one long incision, curette them, and by some means to establish a communication between the upper and lower segments of the bowel from their interior. On exposing the external ring, I found two constricted openings side by side, into both of which it was quite feasible to introduce the index finger. Both segments were adherent to each other and to the surrounding parts. In separating the adhesions between the bowel and the abdominal wall for the purpose of making an anastomosis between the adherent segments, the peritoneal cavity was opened. During these manipulations several ounces of fetid pus welled from below the ring and apparently polluted every part of the wound, including the prolapsed healthy intestine. The chief objection in this case to resection and suture had been the danger of infecting the abdominal cavity by the foul discharges of the sinuses and the septic condition of the parts. The force of this objection was lost in separating the adhesions, and I determined at once to make a complete resection of the exposed ends. About two inches of bowel were cut off from each end with the scissors, together with a wedge-shaped piece of mesentery. The bowel ends were held by assistants while interrupted Lembert sutures were applied in a single row, both to bowel and mesentery. The joint seemed very perfect and satisfactory. The bowel was then returned to the abdominal cavity and kept directly under the abdominal wound by means of iodoform gauze, which was placed just in contact with the line of suture throughout its whole extent. It will be seen that the approximated bowel ends and sutured mesentery were everywhere protected with gauze, and that the line of suture was everywhere provided with gauze drainage in case one or more sutures should give way. The external wound was also packed with iodoform gauze and aseptic dressing of cotton tightly swathed outside the whole. During the operation there was frequent and thorough irrigation with warm water. The time of the operation was one hour; of applying the suture twenty minutes.

On the following day the patient was in a remarkably good condition, bright and cheerful. On the second day he passed gas through the rectum for the first time since June. On the sixth day he was put on extra diet. He had a large movement of the bowels, and said he felt "first-rate." The wound was clean and granulating. The gauze was taken out, little by little, until November 12th, when it had been almost entirely removed. The wound was granulating, with still some slight redness and induration about the margin. On November 15th the last piece of gauze was removed and the wound much closed up. On December 11th, the wound was perfectly solid, and the patient felt perfectly well in every way. The bowels were moved nearly every day. He was transferred to Waverley, and has remained well ever since.

This case seems to me to be of value from the fact that the foul condition of the wound did not infect the peritoneum, and that it was possible to go through the manipulations of an extensive operation without ill results attending. The foul condition of the parts in this case led me to select a method by which, if possible, the peritoneal cavity could not become infected. The only way in which this could be done was to make an anastomosis between the proximal and distal ends of the intestine by working from the interior. The success of this procedure would depend obviously upon adhesions between their peritoneal surfaces. For, in the absence of such adhesions, it would be impossible to establish a safe communication by any imaginable method of intestinal suture. Careful attempts in this direction were followed by separation of adhesions and exposure of the peritoneal cavity. It would have been impracticable to establish satisfactory communication in this way, and I believe valuable time was lost in attempting it as a preliminary measure. Even if successful, it does not follow that the sinuses will become closed, nor that the anastomoses will remain permanent or efficient.

When the peritoneum has become thus exposed to the danger of infection, we must choose between anastomosis and end-to-end suture. The latter method I believe to be better, because it seems to me quite as quickly applied, and as secure, while there is practically no danger of stricture. The great danger in both methods is from giving way of the stitches and fæcal extravasation. By applying gauze to the line of suture this danger is reduced to a minimum, for such good drainage is provided that nothing more than a temporary fistulous track is likely to remain.

THREE CASES OF THE SEPARATION OF THE EPIPHYSIS AT THE HEAD OF THE FEMUR.[1]

BY E. H. BRADFORD, M.D.,
Visiting Surgeon, Boston City Hospital.

THE following cases are reported on account of their rarity:

CASE I. A boy, seventeen years old, fell from a window striking upon a shed of the story below. He was brought to the hospital with symptoms suggesting a fracture of the right limb. On examination, however, no fracture was found at the leg or of the thigh proper. The limb was held in a position of eversion and was slightly shortened, but no injury was discovered below the trochanter, which rotated on twisting the leg. On examination under an anæsthetic, abnormal mobility and a cartilaginous crepitus was determined between the head of the femur and the trochanter. The trochanter was higher on the affected than on the other side. The diagnosis of separation of the epiphysis was clear as the symptoms pointed to a lesion in that part and union of the emphysis does not take place until the eighteenth year.

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[1] Read at the Surgical Section of the Suffolk District Medical Society, January 6, 1892.

Case II. A healthy boy, sixteen years of age, reported himself for examination with the following history: He had been perfectly well, and had not been lame. On attempting to milk a cow, seated on an ordinary milking-stool, he was kicked at by the cow and turned quickly to avoid a blow, suffering a sensation of sudden pain. Immediately after this he was unable to step and was taken to the house, being obliged to remain in bed several weeks.

He was etherized and the limb, which was flexed, painful and useless, was put into position, and made a recovery, but he was able to walk about only with crutches for some time. At the time of examination, three months later, he walked with crutches and could walk without, but with marked lameness. He suffered no pain. An examination showed that the affected limb was shorter by an inch than the fellow. The trochanter was above the Nelaton line to that extent. The motions at the hip-joint were perfectly free, with the exception of inversion, which was not possible beyond the right angle. It was entirely free on the other side. The patient was perfectly well and had not been lame before this accident.

Case III. A child, seven years old, of fairly good health, but of imperfect assimilation, sustained a fall from the window in the first story. The patient was taken up, placed in bed, and complained of great pain; but no injury of the limb was determined at the time. The child was of a nervous type and it was thought that her symptoms were due to fright rather than to any injury to the bone. She remained in bed for several weeks, finally was able to get up, and after a while to walk, though she still limped. Upon examination, four months after the accident, it was found that the head of the trochanter was half an inch higher on the right, the affected side, than normal. The head of the trochanter was also placed more posteriorly than is normal, and the foot everted. The motions at the hip-joint were free, with the exception of the inversion which was not possible beyond the vertical. The patient was free from pain and able to walk. A rotation of the thorax had taken place in the four months and the ribs on the right side projected.

Cases of this lesion would appear to be quite rare and the diagnosis is not so easy as might at first be imagined at the time of the accident, unless an anæsthetic is used. The shortening, though present, is not always recognizable except on careful measurement, and that is not easy in a patient in a sensitive condition. No fracture can be determined by ordinary palpation, and it would appear that slight motion of the limb is sometimes possible, though accompanied by pain. An anæsthetic is needed to establish a diagnosis with accuracy in a fresh case.

The symptoms of pain in the separation of the epiphysis are often not greater than what is seen in cases of synovitis of the hip-joint following severe injury or sprain, and unless the patient is anæsthetized, the actual condition of things might not be recognized.

In the last edition of "Hamilton's Surgery" (revised by Smith) one case of supposed separation of the epiphysis is mentioned by Smith, who also quotes in the literature, five cases of separation of the epiphysis, one in a boy of ten, another in a girl of sixteen, another in a boy of fourteen, and two in children of fifteen, the sex not being given. It may, therefore, be assumed that the accident is not a common one. Smith also collected eighty-four cases of fracture of the neck, with the youngest at an age of twenty-nine years. Hyde[2] collected sixty-one cases fracture of the neck, the youngest being nineteen years of age. As the epiphysial union is said to take place at the head of the femur at the age of eighteen, this case of Hyde's should probably be classed as a fracture.

The treatment of this condition where it is recognized is, of course, simple. It consists in the ordinary treatment of a fracture, and prognosis is, of course, unusually favorable. Where the condition is not recognized, and a union has taken place, with the resulting deformity, operative interference — osteotomy of the neck of the femur — has been performed by Professor Hoffa, of Wurtzburg, with success.

It would seem that the operation is not a dangerous one, and recommends itself in all cases of marked deformity as a means of curing the disfiguring limp.

In addition to the previous cases the following deserves mention in this connection as a fracture of the neck in a comparatively young person, the patient being younger than the youngest case of Smith, though older than the youngest of Hyde's cases.

The patient was a woman, twenty-two years of age, a Swede by birth,[3] and of excellent health and strength. She fell twenty feet. Was unconscious two or three hours, and was brought into the hospital two days later. Examination was made under ether by Drs. Gavin and Burrell and the following symptoms were noted: The left leg was found from half to three-quarters of an inch shortened. There was slight inversion, inability to raise the heel, no deformity, abnormal mobility and marked crepitus at the position of the neck of the femur. The patient was treated by a Buck extension, and made a perfect recovery with no appreciable shortening.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

Regular meeting, Wednesday evening, January 6, 1892, Dr. A. T. Cabot in the chair.

Dr. George W. Gay read a paper on

GANGRENOUS HERNIA.[1]

Dr. M. H. Richardson reported a second successful case of

INTESTINAL RESECTION AND SUTURE FOR ARTIFICIAL ANUS FOLLOWING GANGRENOUS HERNIA.[2]

Dr. E. H. Bradford: My experience consists of three cases of gangrenous hernia, all fatal. I will not

[1] See page 207 of the Journal.

[2] See page 211 of the Journal.

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[2] New York Medical Record, 1875.

[3] City Hospital Records, vol. 202, p. 52.

give the details any further than that the first was treated by the formation of an artificial anus, and the patient recovered from the operation, and died of starvation, owing to the short distance of the anus from the pylorus. The second was an elderly lady over seventy. The hernia was found to be gangrenous, and no intestinal suture was made, but the gut was brought to the wound and stitched. The patient died a day after the operation. Third was a case in which resection of the intestine was done, and the patient recovered from the operation. The ordinary steps of the operation as mentioned were performed. Three days later the patient died. At the autopsy it was found the intestine had united perfectly with no leakage, but the patient had died from vomiting. It was found that the lumen of the intestine was too small. This was an accident in the technique which had not been foreseen.

In regard to the treatment of gangrenous hernia, I suppose we are all agreed that in case the patient has strength to warrant it during the operation for gangrenous hernia, resection should be done. In patients who are exhausted, an artificial anus would be preferable.

Dr. H. L. Burrell read a paper on the

MANAGEMENT OF GANGRENOUS HERNIA.[3]

Dr. A. T. Cabot: The cases that have occurred to me have really been ones that have had very little interest in connection with this discussion. Two of them were almost moribund at the time of the operation. They were both of them internal strangulations with large extents of intestine gangrenous, all the way from three feet in one case to twenty to twenty-five inches in the other. In those, of course, the only thing to do was to bring the gangrenous intestine outside of the abdominal cavity, and hope for an artificial anus. In neither case was that successful, because the patients had not the strength to rally from the condition.

The third case was interesting as being one in which the gangrene had just succeeded in opening the bowel when the sac was opened. It was a small femoral hernia, a little knuckle of intestine. The sac was a double sac often seen in the femoral hernia. There was a little opening about as large as the point of a lead pencil allowing a little spurt of fæcal matter to appear. The patient's condition was so bad that it seemed unwise to attempt a suture of the intestine. It seemed as if in that case it would be unsafe to simply relieve the constriction and leave the intestine *in situ*, because it was so likely to escape from its attachment to the ring and fall back into the peritoneal cavity and discharge its contents; consequently a stitch was passed somewhat as in doing Littre's operation for artificial anus in the groin. On incising the constriction there was a very large escape of fæcal matter. The constriction was entirely relieved, but the patient had not the strength to rally, and lived only a few hours after the operation.

I speak of that case mainly as being an illustration of one kind of case in which it did not seem to me safe to simply leave the intestine *in situ* and relieve the constriction, but where it seemed necessary to attach the intestine in its position so that it should not escape and discharge its fæces internally.

My feeling in regard to the kind of operation which should be done is, I think, exactly in accord with what has been expressed this evening by almost every gentleman, that is, that if the patient's strength permits of it, a circular enterorrhaphy and return of the intestine to the abdominal cavity would be the course to pursue. It seems to me that that proceeding carried out in Dr. Richardson's case is an excellent one in these cases to prevent the possibility of trouble from the stitches giving way, that is, to provide for drainage by packing gauze down to the wound in the bowel. If the stitches do not yield, the opening very quickly closes, whereas, if they do yield, it is of the greatest importance to allow the escape of fæces.

I think I have never done the operation of enterorrhaphy for a gangrenous hernia. It seems to me that the circular operation which was done and described by Dr. Richardson is the best in these cases, although a good many operators are in favor of sewing the two ends of intestine up, closing them quickly and then performing lateral anastomosis with Senn's plates, Abbe's rings or some contrivance of that sort. It seems to me that the result of all of the intestinal sutures I have seen at autopsy have been such as to encourage me to try to establish a union more as nature does it, that is end to end rather than side to side, as this method with Senn's plates; and, as I have seen it done, it certainly has seemed to take very little if any more time. Dr. Halstead claims that he is now able to do circular enterorrhaphy in what is practically only a few minutes. With a little practice I think that operation can be done nearly as quickly as the other, and is preferable in establishing a state more nearly approaching the physiological one.

Dr. C. B. Porter: I came to listen rather than to speak to-night, because I have had no opportunity to prepare anything in detail. My house-officer has sent me a copy of the notes of two cases which have been years ago reported here. I should like to speak of them, not going into the detail of the whole clinical history of the case.

I think that I did the first intestinal suture done in Boston, in 1883, in a woman about sixty years of age. Previous to that she had been operated on for strangulated right inguinal hernia, eight inches of intestine removed, and an artificial anus formed. She entered the hospital, and was under care of Dr. Homans, who operated on September 12th of that year by refreshing the edges of the artificial anus and endeavoring to close it in that way. That closure was successful for a few days, but broke open in about a week, and the patient's condition was the same as before. I operated by uniting a number of fistulous tracts which discharged fæces and pus, and, exposing them all down to the ring, opening up the ring, releasing the intestine from its attachments and bringing out the intestine entirely free from any attachments except those of the mesentery into the wound, and found that there was an artificial anus or two opening into the gut, one in the large and the other in the small intestine, and close to each other at the ileo-cæcal connection. I united those, and found the larger part of the wound was in the large intestine, and it was a question of how to adjust that to the small intestine. I made a longitudinal incision on that surface equidistant from the mesentery so that the wound of the small intestine would correspond to the size of the wound in the large intestine, and approximated them with — Lembert stitch. There was no mesentery taken away. The wound was brought edge to edge. The abdominal wound was then closed, the intestine with the suture being dropped back into the abdominal cavity. The patient made what would be called an uninterrupted and uneventful recovery, except that the record states that about three weeks after the operation when there had been normal dejections for some time, some fetid pus came from the wound with a fæcal odor. There was no artificial anus, however, reformed, but the wound had closed entirely and it was only because the pus in close relation to the intestine produced the odor; and she was discharged from the hospital two months and a week after the operation, well. She lived a number of years, and died at the Cambridge hospital; and Dr. Gray, then the surgical interne, made the autopsy and sent me the specimen which was given to Dr. Whitney for an examination, and it was impossible to say from the looks of the intestine where the sutures had been passed.

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[3] See page 209 of the Journal.

About a year after this operation, when called to Lynn in consultation to see another case, I was asked, while waiting for the train, to see a man who had an artificial anus from gangrenous hernia, and to see whether anything could be done. I found this man in the condition in which all these cases are, but he was if anything more lamentable than many. He was lying in bed, and he had devised something which he had fitted to the side to catch the fæces, otherwise he would have lain in a puddle of fæces. His statement was that he rather die than go on living in that way. He came to the hospital and was operated on in the same way, and with perfect success, the intestine being dropped back into the wound; and I cannot say whether the wound was closed or not, but the recovery was uninterrupted, and he gained very rapidly in his general condition.

I did not hear Dr. Gay's paper, but Dr. Scudder in writing to me to know whether I would discuss the paper informed me that Dr. Gay proposed to consider five different methods of procedure in connection with gangrenous hernia: (1) Making an artificial anus. (2) Opening the sac. (3) Dividing the constriction and leaving the intestine *in situ*. (4) Resecting the bowel. (5) Leaving the patient alone.

Most of these points have been considered by the different speakers. It seems to me there are two points in which there should be no doubt whatever, and that is that an artificial anus should be established, that is, opening of the gut, and that the constriction should be divided. I think those two rules would hold good in regard to every case of gangrenous hernia. I can see no reason why the sac should not be opened when the constriction is divided, and it seems to me that it would be very much better in order to anchor the gut in such a manner that it could not escape back into the abdomen.

With regard to excising of the bowel, I think each individual case would have to be decided on its own merits at the time, and the manner in which Dr. Burrell put it, it seems to me, is such that we could all accept his statements with regard to it. I believe myself, however, that the making of an enterorrhaphy at the time is in nearly all cases unwise. There are few cases of obstructed bowel that would come to the condition of gangrene that are in a condition to undergo the protracted operation, and in the light of the number of most excellent results that have been obtained by the closing afterwards of the artificial anus left from such condition, it would seem wiser under those circumstances to leave enterorrhaphy for a later operation to be determined by the condition of the patient. Few can obtain, except by experiments upon animals, the rapid technique to enable them to suture the intestine. It is certainly a very nice operation to do properly, and many of the fatal results after such an operation are due to the faulty technique, and every one who has tried to suture the intestine recognizes the fact that at the mesenteric border it is very difficult to adjust the suture, and those who have had experience, it seems to me, always adjust those sutures first in order to feel sure that they have been properly placed.

I should say in regard to the return of the bowel to the abdominal cavity that I should be always against it in gangrenous hernia. I think it should be retained in the wound and an opportunity for a free discharge of fæcal matter made.

With regard to leaving the patient alone, I should think it was a simple question whether the patient was in *articulo mortis*. I should say the patient should have the benefit of free opening and the relief of the constriction, because the relief of the constriction takes away a great deal of that shock which follows upon any constriction of the gut or the omentum. I think that every one who has had occasion to operate upon any hernia where the omentum has had to be tied off has felt that the shock to the system from the ligature of a considerable portion of the omentum in order to get rid of it, and to drop the pedicle back, is the source of the greater part of the shock during the operation. I have operated a number of times for the cure of large omental herniæ where they were adherent, and where it was necessary to tie off a very large portion, and the shock of the operation has been to my mind mostly due to that, so that it seems to me that the patient should have the benefit at least of a temporizing operation making an artificial anus and relieving the constriction.

Dr. E. W. Cushing: I should like to hear some discussion regarding the cases which are not exactly gangrenous herniæ, but where the surgeon is called upon to decide whether the intestine still retains its vitality and should be returned. It is of great importance to know if the intestine can be returned at once, since recovery is much more rapid, and the necessity of a prolonged operation is avoided. I hoped to hear something in regard to diagnostic data which would enable one to decide that point. In a large number of cases the character of the bowel is extremely doubtful. I have seen cases returned which I thought had lost their vitality, and which did perfectly well. Other cases which did not seem to be dangerously affected were returned with disastrous results. It is a condition which I have found at times quite difficult to decide.

Dr. J. C. Irish: I have never made the operation of resection of the intestine, for the reason, that, since that has become an established mode of practice, I do not know that I have seen a case of gangrenous hernia. The portion of intestine involved in gangrenous hernia I believe plays a very important part in the subsequent course after operation. In connection with that I recall a case I saw in consultation with a physician who had opened what he supposed to be a suppurating inguinal gland, and to his horror he found that he opened into the intestine. There was a large discharge of fæces through that opening, and an artificial anus remained for a time, but finally fæces passed by the rectum, and the man made a spontaneous recovery. While usually it is the small intestine that becomes strangulated in hernia, still in this case and in others that recover in a similar manner, it is probably the colon that is involved.

Two cases that I have seen of gangrenous hernia, one in my own practice and one in consultation, were cases in which, when the operation was made, whether the intestine was gangrenous or not was doubtful. In these two cases the intestine was returned. In one case the patient died very soon after from septic peritonitis; and in the second case, some twelve days after the operation, the external wound being completely closed, with no drainage, fæces appeared at the wound, and the patient, who had without doubt fæcal extravasation into the abdominal cavity, went along for some two or three months, with the entire discharge escaping through the opening, and finally died of exhaustion.

Now the suggestion of Dr. Richardson to resect and to leave the wound open and pack with gauze to act as a drainage, in case of failure, would not leave the patient in any worse condition probably than exists in some of the cases of artificial anus. There is perfect vent for the discharge; and the fact, too, that even extravasation of fæces into the abdominal cavity is not necessarily fatal, together with the hope of complete cure to the patient, instead of artificial anus, would lead me to believe that suture of the intestine is the wise procedure in all those cases where the general strength of the patient would admit of so long an operation as that of resection and suture.

Dr. M. H. Richardson: I looked upon this subject as one of very great practical interest. I do not agree with those who say that no cases of gangrenous hernia are suitable for excision and suture. No one would think for a moment of performing the operation of anastomosis or of resection and suture in a very feeble patient; but in those not infrequent cases with a history like that of the patient whom I have just exhibited, and like the case of successful resection and suture which I reported some years ago, where the strength is good and the general condition satisfactory, — in such cases there is no good reason why the comparatively short operation of resection and suture or of intestinal anastomosis should not be performed. Up to two years ago the death-rate in intestinal resection for gangrenous hernia was about fifty per cent. I do not think that the mortality is any less than this by any method of treatment; but there is no doubt, I think, that this percentage of recovery is too high, for the obvious reason that more successful cases are reported than unsuccessful. The mortality depends largely upon the time essential to the proper performance of the operation. If we select either intestinal anastomosis or resection and suture, or even the comparatively rapid procedure of artificial anus formation, in all these operations so much time is necessary as seriously to endanger the life of a very feeble patient. In the latter operation — the formation of an artificial anus — it is necessary to sew the cut ends of the bowel into the wound so securely that there will be no danger of giving way, and so neatly that there will be no extravasation into the abdomen; in other words, you have a quite prolonged operation and one that cannot safely be resorted to upon a patient *in extremis*. In such serious cases simple excision of the gangrenous bowel and enlargement of the ring seems to be the only justifiable procedure, but even this operation is not free from the danger of infection through the incised ring. I certainly do not differ materially from the opinion expressed by every one this evening when I advocate excision of the gangrenous portion of bowel and immediate closure, either by anastomosis or by end-to-end suture, in those cases where the patients are young, in good or fair condition, and presumably with good powers of recuperation. By simple incision of the sac and palliative treatment we not only do not avoid great present danger, but we leave the patient to undergo the risks of subsequent attempts at closure, to say nothing of the menace to life and discomforts of constant fæcal escape in the meantime. As I stated two years ago in Washington, I believe now that the combined dangers of two operations are as great or even greater than the dangers of one radical operation. Now, in the case of the young man whom I show tonight, at the second operation the danger from extravasation of fæces into the abdominal cavity was surely as great as it would have been if the operation had been performed at the time of the original strangulaation. There was quite as much danger of infecting the abdominal cavity from the unclean condition of the parts as at the time when the sac was filled with gangrenous contents. Therefore, the danger of infection being practically the same at both times, there is no valid reason why the radical operation for restoring the intestinal canal should not have been done in the beginning, provided his strength was sufficiently good. This patient certainly has been twice exposed to the gravest danger.

I am very glad to hear Dr. Cabot say that he believes the end-to-end suture is better than anastomosis. I have long been of that opinion, although having no experience with the latter operation. The first objection to circular enterorrhaphy is that there will be subsequent constriction. Dr. Porter's two cases reported some years ago show that this is not the fact. In one of these cases, the autopsy, performed some years after the operation, showed no diminution whatever in the intestinal calibre. The history of my first case, which I followed until her death from cancer of the uterus, showed that there was no obstruction, and in the present case there is none. Nor in any of the cases with which I am familiar has there been any subsequent constriction, early or late.

In comparing the time consumed by the different methods, I do not believe that intestinal anastomosis properly performed is substantially a more rapid procedure than circular suture. In the one case it is necessary accurately to sew up the two open ends of the intestine, to incise and to apply the plates, and in some cases to add a line of accessory sutures. End-to end suture does not require more than twenty minutes for its application after the bowel has been excised. I do not speak from personal knowledge of the technique of intestinal anastomosis, but from my experience with end-to-end suture I must say that there can be no more beautiful operation in surgery than the rapid and neat approximation of bowel ends when brought together by the interrupted Lembert method.

Another and very important reason for establishing continuity of the bowel at once is the fact that the small intestine, high up, may be the part involved, and the formation of an artificial anus would result in death from inanition. It is always easy to recognize the large intestine, but it is very difficult, if not absolutely impossible to tell what portion of the small intestine is involved.

My first case, which was fatal although the joint healed, took an hour for the performance of resection and suture, but the actual closure of the intestine did not consume more than twenty or thirty minutes. In the second case, which was successful, the whole operation was fifty-five and the suture between twenty and thirty minutes. The last operation took an hour, but the greater part of the time was occupied in finding the ends and in trying to approximate them so as to make an anastomosis.

In considering results we must bear in mind that the mortality is necessarily large in all methods of treatment, even in those cases which have been reported this evening, where death has followed the formation of an artificial anus, and that the constitutional effects of prolonged strangulation are in themselves extremely grave.

The method which I have described, and have employed in my last two cases of intestinal suture obviates one of the greatest dangers of the end-to-end method. I refer to the application of gauze to the line of suture. By this method I think there is little or no danger of a general peritonitis from extravasation. I have found in operations for appendicitis, in intestinal resections, cholecystotomies, and in laparotomies generally that adhesions are formed and the general peritoneal cavity shut off from the line of gauze very quickly. I have noticed that the fibre of the gauze is impressed almost immediately upon the peritoneum, and it apparently has some irritating effect. If the stitches do give way, we have not only the abdominal cavity shut off but an excellent drain provided. There is no danger of a permanent sinus, for we have still the greater part of the stitches holding. At most a small fistulous channel may remain precisely as is seen after excision of the appendix. The escape of fæces may last for two or three weeks, as I have observed time and again in operations upon the vermiform appendix. Sooner or later the fæcal discharge ceases.

I think the subject is a very important one, and I have often been in doubt as to the proper method to pursue in a given case. I believe that the best method to pursue in a case of gangrenous hernia, where the patient is in fair condition, is at least to give him the benefit of a free incision with relief to the ring and the formation of an artificial anus. If everything is favorable as to surroundings and assistants, and the patient's condition is good, I should favor immediate excision of the gangrenous portion of the intestine with the end-to-end interrupted suture of Lembert.

Dr. C. B. Porter: I think Dr. Richardson misunderstood me. I did not say that I thought that in no case of gangrenous hernia should an enterorrhaphy be done at the time. I said I thought that in nearly all cases where the intestine had been down long, if they are subjected long enough to pressure to produce the gangrenous condition, the patient was not in a condition to warrant that procedure at that time. I do not think Dr. Richardson can recall many cases of gangrenous intestine where there has not been great shock and great prostration and usually pretty marked collapse. That is the ground that I put my objection to the immediate enterorrhaphy on.

He speaks about the end-to-end suture, and if it might be allowed. I will just mention a case of end-to-end suture which I did last year under what might be considered very favorable circumstances. An old lady in the sixties had a very large abdominal tumor which was very adherent and which I removed. There were two very large lobes, closely placed to each other, and in between them, at the bottom of the deep sulcus, the intestine was attached, and it was not where I could see it, and in trying to lift out the tumor the intestine was torn in such a way as to require the resection of the whole lumen of the intestine. That was done, and the bowel closed end to end by fifteen silk sutures placed in the ordinary Lembert method, and then the continuous suture around beyond this. The patient made an uninterrupted recovery, and was discharged from the hospital seven weeks and two days after the operation. The operation lasted three hours.

Dr. Richardson referred to a statement that no cases of end-to-end suture had been reported where obstruction occurred. I would state that I mentioned one.

Dr. Burrell: There is one thing which has come to my mind, that in these intestinal resections that have been reported the Lembert suture has been used almost exclusively in all the cases; and I have wondered why approximation plates or segmented rings or some contrivance of that description had not been used by the gentlemen. I should like to ask Dr. Porter the length of time it would take for an average enterorrhaphy.

Dr. Porter: I learned the operations upon animals before these plates were used at all, and I feel rather at home with the operation. Perhaps that is one reason why I prefer it. I have the decalcified bone plates of all sizes in my office, but never have had occasion to use them. I have never timed myself on the operation. I should think it would be approximately twenty to twenty-five minutes.

Dr. Cabot: I should like to recall one case of a somewhat allied condition. This was a case of gangrene of the sac, which I reported some years ago. I operated upon an old German or Russian woman for strangulated hernia, incised the constriction and returned the hernia. I tucked the sac back into the ring and brought the pillars of the ring together over it. The patient was not in a condition to stand a long operation and bore it badly. She came out of the ether well, and did not vomit for the first twelve hours, but after that began again to vomit and went on not doing well, until on the second day after the operation I decided to open the wound again to ascertain whether there was not still some internal strangulation. I had recently had such a case and was on the lookout for it, and this continued vomiting seemed to warrant the belief. I opened the abdomen. There was no strangulation of any sort.

The bowel was perfectly free. The sac looked rather grayish, and I placed it well outside of the abdominal cavity, opening the original wound. The patient came out of the ether that time in better shape than before, and went on to an uninterrupted recovery. A large portion of the sac sloughed away later. I speak of this as something worth thinking of in some of these cases where there has been a good deal of pressure, particularly where there has been much taxis, as a reason for not always adopting the stitch of Mr. Macewen.

Dr. Gay: In regard to the time, I think my first operation took an hour, the second operation forty-five minutes.

Dr. Porter made one remark that makes me suspect that perhaps he thinks somebody has recommended that a distinctly gangrenous bowel should be returned to the peritoneal cavity. I have not heard any such recommendation as that made. It is the doubtful cases we sometimes put back, not the gangrenous ones.

Dr. Bradford reported

THREE CASES OF SEPARATION OF THE EPIPHYSIS AT THE HEAD OF THE FEMUR.[4]

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THE NEW YORK ACADEMY OF MEDICINE. SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, January 15, 1892, Samuel Ketch, M.D., Chairman.

THE DISAPPEARANCE OF LARGE PSOAS ABSCESSES.

Dr. Halsted Myers presented a case of lumbar Pott's disease, to illustrate the disappearance of very large psoas abscesses without material interference with the general health during the process.

In this case, which had a strong family tendency to tuberculosis, the abscess appeared early, had gradually increased in size; but after an attack of measles it had become much larger, so as to fill both iliac fossæ, and form pouches in both inguinal regions, as large as a man's fist. At this time the liver was slightly enlarged, but there never has been a trace of albumen in the urine. Eight months later, though still anæmic, the child felt well, had an excellent appetite, and the liver had regained its normal size. Absorption was rapidly progressing.

At present the child has a temperature ranging between 98.4° and 99.6, and has a few enlarged cervical glands; but he plays hard all day, has a good appetite, and feels well. The abscesses have almost entirely disappeared, and recovery seems assured.

Dr. Newton M. Shaffer said that he had seen this case from time to time, and could testify to the large size of the abscesses. This case would certainly have been considered by some of their colleagues, a fit one for a operative interference, notwithstanding that such an operation would necessarily have proved rather serious, on account of its extent. As usual, under proper mechanical treatment, the abscesses had disappeared.

Dr. V. P. Gibney said that, in connection with this subject, he desired to report an instructive case. About fifteen years ago, a boy was brought from the West to the hospital, with disease of the lumbar spine. The brace at that time in vogue at the hospital was applied, and the child did well for two or three years, when he experienced some pain in the left thigh, and a tumor appeared in the left iliac fossa. The speaker had advised the systematic use of hot-water douches over the parts, and the result of this treatment was considered at the time to be quite brilliant. He had only just learned the sequel of this patient's history. Shortly after the disappearance of the abscess from the iliac fossa, and while still wearing the spinal support, an elongated tumor made its appearance in Scarpa's space, and then burrowed down until it nearly reached the inner condyle. There was then some redness and tenderness, so the hot douches were resumed, with the effect of causing an entire disappearance of the tumor. Nothing further occurred until several years afterward, when after a fall or strain of some kind, a large and tender tumor made its appearance very suddenly on the outer side of the thigh, at the junction of the middle and upper thirds. This was accompanied by pain and considerable constitutional disturbance, and a surgeon incised the abscess, removed some bone detritus, and irrigated the cavity. Since then, although the sinuses have been washed out daily with bichloride of mercury solution, and afterwards with peroxide of hydrogen, and then dressed with sublimate gauze, they have been discharging pretty constantly, and there have been occasional symptoms of sepsis. The remnant of the sac can still be felt in the iliac fossa. The tumor which appeared on the outer side of the thigh was probably nothing more than the old abscess deflected by the concussion of the fall.

Dr. Gibney said that he had narrated this case, because it was one of those in which the abscess had disappeared under what was considered to be good treatment, and yet he was not entirely satisfied with this treatment. He had seen many cases in which the abscess had disappeared in this way, and he was glad when this occurred, but sometimes he could not help feeling that it might be better if he could, under thorough antisepsis, remove this pus by a surgical operation, and so relieve the patient from this constant menace.

THE USE OF IODOFORM IN THE LOCAL TREATMENT OF STRUMOUS JOINT DISEASES.

This was the title of a paper by Dr. J. D. Bryant. In this paper, the author used the terms, "strumous disease," and "tuberculous disease" synonymously. For practical purposes, the products of tuberculous joint disease, may be said to be located in the joint cavity and its lining membrane, and in the peri articular tissue, associated with this membrane. The rice and melon seed bodies in these diseased joints, are often infected with the tuberculous agents. In the present paper, the author excluded from consideration, disease of the integument, and of the immediate subcutaneous tissues.

The preparations of iodoform which had been used by the author were ten per cent. solutions with ether or glycerine. The ethereal solution was easily obtained in an aseptic condition, it flowed freely through needles of small calibre, and by its rapid diffusibility, quickly deposited the iodoform upon the disease products. But this very property of rapid diffusibility made it objectionable on account of the liability of producing constitutional effects, and because of the irritation produced by the fluid, which made the injections extremely painful, and often gave rise to circumscribed abscesses. A solution of iodoform in sterilized glycerine or oil had the advantage of not producing these unpleasant constitutional effects, and of not being painful when injected, but on account of its viscidity, it was necessary to employ needles of large calibre. It was well to remember that all iodoform solutions are prone to undergo chemical decomposition, especially when nearly saturated, or when exposed to sunlight. Camphor has the property of increasing the solubility of iodoform in these fluids, so that a saturated solution of camphor in olive oil will dissolve six per cent. of iodoform.

No definite rule can be laid down as to the amount of iodoform which can be injected without danger of producing constitutional effects; thus one and a half grains have been known to give rise to these symptoms, while in other cases, no such result has followed the introduction of one hundred and fifty grains. It is generally considered that thirty grains of iodoform may be injected, but the difference of action of the ethereal and the glycerine solution must be borne in mind.

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[4] See page 212 of the Journal

The author then spoke of the different manifestations of iodoform poisoning, those cases being considered the most dangerous in which there was a rapid and compressible pulse, either with or without fever. Then the presence of iodoform in the human system is evidenced by a disagreeable taste; the introduction of a silver piece into the mouth, will immediately develop a garlic taste, which, according to Poncet, is characteristic of the presence of iodoform. Another test is the production of a canary-yellow color when calomel is mixed in the saliva.

The author related in detail the histories of two cases, to illustrate the action of the iodoform in the treatment of joint disease. In the first one, the patient, aged eighteen, was admitted to Bellevue Hospital on February 17th, 1891, with a history of having suffered from disease of the knee-joint for three years, during which time, he had been treated in various ways without benefit. The synovial cavity was greatly distended with fluid, there was no special tenderness, and no increase in the temperature of the joint. There was much relaxation of the ligaments, and lateral motion on hyperextension. Walking did not cause pain, but there was so much relaxation of the lateral ligaments, that locomotion was impracticable without confining the joint with a bandage or splint. On February 21st, the joint was opened by a free incision, and its cavity thoroughly irrigated with a 1 : 2000 solution of bichloride of mercury. Numerous melon-seed bodies were evacuated, and the wound then closed. The wound healed by primary union, and the joint was diminished in size, but the previously over-distended soft parts remained fleshy, and the relaxed ligaments made the joint very insecure. On April 1st, the joint was opened in two places, at the site of the former incision, and at the outer side of the quadriceps tendon, so as to lead directly into the outer pouch of the upward prolongation of the synovial cavity. After a thorough irrigation with 1 : 2000 solution of bichloride of mercury solution, and the complete removal of numerous "rice-seed" bodies, the cavity was irrigated with a ten per cent. ethereal solution of iodoform, and the wounds closed as before. Primary union occurred without reaction. A portion of the synovial membrane was removed at this operation, and was sent to Dr. Briggs, who reported that there was no doubt about its being involved in the tubercular infection. From this time until May 1st, the knee diminished in size, and increased in stability, yet the latter was not sufficient to render the joint secure. On May 9th, a small quantity of fluid still remained in the joint, and as the patient was anxious to leave the hospital, two ounces of a ten per cent. solution of iodoform in glycerine were injected directly into the joint cavity. There was no reaction, and after four or five days rest in bed, the patient was allowed to go around the ward, and on June 16th, he was discharged. There had been no pain, tenderness, or effusion for two weeks prior to his leaving the hospital. Should a similar case come under his observation, the author said that he would prefer to open the joint at once, in two places, clean out the cavity by irrigation and manipulation, and after perfect union had been secured, inject into the cavity, two or three ounces of a ten per cent. solution of iodoform in sterilized glycerine or oil.

In a second case, one of old knee-joint disease, attended with considerable flexion of the leg and subluxation of the head of the tibia, occurring in a man, twenty years of age, iodoform injections were begun after other recognized methods of treatment had failed to produce any noteworthy local improvement. The case was under the care of Dr. Girdner, of this city.

Eight drops of a twenty per cent. solution of iodoform in ether were injected at each of three separate points of greatest tenderness, into the deepest tissues, and perhaps some portion into the joint itself. Great pain was produced at the site of the injection, followed by numbness of the limb, and persistent nausea for twelve hours, and, as the same symptoms followed a second injection, it was decided to substitute a twenty per cent. solution of iodoform in glycerine. This latter preparation caused less pain in the limb and no systemic disturbance. The injections were repeated every two or three days. At the end of thirty days, the joint was free from pain and swelling, the doughy feeling was gone, there was voluntary motion, and considerable weight could be borne by the limb. His general condition also kept pace with the local improvement, and at the present time, the limb is nearly as strong as the other; there is considerable motion, so that the patient can walk on it without artificial aid. There can be no reasonable doubt of the tuberculous nature of the disease of the joint in this case, nor of the curative effects of iodoform.

Dr. A. B. Judson had failed to see the necessity or desirability of using iodoform in joints which are under mechanical treatment. In children thus affected, local medication may be ignored in favor of general treatment. He believed that the trouble is not so much a local fault, as a failure for some reason or other, of the system to arrest the morbid action, and repair the damage already done, and the system, rather than the affected part, should receive most attention. Mechanical treatment is a local application, but its indirect action is of the utmost importance in relieving pain, permitting sleep, facilitating locomotion and promoting general well-being. It prevents the injurious effects of habitual trauma and provides for ultimate symmetry and ability. Beyond this roborant and reconstructive treatment, general medication is in order, reinforced by hygiene and an abundance of rich and wholesome food, in which cream and other forms of animal fat should be in excess. He believed the effects thus produced leave no room for the administration of antistrumous injections.

Dr. Royal Whitman said that he was surprised to hear the previous speaker express doubt as to the influence of iodoform on tuberculous processes, for, it was not a matter of opinion, but of record: Bruns, Krause and other investigators had shown that the membrane of tuberculous abscesses ordinarily consists of four layers: (1) an outer layer of thick porous tissue; (2) a layer of spindle cells in a state of active proliferation; (3) actual tuberculous granulations, and (4) necrotic and degenerated tissue. The two inner layers contain the tubercle bacillus. Under the iodoform treatment, it was found that healthy granulations sprang from the spindle-cell layer, the bacilli disappeared and the tuberculous granulations and inner layer were converted into a fluid, which might be absorbed or withdrawn with an aspirator. Arens, in a recently reported series of 255 cases of tuberculous disease of various joints, states that under the iodoform treatment, forty per cent. showed very marked improvement. The most favorable cases were those of disease of the wrist and elbow. Trendelenberg had given up the use of the ethereal solution in his clinic, because of the pain produced. Instead, he uses a twenty per-cent. solution of iodoform in oil, injecting about one teaspoonful at intervals of eight days. Krause uses a larger quantity, thirty to eighty cubic centimetres, injecting at intervals of three weeks. Bruns states that eighty per cent. of all abscesses may be made to disappear by the use of iodoform, and the specific action of this drug on the tubercle bacillus, seems to be very generally recognized. Trendelenburg is now using oil and iodoform at a temperature of 100° C., with the object of making a solution of the iodoform in the oil, and of securing its deposition in a more finely divided state.

Dr. Samuel Lloyd said that he had seen very remarkable results in his clinic, following the use of injections of iodoform emulsion, both in joint difficulties and in tubercular adenitis; in fact, in the latter class of cases, they acted so satisfactorily that they had been used almost to the exclusion of operative measures. In some cases where tubercular deposits had been found in the lungs, the change was very decided after the injections, especially when these were pushed up to the point of producing constitutional effects. In one or two cases where operative procedures had been undertaken, and secondarily, injections had been used on a recurrence of the disease, the improvement was much more rapid than after the first operation when the iodoform was not employed. When using the iodoform injections in abscess cavities, the results had not proved good until the cavity of the abscess had been washed with hot water, or with some antiseptic solution. It is advisable then to inject the emulsion up to the point of causing some distension. Dr. N. Senn had had a similar experience; and in his recently published article on this subject, he says he uses weaker solutions of iodoform, but in larger quantities.

Dr. R. H. Sayre said that in using these injections, he had felt the necessity of employing the iodoform in a more finely divided state, and therefore, he thought it was an advantage to use the heated oil. He recalled two cases of suppurating ankle-joint disease, one of which had been treated by injections of iodoform, and the other by injections of aristol. They had done equally well, and after about two months of treatment, the evidences of inflammation had entirely disappeared, and there was no pain or tenderness about the ankle. A splint had been applied to take off the weight of the body. In a case of tubercular inflammation of the thumb, he had obtained a good result from the injection of a ten per cent solution of iodoform and likewise in some abscesses.

Dr. H. L. Taylor said that he endorsed what Dr. Judson had said as to the value of mechanical treatment, and yet welcomed the method presented in the paper. His experience with iodoform in a few cases, had convinced him that it had a specific action on tubercular tissue. One of his most striking cases, was that of a typically tubercular subject, a youth of seventeen years, who had been for some time under observation of Dr. Da Costa for suspected pulmonary disease. He had been hobbling about without crutches, in spite of advice, for about one year after the development of symptoms of tarsal disease, before he came under the speaker's care. He was made to use crutches, and the foot was immobilized with an apparatus. After some months, a sinus having appeared, on the advice of Dr. Abbe, injections of an ethereal solution of iodoform into the joint were begun. He could honestly say that the entire appearance of the affected parts was changed after one injection, and the subsequent progress of the case to complete cure, although slow, was steady. He had also used the iodoform emulsion in sinuses about joints, and he believed that this treatment produced beneficial effects independently of its antiseptic action.

The Chairman said that about two years ago, while visiting the clinics in Germany, he had seen a good deal of this treatment with the ethereal solution of iodoform, and he had been impressed with the great frequency of symptoms of iodoform poisoning, and with the general disregard of mechanical treatment shown by these surgeons. Still, he believed that in these iodoform injections, we had a valuable adjunct to mechanical treatment, and one which had not been sufficiently tested by American orthopedic surgeons.

Dr. Bryant, in closing the discussion, said that he had not had the slightest idea of substituting the iodoform injections for mechanical treatment, but he had thought that it could not fail to be a valuable adjuvant to this treatment, on account of its well-known influence upon the tubercle bacilli, and because the injections could be so easily made. In the case of knee-joint disease which he had described, there the rice and lemon seed bodies were in such large numbers, he did not believe that mechanical treatment alone would have cured the case; in fact, the patient had had this treatment and had not been benefited by it.

Recent Literature.

Ptomaïnes, Leucomaïnes and Bacterial Proteids; or, the Chemical Factors in the Causation of Disease. By Victor C. Vaughan, Ph.D., M.D., and Frederick G. Novy, Sc.D., M.D. Second edition, revised and enlarged. Philadelphia: Lea Brothers & Co. 1891.

This book is rewritten from the old edition of three years ago, and, being brought up to date, is a material improvement on the first. Ptomaïnes are defined as those chemical compounds which are basic in character and are formed by the action of bacteria on organic matter; while leucomaïnes are those basic substances which result from tissue metabolism in the body; the bacterial proteids are those formed by the fermentative action of bacteria. It will be seen, therefore, that the difference between a ptomaïne and a leucomaïne is simply one of origin, and does not indicate any fundamental difference between the two groups.

A brief chapter is devoted to the history of the bacterial poisons, and then a *résumé* of some poisonous foods, with the symptoms produced by them, is given. The list includes mussels, fish, sausages, ham, meat, cheese, milk, ice cream and bread. Cases of poisoning by mussels and fish are included in which it is not at all clear that the poison existed in the food, and judging by the more recent reports were probably due to bacterial infection. Their inclusion, however, only increases the value of the book.

The fourth chapter is devoted to a general consideration of infectious diseases, and gives very much the position held by all intelligent workers, while in the next the poisons of particular diseases are treated. The list includes anthrax, Asiatic cholera, tetanus (for which he recognizes two germs, that of Nicolaier and that of Kitasato), tuberculosis, diphtheria, suppuration, the summer diarrhœas of infancy and typhoid fever. The summer diarrhœas are rightly attributed to many kinds of bacteria, and the credit for this discovery is given to Vaughan, Barker and Escherich. The position held in regard to typhoid fever is peculiar to the authors, namely, that the Eberth bacillus, as found in the spleen after death, is an involution form of any one of a number of germs which are found in certain waters.

The latter, and by far the larger, part of the book is devoted to the chemistry of the subject. The methods of work are outlined, and the importance of some of the poisons to the medico-legal examiner are pointed out. Fifty-nine ptomaïnes and eighteen leucomaïnes are considered in detail, among which is to be found the old acquaintance of many, xanthine. The last chapter is devoted to auto-infection, while last, but not least, there is a most extensive bibliography of the chemistry of the subject.

As a whole, the book is clearly written, well arranged and comprehensive, but gives one the impression of underrating the knowledge possessed by all bacteriologists. The book will be found a great convenience to all who desire to form a measure of our present knowledge of the difficult subject of bacterial and somatic poisons.

Diphtheria : Its Natural History and Prevention. Being the Milroy Lectures Delivered before the Royal College of Physicians of London, 1891. By R. Thorne Thorne, F.R.C.P., F.R.S., London, assistant medical officer to Her Majesty's Local Government Board. London and New York : Macmillan & Co. 1891.

The author's position under the Local Government Board and his work in connection therewith are a guarantee of his fitness to deal with the subject which he chose for the Milroy lectures of 1891. A final chapter consisting of eighteen conclusions, sums up the author's views. From among these "conclusions" we extract the following: (2) During the past twenty years there has been a progressive increase in the rate of mortality from diphtheria in England and Wales; (12) There is reason to believe that attacks of so-called "sore throat" exhibit under certain favoring conditions a "progressive development of the property of infectiveness," culminating in a definite specific type which is indistinguishable from true diphtheria.

Surgery. A Practical Treatise with Special Reference to Treatment. By C. W. Mansell Moullin, M.A., M.D. Oxon., Fellow of the Royal College of Surgeons, Surgeon and Lecturer on Physiology to the London Hospital, etc. Assisted by various writers on special subjects. With five hundred illustrations, two hundred of which have been made for this work from special drawings. Philadelphia : P. Blakiston & Co., 1012 Walnut Street. 1891.

The book is divided into three parts. Part first includes the general pathology of surgical diseases ; part second that of injuries ; and part third the diseases and injuries of special structures and organs. The specialists in their respective departments, have contributed satisfactory chapters, although it may be questioned whether it is wise to introduce into a treatise on surgery the diseases of the eye. The volume as a whole is quite satisfactory as a guide to the general practitioner. It, however, is far from the ideal. Many of the cuts are imperfect, and express but little. There is a want of appreciation of the relative importance of the subjects dealt with. For example, so important a subject as anæsthesia, including a consideration of local and general anæsthesia, the administration of nitrous oxide, ether, chloroform and the A. C. E. mixture, is dismissed in two pages and a half ; while the relatively unimportant subject of spina bifida occupies four pages and a half, and lateral curvature of the spine occupies six pages and a half. Very few references are given to authorities quoted, and while this is excusable, yet it is not quite satisfactory. However, the reader will find many subjects treated with a commendable attention to important details. The chapter upon fractures is valuable, and the author's conservatism is worthy of careful consideration.

Lectures on Tumors from a Clinical Standpoint. By John B. Hamilton, M.D., LL.D., Professor of Principles of Surgery and Clinical Surgery, Rush Medical College, Chicago ; and in the Chicago Polyclinic ; etc. For the use of Students. Physicians' Leisure Library. Detroit, Mich. : George S. Davis. 1891.

This little book presents the lectures by the author, as they were taken down by a stenographer. The author's aim was to impart "the current information in a form intended to fix it in the memory." There are a few interesting cases recorded, but the book, as a whole, is not one that we can commend. Many broad statements are made, and, unfortunately, typographical errors are frequent.

Surgical Bacteriology. By N. Senn, M.D., Ph.D., Professor of Surgery, in Rush Medical College, Chicago ; and in the Chicago Polyclinic ; Attending Surgeon to the Milwaukee Hospital, etc. Second edition, thoroughly revised. Philadelphia : Lea Brothers & Co. 1891.

The first edition of this book was quickly exhausted, and in the second edition "the author has aimed to add new facts illustrative of the relations of pathogenic micro-organisms to the various surgical lesions, and eight new illustrations have been inserted in the text, descriptive of microbes, not illustrated in the first edition."

The material for this book has been obtained from the current literature, and it embodies the best work of the leading men. The book has been divided into chapters, which will be a matter of convenience to the reader. The index of subjects and the index of authors are of considerable value in referring to various subjects. The book, as a whole, is an excellent presentation of the literature of surgical bacteriology. The plates are extremely valuable, and serve to illustrate the text in a very satisfactory manner. To any one desiring a general idea of surgical bacteriology we can commend this volume.

The new hospital at Antananarivo, the capital of Madagascar, was opened by the Queen of Madagascar recently. It is sustained by the Society of Friends of Great Britain.

THE BOSTON

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THE PUBLIC HEALTH IN MASSACHUSETTS: TYPHOID FEVER AND THE TYPHOID BACILLUS.

The Twenty-second Annual Report of the Massachusetts State Board of Health, for the year 1890, comprises the general work of the Board and papers upon special sanitary topics, including a report to the legislature upon water-supplies and sewerage, with a statement of the advice of the Board given under the law of 1888; examinations of water-supplies and rivers; suggestions as to selection of sources of water-supplies; report of food and drug inspection; summary of weekly mortality reports; statistics and observations on the growth of children, by Prof. H. P. Bowditch; typhoid fever in its relation to water-supplies; health of towns.

The six cases of small-pox which occurred in the State during the year, with one death, were investigated and at once controlled, such cases as occurred in other States and in Canada being also reported; severe local epidemics of diphtheria revealed, besides infection, bad sanitary conditions and, in one case, a probably infected milk-supply; a special investigation indicated an increased number of deaths from hydrophobia and a wider prevalence in the State; two cases of trichinosis, a rare disease with us, were reported; one noxious trade, for the manufacture of Paris-green, was so regulated as to abate the nuisance.

Advice regarding water-supplies was given in 17 cases; in 17 also with reference to sewerage and sewage-disposal. Three hundred and forty-five pages of the report are given to a minute investigation and report upon the various questions affecting water-supplies and sewerage and the purification of sewage and of water by filtration. The facts determined and the observations thereupon maintain the high standard of scientific and practical value with which we have become familiar in previous reports of the Board.

Including milk, 5,585 samples of food were examined, of which 1,814 were found impure or not conforming to the statutes; of 3,236 samples of milk, 1,858 were above the standard and 1,378 below, or adulterated; in 400 samples of drugs, the percentage of adulteration was 1.87.

The weekly reports of mortality, although not complete, have been distributed to boards of health and otherwise, thereby furnishing an important index of the prevalence of disease in the several parts of the State.

Mr. Mills, the distinguished engineer, a member of the Board, contributes a most important study of the excessive death-rate from typhoid fever in Lawrence and Lowell.[1] For the twelve years ending in 1889, those two cities had average annual typhoid death-rates of 8.33 and 7.63 for each 10,000 inhabitants, as compared with an average of 4.62 in the 28 cities of the State. In the year ending April 1, 1891, the rate in Lawrence, with a population of 45,000, was 17.33; and in Lowell, 19.23, with a population of 78,000. There was at the same time no noteworthy increase in deaths from typhoid fever in the other cities and towns of the State.

In Lowell the cases were very generally distributed throughout the city, the numbers following nearly the density of the population, all being supplied by the city water. The cases found in Lawrence were all within the area provided with water from the city water-works, and they were proportionately more numerous near the reservoir than at a distance from it.

The fact was discovered in November that the water-supply of Lowell was contaminated by fæces of typhoid-fever patients discharged into Stony Brook, only three miles up stream from the intake of the Lowell water-works, and in a very few weeks after there was a rapid increase in the number of deaths from typhoid fever in the city. Six weeks later there was an alarming increase in the number of deaths from typhoid fever in Lawrence, the water-supply of which is drawn from the Merrimack River nine miles down stream from the point where the Lowell sewage enters the river. In December the typhoid fever bacillus was found in water from the service-pipes in Lawrence.

The temperature of the river-water in November was from 45° to 35° F.; the distance from the sewers in Lowell to the intake of the Lawrence water-works is nine miles, and the time for the water to pass from the sewers to the intake was at that time less than eight hours. Entering the reservoir the same day, the water would reach the outlet and enter the service-pipes within ten days — most of it within a week. It would then be distributed over the city, in the portions near the reservoir, in about one week from leaving the sewers of Lowell, and in more remote parts of the city in about two weeks.

To prove whether typhoid fever germs would survive in the Merrimack River water, when at the low temperature of the month of November, long enough to pass from the Lowell sewers to the service-pipes in Lawrence, a series of experiments was made by the

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[1] For Epidemic of Typhoid Fever in Lowell, by Prof. W. T. Sedgwick, see Journal, vol. cxxiv, pp. 397, 426.

Board by inoculating water from the service-pipes with typhoid fever germs and keeping the water in a bottle surrounded by ice, at as near freezing as practicable, for a month, and each day taking out one cubic centimetre and determining the number in it of typhoid fever germs. The number constantly decreased from 6,120 the first day, 3,100 the fifth day, 490 the tenth day, 100 the fifteenth, to none on the twenty-fifth. The experiment clearly showed that typhoid bacilli from the sewers in Lowell may live in winter to enter the reservoir of the Lawrence water-supply; that the numbers will decrease in the reservoir; that a considerable portion will live to enter the service-pipes, and that this portion will decrease as the water proceeds in the pipes across the city — a fact which apparently explains the reason why much the larger number of cases of typhoid fever were in parts of the city near the reservoir; but that some germs survived the passage through the pipes was proven by their being found in water drawn from the service-pipes, in December, at the Experiment Station, across the city two and a half miles distant from the reservoir.

It was found, by the inquiry, that in general in the cities of the State the death-rate from typhoid fever has been greatly reduced by the introduction of pure water; that in one city (Holyoke), where there was not such a reduction, a portion of the people used, for drinking, water from canals or from wells subjected to serious pollution by sewage, and that the deaths from typhoid fever are much more frequent among that portion of the community which uses the contaminated water than among others.

The only two remaining cities, which have not diminished death-rates from typhoid fever after the introduction of water-supplies, receive their supply from a river polluted by sewage. The season in which typhoid fever prevails in these two cities is later than in other cities, and in the lower city on the river later than in the upper city; also in the lower city at a season when other places are nearly free from the disease, and when it would be prevalent if produced by the sewage of the upper city. Further, during the greatest prevalence of typhoid fever in the upper city, when the water of the river which passed the upper city and received its sewage had reached the service-pipes of the water-supply of the lower city, and there was the greatest prevalence of the disease in the lower city, typhoid fever bacilli were found in water taken from the service-pipes.

The wisdom of the legislature is shown in their financial support of the Board, the general expenses for the year having been $9,871.01; for food and drug inspection, $10,112.39; water-supply and sewerage, $25,161.46.

The Opening of the Langenbech Haus in Berlin will take place formally this spring during the annual meeting of the German Surgical Society. This is the building which has been erected as a place of meeting of all the medical societies in Berlin.

HERTWIG'S THEORY OF IMMUNITY.[1]

The theory of immunity recently propounded by Prof. Oscar Hertwig, the eminent anatomist and embryologist at Berlin, is especially worthy of note, not only because of the source from which it proceeds, but because it is an ingenious attempt at mediation between the contesting cellular and chemical hypotheses. Hertwig takes his stand upon the highly important discoveries of Pfeffer, Stahl, Gabritschewsky and others, regarding the influence of various chemical substances upon micro-organisms.

The distinguished plant physiologist Pfeffer, as is well known, found that certain chemical substances soluble in water exert an influence, part attracting and part repelling, upon freely motile plant or animal cells such as infusoria, spermatozoa, bacteria, leucocytes and their like. This phenomenon of "chemotropism," or "chemotaxis," is positive if the organisms advance towards the place from which the chemical stimulus proceeds, negative if they retreat from it. Malic acid in high dilution, for example, exercises a generally positive chemotropic effect, chloroform, a negative. That these terms "positive" and "negative" have only a relative value is shown by the fact that while a very weak solution of malic acid will attract motile organisms towards the capillary tube in which it is contained, a stronger solution — five per cent. — will actively repel the organisms. That is to say, the positive effect becomes a negative one as a result of the concentration of the chemical substance.

Furthermore, to continue with the example of malic acid, if the organisms are *ab initio* in a solution containing malic acid, a stronger solution of that acid will be required in order to attract them than is the case if they are in pure water. A solution of malic acid of sufficient strength to attract organisms from pure water will have no effect upon organisms already immersed from the start in dilute malic acid. On the other hand, a solution so strong as to repel organisms in pure water, will, in dilute malic acid, attract them. The spermatozoa of the fern, to use the classic example, when in a weak solution of malic acid are attracted by a solution so strong as to repel the spermatozoa when the latter are in pure water.

Negative chematropism may therefore, under changed conditions, become positive. This fact is of cardinal importance in Hertwig's conception of immunity.

The white cells of the blood are apparently very susceptible to chemotropic influences. The metabolic products of pathogenic bacteria — whether "ptomaïnes," "toxines," or something else — exert in general, a positive effect upon the leucocytes and so draw them towards the source of the stimulus, that is to the "inflammatory centre."

Hertwig points out that the numerous chemotropic possibilities group themselves under two heads. In the first place, the metabolic bacterial products may be present in the blood and in the diseased tissues in almost or quite equal proportions. In this contingency there will be no effective chemotropic stimulus, and the leucocytes will consequently not be drawn towards the affected locality.

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[1] Ueber die physiologische Grundlage der Tuberculinwirkung: eine Theorie der Wirkungsweise bacilläres Stoffwechselproducte, Jena, 1891.

In the second place, the substances accumulated in the blood and diseased tissues are of different degrees of concentration in the two places, and this difference causes a chemotropic movement of the leucocytes. Here there are obviously two possibilities, either the higher concentration exists in the blood or in the diseased tissues. In the latter case the leucocytes are drawn into the affected locality; this is perhaps the most ordinary and well-known condition — as in suppuration. In the former case the leucocytes, which in other conditions might have gathered in the diseased area, are retained in the blood-vessels.

In Hertwig's opinion the action of Koch's tuberculin can be best explained by reference to some such chemotropic phenomena. Suppose that the metabolic products of the tubercle bacilli are in so high a degree of concentration in the tissues as to exert a repellent, or negatively chemotropic, effect upon the leucocytes, which, in consequence, shun the affected area. On the injection of tuberculin into the blood the leucocytes, after the analogy of the spermatozoa and malic acid, become attracted by the bacterial substances in the tissues which were previously so relatively concentrated as to repel. In this way Hertwig thinks to explain the reactions following the introduction of tuberculin into the blood. On this assumption also he believes it possible to explain many of the perplexing and disastrous consequences of injections of too large quantities of tuberculin. He concludes that Koch's application of tuberculin injection "rests upon a thoroughly sound physiological foundation."

Hertwig's further treatment of the subject ventures upon the much controverted ground of the phagocyte-theory and its implication. He considers that Metchnikoff's view is essentially correct and refers the artificial production of immunity to the greater sensitiveness which the leucocytes have acquired toward the bacterial products, and consequently toward the bacteria themselves. The arguments presented in support of this view are perhaps more ingenious and suggestive than convincing.

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MEDICAL NOTES.

RESTRICTION OF IMMIGRATION. — Secretary Foster has suggested to Congress that the head tax of fifty cents on each immigrant be abolished and that a tax of one dollar, to be paid by the importing company, be substituted; also that each company file a bond of not less than $50,000 for the return of immigrants found within two years after landing to have been brought in contrary to the laws of the United States. A system of preliminary inspection before embarking is also proposed, to be under the charge of a body of commissioners and inspectors responsible to the United States Consuls.

THE RIOTS IN BERLIN. — As a result of [illegible] in Berlin last week, there were twenty-five admissions to the hospital, the principal injuries being broken arms and legs and sabre cuts.

INFLUENZA IN EUROPE. — During the week ending February 13th, the epidemic of influenza in London had sensibly diminished. The death-rate was thirty per thousand. In most of the Continental cities, the disease appeared also to be decreasing. In Vienna an epidemic of intestinal catarrh followed the previous influenza epidemic. Whether there is any connection between the two has not been definitely settled.

SIR MORELL MACKENZIE'S FEES. — According to the *Medical Press*, it is stated that the sum, which the late Sir Morell Mackenzie was paid for his attendance on the late German Emperor was £12,000. After this a hundred guineas for removing an elongated uvula seems a comparatively moderate fee for such an operation, but this was what the distinguished specialist received a few months ago from an eminent lawyer who was under his care for this affection.

A WARNING FROM VIRCHOW. — The correspondent of the *Lancet* says that on February 9th, Professor Virchow addressed the following to one or more of the Berlin papers: "Cincinnati papers publish lengthy advertisements, according to which the 'great German physician,' Dr. Karl Virchow Schick, has arrived there from Berlin and opened his consultations. It is alleged that he has made important discoveries in the germinal treatment of chronic diseases, and that his prescription is used by 806 doctors in Europe. Permit me to remark that, according to the official lists, there is not and never has been a physician of this name in Berlin or in Prussia, and that such a one from the other States of the German Empire is also not known. It is hoped that this notice will suffice to induce the American papers to oppose the tactics of the gentleman in question."

INSTRUCTION FOR GERMAN ARMY SURGEONS.—In order that the Prussian medical officers shall have an acquaintance with the new discoveries in the department of public medicine, arrangements have been made for their attendance on a course of lectures to be held in all the Prussian Universities. These courses will extend over three weeks of each year at the end of the regular session, and it will be incumbent on each surgeon to attend one such course.

TUBERCULOSIS AND EARTHWORMS. — MM. Lortet and Despeignes have published the results of some experiments showing the connection between the common earthworm and the tubercle bacillus. They find that the bacillus may remain for several months in the worm without changing its virulence.

BOSTON AND NEW ENGLAND.

MORTALITY OF BOSTON. — The number of deaths reported during the past week was 197, making the death-rate 22.3. Four deaths were due to influenza, 29 to consumption, 34 to pneumonia, 15 to heart dis-d 11 to bronchitis. The number of persons who d over sixty years of age was 42.

Boston Bath House Co.— A company is soon to be incorporated with the above title to establish baths for the poor of Boston, following the steps of the chief European cities and the recently established People's Baths in New York. There is already a small establishment of this kind in Boston where, during the first year, three thousand men, women and children made use of it. It is hoped that after the baths are established they will be self-supporting. About $40,000 are needed for the establishment of the institution.

A Bequest to Institutions.— By the will of the late Caroline P. Adams, of Newton, the following are among the public bequests: Children's Hospital, $2,500; Adams' Nervine Asylum, $10,000.

Defilement of the Beaches.— The Committee on Public Health of the Massachusetts Legislature has recently considered a petition of the town of Swampscott for legislation to protect that town and other towns from injury and danger to the public health occasioned by the floating back of the garbage and filth of the City of Boston on to their beaches and shores.

NEW YORK.

Typhus Fever. — During the last week several deaths have occurred among the typhus fever patients on North Brothers' Island, and some twenty-five cases have been pronounced well. A number of new cases have occurred among the Russian Hebrews of the *Massilia*, and, notwithstanding the energetic efforts of the sanitary authorities to prevent the spread of the disease, a few cases have developed among people, not of this class, who frequent the cheap lodging-houses. In two or three instances the nature of the trouble was not discovered until after the patients had been removed to Bellevue Hospital. All suspicious cases at that institution are now isolated and carefully watched, and as soon as it becomes evident that the disease is typhus the patient is transferred to the hospital for contagious diseases at North Brothers' Island.

City Care of the Insane. — The advisory committee appointed by the Mayor to make a thorough investigation and report as to the best means of taking care of New York City's pauper insane, after inspecting the institutions on Ward's and Blackwell's Islands, where they found the conditions so unfavorable on account of the inadequacy of the buildings and the overcrowding of the inmates, made a visit to the City's Farm for the Insane at Central Islip, Long Island, where there are now 250 acres under cultivation by the patients, and discovered a most marked and favorable contrast in the state of affairs. More recently they visited the Binghamton and Willand State Hospitals for the Insane, and their report, which is now being prepared, will soon be presented.

State Charities. — The Twenty-fifth Annual Report of the State Board of Charities was recently transmitted to the Legislature, and shows the value of the property held by the charitable, correctional and reformatory institutions of the State on October 1, 1891, to be something over $72,000,000 as against about $64,500,000 at the same date the preceding year. The number of inmates in these various institutions was 747,773, an increase of 3,878 during the year, and of these 16,647 were insane. Total increase of insane in the last eleven years has been 7,110, or nearly seventy-five per cent., while the increase in the general population of the State has been only about nineteen per cent.

Centenarians. — Two centenarians have died in the city during the past week. The first was Mrs. Mary Climints, who was born in Ireland and when she came to this country twenty-eight years ago she brought with her her baptismal record, which shows her to have been one hundred and three years, eight months, and fifteen days old at the time of her death. She had nine children and her descendents are now very numerous. She always enjoyed perfect health, and of late years had lived with a son, now eighty-four years old. She kept house for him, and on the day that she died, got up at five o'clock as usual to attend to her morning duties. The other centenarian was an Italian whose age was reported to the Bureau of Vital Statistics as one hundred and five years. For two years past he had been an imbecile. The oldest woman of the Tonawanda Indians died in February, on the reservation near Buffalo, at the age of one hundred and two. She was the widow of the Warrior Black Squirrel who distinguished himself on the Niagara frontier in the War of 1812.

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Miscellany.

BULLET WOUNDS FROM THE MANNLICHER RIFLE.

An Italian officer who had the opportunity of studying gun-shot wounds made with the Mannlicher rifle during the late war in Chili describes these wounds as different from those produced by the older weapons.[1] They either kill on the spot or produce a wound which is generally not very serious. Even at long range bones are pierced without leaving behind pieces of steel or lead, and also without producing splintering of the bone to any extent. The balls which were removed from wounds had entirely preserved their form, not being either flattened or broken. The author promises soon an extended report on the subject which will be of great interest to military surgeons. These peculiarities of modern rifle bullets have been noticed already by Professor Bardeleben in Berlin, who said that in case of war, wounds made by the present German infantry would be characterized by the straightness of the course of the bullet and the lack of injury to the neighboring soft parts. The bullet is of small calibre, made of lead coated with steel, and is sent with great velocity.

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[1] Wiener klin. Woch., February 11.

IN MEMORIAM. DR. HENRY I. BOWDITCH.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

THE Boston Society for Medical Improvement honors itself in honoring the memory of Dr. Henry Ingersoll Bowditch, and in placing upon the records of the Society its appreciation of his services to medicine and its admiration of his character.

Dr. Bowditch was for fifty-seven years a member of our Society, and was, until his health failed, most constant in his attendance at our meetings. His ardent, eager zest for any knowledge that might help his patients; his fervid advocacy of every movement to benefit medical science or raise the standard of our profession; his generous recognition of all earnest, true work; his respect for every honest opinion; his frank criticism of what he held to be untenable; his zealous defence of the right; his strenuous support of every good act or thought, — are familiar to us all. His quick intuition and ready sympathy, his innate sense of justice and intense love of truth, the genuineness of his purpose, the unselfishness of his life, the sincerity of his friendship, will always be held by us in grateful and loving remembrance.

His faithfulness to his trust marked him as the physician. His heroism, his public service, the labors and the distinctions of his loved profession brought out in bolder relief the simplicity and modesty of the man.

To Dr. Bowditch's family the Society respectfully offers its sincere sympathy.

CHARLES F. FOLSOM,
GEORGE B. SHATTUCK,
EDWARD H. BRADFORD.

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METHYLENE-BLUE IN CYSTITIS.

AT a recent meeting of the New York County Medical Association, Dr. Joseph N. Henry presented two specimens of bright blue urine, which, he said, were from patients suffering from chronic cystitis whom he had been treating with an aniline dye. He had adopted this plan in consequence of reports which he had seen in German journals, and it was his practice to give one grain of methylene-blue three times a day, after meals. One of the patients, who had been suffering for over two years, had locomotor ataxia and prostatitis, and gave a syphilitic history. There had been twenty per cent. of mucus in the urine; but in three weeks this had been reduced to one or one and one-half per cent. The other case was non-specific, and the patient had just been discharged cured.

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METHYLENE-BLUE IN MALARIA.

FOLLOWING the suggestion of Guttmann and Ehrlich, Thayer[1] reports five cases of malaria treated at the Johns Hopkins Hospital with methylene-blue. The usual dose was one and a half grains five times a day.

In all the cases the urine was carefully examined, and no albumen was at any time found. In all of the cases where methylene-blue alone was given, its administration was followed within the first three days by slight strangury, which, however, was immediately relieved by nutmeg, and in the cases where nutmeg was given in the beginning there were no unpleasant results. The urine in all the cases was of a deep blue color; the fæces, though untinged when passed, became blue on exposure to air. The sweat and saliva, however, did not appear to be colored.

All of the cases, with the exception of one, were of the more chronic and severe types of malarial fever, those in which the hyaline intracellular bodies and the crescents have been found. It is a well-known fact that in these cases quinine is often very slow in its action, and that with the combined administration of quinine and arsenic, organisms may be found in the blood for weeks and months. The one case of common tertian ague yielded almost immediately to the methylene-blue, the organisms disappearing on the third day. In another case the organisms had not entirely disappeared in twenty-three days. This was a severe chronic case. In a third case, which appears to have been one of the more severe varieties, no organism was seen after the ninth or tenth day. In none of the cases was there any chill later than twenty-four hours after the beginning of the administration of methylene-blue. The doses of methylene-blue were not large, and it is hard to know with what dose of quinine to compare them. The author concludes that methylene-blue certainly has, as Ehrlich and Guttmann claim, a distinct anti-malarial action, a fact which is certainly of great interest, and it would be well if more observers in this country were to carefully follow up this question.

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THE MONGOLIAN EYE.

KŌMOTO[1] has studied in detail the differences between the characteristic eye of the Mongolian nations, and of the Caucasian race. The difference between the two is caused neither by the size of the eye-ball, nor the color of the iris, which is the same in both, but in the shape of the eye-lids. The epicanthus, a fold of the skin covering the inner canthus, is rare in adult white persons, but exists physiologically among the Japanese, so that it is sometimes called the Mongolian fold. In the majority of cases this fold runs obliquely inwards and downwards from the upper lid, so that the inner canthus is not round as in white people, but is sharp. When the fold is large it spreads to the inner part of the lower lid, in which case the upper lid does not cross the cornea horizontally, but obliquely, giving the peculiar expression to the eye often met with in Japanese.

Another peculiarity of the upper lid in Mongolians is the lack of development of the orbital furrow, the grove below the eye-brows. The skin covering the upper lid is very loose, so that when the cartilage is raised the skin is thrown into a transverse fold. When this fold is well developed it droops slightly over the margin of the lid. This interferes with the eye-lashes, directing them downwards instead of forwards.

In Japanese the cilia are short and straight. On the lower lid they are sometimes so badly developed and so few in number that they appear at first to be absent. When well developed they are sometimes bent inwards by the peculiar formation of the upper lid, and may seriously irritate the cornea. Except for this there is no great difference in the lower lid of Mongolians and Europeans. The margin is generally more curved in white people, so that there is often a portion of the sclerotic exposed between the lid and the cornea, a peculiarity, the author remarks, which makes "their eyes looking apparently upwards generally." As the skin of the lid is less firmly connected to the subjacent tissues in the Japanese, entropion is more common, but ectropion less common among them than among Europeans.

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[1] Johns Hopkins Hospital Bulletin, vol. iii, no. 19.

[1] Sei-I-Kwai Medical Journal, December 26, 1891.

THERAPEUTIC NOTES.

To Detect Sugar in Urine. — Flint[1] describes a simple apparatus for detecting the presence of sugar in the urine, when the results of Fehling's test are uncertain. A small straight bottle or a small test-tube is fitted with a cork, through which is passed a small tube that reaches nearly to the bottom. The glass tube is bent so that the apparatus will hang over an ordinary test-tube or other convenient vessel. The bottle is completely filled with urine, with which a piece of Fleischmann's yeast, about the size of a pea, has been thoroughly mixed. In putting in the cork it is necessary to be careful to exclude every bubble of air. If the apparatus be kept for a half-hour at a temperature of from 80° to 90° F., a bubble of gas will appear if sugar be present in the smallest quantity. The apparatus may be placed in the sun or near a heater, but the temperature should not be higher than 100°.

Strontium for Tape-worm. — At a recent meeting of the Academie de Médecine M. Laborde said that he found that the salts of strontium had a very destructive action on the eggs or germs of the tænia. He made several experiments on dogs, and he employed the salts in man, obtaining very satisfactory results.

Formula for Wine of Coca:[2]

℞	Coca-leaves	℥ iij.
	Cognac	℥ iss.
	Sherry wine	O iss.
	Hungarian wine	℥ vi. M.

Macerate for several days and add seven grains of citric acid. Allow this mixture to stand for several days, and then filter.

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Correspondence.

INEXPERT EXAMINATIONS FOR ARSENIC.

Boston, February 28, 1892.

Mr. Editor: — I have been much annoyed, and my patients have been needlessly alarmed, in three separate households, by serious errors in the results of examination for arsenic; and in two of these households the wall-papers declared dangerous had been sold as harmless upon the guarantee of accomplished chemists. In a fourth case coming to my knowledge, harmless wall-paper, bought with a similar guarantee, was needlessly removed upon being declared dangerous by an inexpert analysis. One of my patients was very much frightened upon being told to consult a physician at once, as there were said to be albumen and casts in the urine, when I ascertained that there was no evidence of renal disease; and the urine was declared free from arsenic although a subsequent examination by a competent chemist revealed too large a quantity of arsenic to have come from wall-paper alone.

I write this to indicate the importance of having all emical analyses for arsenic and all clinical examinations rine made by persons thoroughly fitted for their work.

espectfully yours, Charles F. Folsom, M.D.

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cal News, January 9th.

aceutische Post, No. 27, 1891.

METEOROLOGICAL RECORD,

For the week ending February 20, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...14	30.00	21	31	10	73	79	76	W.	E.	13	16	C.	R.	T.
M..15	29.99	39	46	31	85	56	71	W.	W.	12	14	C.	C.	.08
T..16	30.50	21	24	17	56	55	56	N.W.	N.W.	13	12	C.	C.	
W.17	30.47	13	20	5	70	50	60	N.W.	W.	17	23	C.	C.	
T..18	35.16	26	41	10	45	40	43	W.	N.W.	19	12	C.	C.	
F..19	30.32	33	40	26	41	72	57	N.W.	E.	6	4	C.	F.	
S..20	30.42	36	39	32	91	96	94	N.E.	N.E.	8	12	C.	C.	T.
☞	30.26		34	19	66	64	65			13	13			.01

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 20, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	908	322	14.30	20.13	4.29	1.43	4.73
Chicago . . .	1,099,850	—	—	—	—	—	—	—
Philadelphia .	1,046,964	—	—	—	—	—	—	—
Brooklyn . .	806,343	399	140	16.50	21.50	7.00	1.00	5.50
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	206	60	7.84	21.07	3.43	.49	1.47
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	130	54	15.38	11 55	.76	2.31	9.12
Cleveland . .	262,000	86	33	13.92	16.24	1.16	1.16	10.44
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	127	49	18.17	14.22	.79	.79	7.87
Milwaukee . .	240,000	95	41	21.00	15.75	2.10	1.05	14.70
Washington .	230,392	118	39	7.65	34.00	.85	—	2.55
Nashville . .	76,168	40	12	10.00	17.50	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	36,425	17	9	5.88	41.16	—	—	5.88
Worcester . .	84,655	25	8	12.00	24.00	4.00	4.00	4.00
Lowell . . .	77,696	55	24	9.10	18.20	1.82	1.82	3.64
Fall River . .	74,398	46	24	4.34	30.38	—	—	—
Cambridge . .	70,028	26	11	—	7.70	—	—	—
Lynn	55,727	27	8	7.40	33.33	—	—	—
Lawrence . .	44,654	—	—	—	—	—	—	—
Springfield . .	44,179	18	5	—	5.55	—	—	—
New Bedford .	40,733	20	11	5.00	15.00	—	5.00	—
Salem	30,801	16	6	6.25	37.50	—	—	6.25
Chelsea . . .	27,909	10	3	20.00	30.00	—	—	10.00
Haverhill . .	27,412	12	2	8.33	—	8.33	—	—
Taunton . . .	25,445	12	2	8.33	8.33	—	—	8.33
Gloucester . .	24,651	6	2	—	33.33	—	—	—
Newton . . .	24,379	—	—	—	—	—	—	—
Malden . . .	23,031	8	3	12.50	12.50	12.50	—	—
Fitchburg . .	22,037	10	3	20.00	30.00	—	—	10.00
Waltham . .	18,707	9	3	—	33.33	—	—	—
Pittsfield . .	17,281	5	1	—	40.00	—	—	—
Quincy . . .	16,723	6	1	16.66	—	16.66	—	—
Northampton .	14,990	3	0	33.33	—	—	—	33.33
Newburyport .	13,947	4	0	25.00	25.00	—	—	25.00
Medford . . .	11,079	2	0	—	—	—	—	—
Hyde Park . .	10,193	—	—	—	—	—	—	—
Peabody . . .	10,158	4	0	—	25.00	—	—	—

Deaths reported 2,450: under five years of age 876; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 324, acute lung diseases 492, consumption 290, diphtheria and croup 125, scarlet fever 85, diarrhœal diseases 26, erysipelas 21, typhoid fever 21, measles 15, whooping-cough 14, cerebro-spinal meningitis 8, small-pox 2, typhus fever 2, malarial fever 1.

From erysipelas New York 10, Brooklyn 3, Nashville 2, Boston, Cleveland, Pittsburgh, Washington, Fall River and Chelsea 1 each. From typhoid fever Pittsburgh 8, Brooklyn 4, New York, Cincinnati and Washington 2 each, Milwaukee, Lowell and Lynn 1 each. From measles New York 13, Brooklyn and Worcester 1 each. From whooping-cough New York 6, Boston and Pittsburgh 2 each, Brooklyn, Milwaukee and Fall River 1 each.

From cerebro-spinal meningitis Brooklyn, Cincinnati and Washington 2 each, Boston and Lynn 1 each. From small-pox New York 2. From typhus fever New York 2. From malarial fever Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending February 6th, the death-rate was 26.2. Deaths reported 5,106: acute diseases of the respiratory organs (London) 761, influenza (London) 314, whooping-cough 240, measles 72, diarrhœa 38, diphtheria 36, scarlet fever 31, fever 23.

The death-rates ranged from 13.8 in Bradford to 39.6 in Norwich; Birmingham 21.7, Cardiff 25.3, Hull 22.7, Leeds 17.1, Liecester 16.2, Liverpool 27.1, London 30.6, Manchester 24.2, Newcastle-on-Tyne 20.6, Nottingham 26.4, Portsmouth 30.6, Sheffield 20.9, Sunderland 20.8.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending February 13th, the death-rate was 23.1. Deaths reported 4,514: acute diseases of the respiratory organs (London) 560, whooping-cough 192, measles 66, diarrhœa 46, scarlet fever 39, diphtheria 34, fever 8, small-pox (Oldham) 1.

The death-rates ranged from 16.6 in Bradford to 32.0 in Nottingham; Birmingham 20.9, Brighton 24.6, Huddersfield 17.3, Leeds 17.9, Leicester 22.9, Liverpool 24.1, London 24.6, Manchester 24.9, Newcastle-on-Tyne 27.1, Sheffield 19.8, Sunderland 20.8, Wolverhampton 23.1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING FEBRUARY 27, 1892.

V. C. B. **Means**, passed assistant surgeon, detached from Naval Hospital, New York, and to Navy Yard, New York.

George A. **Lung**, assistant surgeon, detached from Navy Yard, New York, and to Naval Hospital, New York.

E. H. **Marsteller**, passed assistant surgeon, detached from Marine Rendezvous, Baltimore, and wait orders.

F. J. B. **Cordeiro**, passed assistant surgeon, detached from Marine Rendezvous, Boston, and to the U. S. S. "Adams."

EXAMINATIONS FOR GRADE OF ASSISTANT SURGEON, UNITED STATES MARINE-HOSPITAL SERVICE.

Washington, D. C., February 23, 1892.

A board of officers will be convened in Washington, May 2, 1892, for the purpose of examining applicants for admission to the grade of Assistant Surgeon in the United States Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examinations: (1) Physical, (2) written, (3) oral, (4) clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and the natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates aro required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order, as vacancies occur.

Upon appointment the young officers aro, as a rule, first assigned to duty at one of the large marine-hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons eighteen hundred dollars, and surgeons twenty-five hundred dollars a year. When quarters are not provided, commutation at the rate of thirty, forty, or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information or for invitation to appear before the Board of Examiners, address:

Walter Wyman, *Supervising Surgeon-General, M. H. S.*

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, March 7, 1892, at 8 o'clock, p. m.

Readers: Dr. J. B. Ayer, "The Third Year of the Influenza Epidemic"; Dr. S. H. Ayer, "A Case of Empyema, with Recurrence after Apparent Recovery"; Dr. F. L. Jack, "Operative Treatment for the Relief of Chronic Suppurative Affections of the Middle Ear. Report of Three Cases." Discussion by Drs. J. O. Green, C. J. Blake and others.

Report of Treasurer.

. Report of Committee on Admissions.

Appointment of committee to nominate officers for the ensuing year. John C. Munro, M.D., *Secretary.*

Massachusetts Medical Society, Suffolk District, Section for Obstetrics and Gynecology. — A regular meeting will be held at 19 Boylston Place, on Wednesday, March 9, 1892, at 8 o'clock, p. m.

Dr. Gertrude W. Van Pelt will report a Case of Pyo-salpinx. Dr. W. L. Burrage will read on "The Electrical Treatment of Pelvic Inflammations." Dr. F. L. Burt will present a paper on "Inflammations of the Pelvic Organs."

George Haven, M.D., *Secretary.*
92A Pinckney Street.

Association of American Physicians. Preliminary Announcement. — The next annual meeting will be held on Tuesday, Wednesday and the morning of Thursday, May 24, 25 and 26, 1892, in the Medical Museum and Library, Washington, D. C.

The subject selected for discussion is Dysentery. Dr. William T. Councilman, as Referee, will consider the Etiology and Pathology, and Dr. A. Brayton Ball, as Co-referee, the Symptomatology, Complications and Treatment.

The following members will present papers: Henry M. Lyman, The President's Address; Charles Carey. The Production of Tubular Breathing in Consolidation and Other Conditions of the Lungs; Samuel C. Chew (Title to be announced later); William C. Dabney, A Contribution to the Study of Hepatic Abscess; I N. Danforth, Tube Casts and their Diagnostic Value; George M. Garland, The Treatment of Follicular Tonsillitis; Heneage Gibbes, The Morbid Anatomy of Leprosy; Hobart A. Hare, A Collective Investigation in regard to the Value of Quinine in Malarial Hæmaturia or Malarial Hæmoglobinuria; A. Jacobi (Title to be announced later); W. W. Johnston, Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation; Thomas S Latimer, Alcoholism; Morris J. Lewis, A Study of the Seasonal Relations of Chorea and Rheumatism for a period of fifteen years; Morris Longstreth (Title to be announced later); Francis T. Miles, A Case presenting the Symptoms of Landry's Paralysis, with Recovery; William Pepper, Report of a Case of Glanders, with results of Bacteriological study; T. Mitchell Prudden (Title to be announced later); George M. Sternberg, Practical Results of Bacteriological Researches; Charles G Stockton, Misconceptions and Misnomers Revealed by Modern Gastric Research; William H. Thompson, The Significance of Intermission in Functional Nervous Diseases; Victor C. Vaughan, Certain Toxicogenic Germs found in Drinking-water; B. F. Westbrook, Studies in Hypnotism; James C. Wilson, Pulsating Pleural Effusions; George Wilkins, The Cold Water Treatment of Typhoid Fever.

Henry Hun, *Secretary*, 33 Elk Street, Albany, N. Y.

RECENT DEATHS.

Alexander Lumnitzer, M.D., Professor of Surgery in the University of Buda Pesth, died January 30th, aged seventy. He was knighted in 1866, became professor extraordinary in 1872, president of the Hungarian National Board of Health in 1878 and a member of the upper house of parliament in 1885. He was the author of several works on surgical and sanitary subjects.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Ophthalmological Society, Twenty-seventh Annual Meeting. 1891.

A Manual of Operative Surgery. By Frederick Treves, F.R.C.S., Surgeon to and Lecturer on Anatomy at the London Hospital, etc. Volumes I and II. Philadelphia: Lea Brothers & Co. 1892.

First Lines in Midwifery. A Guide to Attendance in Normal Labor for Medical Students and Midwives. By G. Ernst Herman, M.B., F.R.C P., Obstetric Physician to the London Hospital, etc. Philadelphia: Lea Brothers & Co.

The Human Figure: Its Beauties and Defects. By Er Brücke, Professor of Physiology, University of Vienna. V a Preface by William Anderson. Authorized translatio vised by the author. With 29 illustrations by Herman London: H. Grevel & Co. New York: B. Westerman 1891.

Original Articles.

TWO FATAL CASES OF CEREBRAL DISEASE (ONE OF CONFUSIONAL INSANITY THE OTHER OF DOUBTFUL NATURE) FOLLOWING GRIPPE.

BY MORTON PRINCE, M.D.,
Physician for Nervous Diseases, Boston City Hospital.

The following two cases of cerebral disease caused by the grippe are of interest because they illustrate the profound effect of the poison of the disease upon the central nervous system. One was a case of confusional insanity, the other was of doubtful nature. As a rule, confusional insanity ends favorably, but this case illustrates the possibility of fatal termination. Although the subject had suffered from chronic bronchitis for many years, his physical condition otherwise was good up to the time of his infection with the grippe, and therefore I think his previous physical condition contributed little towards the fatal result, although from reading, merely, an account of the case, it might seem otherwise.

Attention has often been called, and of late particularly by Althaus and Mills,[1] to the affinity of the poison of influenza for the nervous system. Although Althaus, it seems to me, goes too far in relegating the inflammation of the mucous membranes to a place of secondary importance and in considering the disease as an essentially nervous fever, still it does not seem to me that the action of the poison upon the nervous system in cases of the bronchitic type is regarded in practice as having the importance that should be attached to it. Symptoms and physical conditions are ascribed to general weakness and exhaustion, which are in reality due to what might be better called a paresis of the nerve centres. In other words, the so-called exhaustion of grippe is not an exhaustion in the true sense of the word, but is really the expression of a true neurosis which is due to the toxic or paralytic effect of the poison on the nerve centres, just as the paralysis of diphtheria is toxic and not exhaustive. When both pulmonary and abdominal symptoms are absent, the neurosis stands out prominently in the foreground and is plainly recognized; but when these symptoms are present their more strikingly objective character overshadows the neurosis which in consequence is apt to be overlooked or underestimated.[2] A prolonged convalescence with its train of nervous symptoms and even death then come not unfrequently as a surprise. The fatal result, so often unexpected, is fully as much, in my judgment, due to this neurosis as to the bronchitis. The latter, if occurring by itself, would not be sufficient to cause death.

The acceptance of these views must affect the after-treatment and the prognosis.

Case I. The patient, a man sixty-six years of age, and a sufferer for the past thirty-five years with chronic bronchitis, was taken December 19th last with symptoms of an acute exacerbation. As the patient had had several such attacks in the past it was impossible, at first, to say whether or not the acute bronchitis was due to the grippe or was simply an increase of the old trouble. There were no symptoms, in the beginning, to throw light on the etiology. Later, it became evident that his symptoms were caused by grippe. The fever was moderate and lasted about a week or ten days; the highest point reached was 102.5°, although it should be said the temperature might have been modified by the phenacetine, which was given in moderate doses.

The bronchitis was very severe. Very large quantities of muco-purulent sputa were raised in the twenty-four hours; and the patient suffered from intense dyspnœa, which prevented his lying down in bed. It should be said that repeated examinations of his lungs during the past year had shown the existence of marked emphysema, bronchiectasies, and abundant coarse and fine moist râles throughout the lungs. The apices were particularly affected, and the right one in particular gave physical signs of phthisis. Examination of the sputa had failed, however, to show the existence of bacilli, and while the objective signs simulated those of phthisis, the symptoms were all those of bronchitis. With the exception of great dyspnœa on exertion, and cough, particularly in the mornings, when the patient raised considerable quantities of muco-purulent expectoration, he had enjoyed fair health. His physical appearance had always been good and was in no way suggestive of phthisis. Dr. F. C. Shattuck, who saw the case with me in consultation, confirmed this view of the lungs, excepting that he considered there was a fibroid condition also present.

After the first week of the attack of grippe, the bronchitis gradually and steadily improved until, at the end of his illness, it had subsided to its previous condition. The cough was moderate, troubling him but little, and the expectoration was comparatively slight. The sputa were again examined for bacilli, with negative results. The interest of the case centres in the nervous symptoms.

During the first week the patient suffered from marked depression, so marked, indeed, as to almost amount to melancholia. However, as it was known that he always became very much depressed when ill, it did not excite very much attention. During the next week, a stuporous condition developed. The patient frequently fell, if not into a sleep, at least into a somnolent condition while talking, and it was with difficulty that his attention could be held for more than a few minutes at a time. During the third week his mental condition changed again; the stupor disappeared; the melancholia gave place to a condition approaching exaltation. He appeared to be in abnormally good spirits, and to have entirely lost all apprehension on account of his condition. At the same time a peculiar kind of delirium now developed resembling in many respects that of delirium tremens. At first, it was limited to bad dreams; with these the patient was tormented, particularly at night, but also if he fell asleep in the daytime. By degrees the dreams persisted after he was waked up, and he seemed to find it difficult to throw them off. Then they persisted as false ideas and experiences during the waking state. and he became unable to distinguish between his dream life and his real life. By degrees hallucinations and illusions developed during the day; he saw people in his room, and objects outside in the street, which did not exist, and a chain of delirious ideas took complete possession of his mind. He found difficulty at times in expressing himself intelligently. Wrong words were interpolated in his sentences, and the words themselves slovenly pronounced. The mental confusion was marked in regard to his surroundings. He imagined himself in various and impossible situations. He recognized, however, everybody about him and the facts of his illness. In fact, his mental condition was, as has been said, very similar to that of delirium tremens. The marked difference was, that while he was, and had been, during the whole attack tormented by bad dreams, and he required hypnotics every night, sleep was easily induced by moderate doses. Hyoscin, in doses of one one-hundred-and-fiftieth of a grain, gave quiet sleep during the greater part of the night.

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[1] An excellent editorial in a late number of this Journal has emphasized this point.

[2] In the Journal of February 4th last, two cases are reported of the supposed effect of sulphonal in producing a relapse (!) with nervous symptoms. It seems to me these are plainly cases of neurosis due to the grippe, and illustrate the point made in the text.

Examination of the urine showed the kidneys to be free from disease. Eight days before he died Dr. Jelly saw him with me in consultation. At that time there did not seem any reason for apprehending a fatal issue, but during the next few days his mental condition rapidly grew worse.

An interesting point in the case, and one which, to my mind, bears upon the pathology of such cases, was the fact that while his mental condition was progressively growing worse, his physical condition was progressively improving. The bronchitis was subsiding; his dyspnœa was growing less; his appetite improved so that he took large quantities of food, in fact, more than he had been in the habit of taking previous to his illness, and his strength increased to the extent that he was able to sit up in a chair for seven or eight hours a day. His pulse remained strong and full up to the last few days of his illness, and ranged in the neighborhood of 90. When the hallucinations developed he was put back to bed, and he was treated with large doses of cardiac and cerebral stimulants. His mental condition grew steadily worse, and he died January 25th, thirty-nine days after being taken sick. It was only during the last two or three days of his illness that he failed physically, and on the last day he sank rapidly.

CASE II. This case I saw in consultation with Dr. John G. Blake, who has kindly given me his notes in the case.

The patient, a man, forty years old, had always been more or less affected with chronic bronchitis of moderate intensity. He was also of moderately alcoholic habits, depending upon the use of stimulants in rather excessive quantities, although never, perhaps, intoxicated. He was attacked with grippe in January last, and attended by Dr. Blake. He was ill two weeks, the principal symptoms being those of bronchitis. At the end of two weeks the symptoms subsided, and he recovered strength sufficiently to be up and about the house and even to walk a short distance to Dr. Blake's office; he still, however, continued weak.

At the end of about five days severe neuralgic pains developed in the scalp; these appear to have been intense, and the scalp became very sensitive to the touch. For two days, however, he appeared to be otherwise well, and talked rationally. He then became troubled at night with delirium, or dreams, which gradually persisted into the day. There had been no vomiting or convulsions. A delirious condition with hallucinations rapidly developed; and when seen by me, in consultation, on the morning of the fourth day, his condition was as follows:

He was in bed, but his muscular condition seemed to be strong; pulse, strong and full; not rapid, nor abnormally slow. He was in a stuporous condition, although it was evident that his mind was occupied with hallucinations. When disturbed, he played with the pillow and moved about in bed. There was no paralysis of any kind: he protruded his tongue, and answered questions. His condition gave the impression of a meningitis. Insomnia had been marked. The temperature was not taken with the thermometer, but to the touch it did not appear to be raised. Dr. Blake says there never had been any suspicion of fever. Arrangement was made to transfer the patient to the hospital; but later some objection having been made, he did not go. "That evening his delirium," Dr. Blake says, "became even more marked and was of the muttering variety." He talked indistinctly and incoherently. He could not be roused to answer intelligently. The pulse continued full and strong. There was retention of urine and he required to be catheretized. The report of the night-watch was that he continued about the same until about 4 A. M. He then became more restless and began to fail. He died about 7 A. M. Thus it will be seen that the chief and almost only symptom was delirium preceded by neuralgic pain in the head. An autopsy was not allowed.

The diagnosis lay between meningitis and some form of toxic cerebral disease due to the poison of grippe. It was expected that after the patient's transfer to the hospital a more satisfactory study could be made, but his unexpected death prevented this.

REMARKS.

The first of the above cases was plainly one of confusional insanity, a name given by Wood, of Philadelphia, to designate the form of mental disturbance often met with following acute febrile diseases such as acute rheumatism, typhoid fever, grippe and even surgical operations. This form of brain disease has, of late, attracted much attention, both here and in Germany, and several monographs have appeared upon the subject. A number of cases are to be found reported in the medical journals, Osler, for instance, has reported five cases, of which four followed typhoid. Wood, who has most exhaustively discussed it, considers that pathologically it is due to the exhaustion of the nerve centres and not to the toxic effect of the specific poison of such diseases as above mentioned. He believes that its pathology is always the same, whether following a surgical operation, the puerperal condition or acute infectious diseases. These conditions induce a state of exhaustion which in turn brings about one of malnutrition of the brain. It seems to me that this view may be fairly questioned. It is undoubtedly true that mental disturbance may follow physical exhaustion, pure and simple, as, for example, when produced by starvation and exposure after shipwreck. Still, it seems to me that clinical evidence also points to the direct toxic action of the poison itself as the true cause in many, if not all, cases of acute infectious diseases. In the case just quoted, for example, it will be noticed that the first mental disturbance, namely, the melancholia developed during the few days of the disease before exhaustion could properly be said to have occurred: and more than this, instead of the physical condition of the patient deteriorating as the mental disturbance progressively increased, on the contrary, the physical strength steadily improved while the stupor, hallucinations and other mental symptoms steadily grew worse. In fact, while the appetite, strength and the bronchitis were steadily improving, he was mentally failing. Nor was there at any time in the course of the disease evidence of weakened function of the vital organs beyond a temporary gastric disturbance shown by an exceedingly furred tongue, due partly to over-feeding.

Taking these facts into consideration, and taking also into consideration the fact that delirium in grippe may be prominent on the first day without fever, bronchitis or other local symptoms (one example of which I have seen), and that it may also occur early in gonorrhœal rheumatism before any exhaustion has developed (an example of which I have also seen) I am disposed to consider the psychical disturbance as dependent on the direct toxic effect of the poison on the cerebral tissue. An analogous condition, and one beyond question, is the mental disturbance observed in Bright's disease. This distinction is of some practical importance because if the weakness, or rather, as I believe it should be regarded, the paresis, the mental and other symptoms occurring during and following grippe are simply to be regarded as evidences of exhaustion, the treatment is simple and the prognosis will have a more favorable outlook; but if these conditions are in reality toxic in their character, it is evident that the treatment of this nervous condition should be much more watchful and serious and the prognosis more guarded. I am certain that the surprise often expressed at the unexpected fatal termination of many cases of grippe is due to the profound toxic effect of the poison on the nervous system not having been recognized. It is not a mere weakness that we have to do with but a real paralysis of the nervous system. I am inclined to regard the great fatality in aged people as due only in part to the local lung complications, pure and simple, and at least in an equal degree to this nervous poisoning often resulting in paralysis of the heart. It is true that confusional insanity in the great majority of cases has a favorable termination, but the above case illustrates its dangers. I am sorry that the sudden termination of the second case, above described, prevented more careful study of the conditions it presented. I think the diagnosis must remain in doubt, but that it will lay between meningitis and toxic neurosis.

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CASES OF ATROPINE AND OPIUM POISONING IN EARLY LIFE.[1]

BY T. M. ROTCH, M.D.,
Visiting Physician to the Boston City Hospital and the Children's Hospital.

The following cases are reported more for their clinical interest than for making any precise deductions as to the amount of atropia or morphia which may produce death or be recovered from at any especial age in infancy or childhood. In fact, any such deductions must be based on an extremely large number of cases to be of any definite value, for infants and children appear at the same age to vary considerably as to the amount of these drugs which they can absorb and eliminate without physiological or toxic symptoms. A dose of belladonna may be taken without marked effect by an infant, and yet the same dose produce toxic phenomena in an older child; and in like manner we notice the same want of uniformity in the effects produced by opium and its alkaloids. The administration of both belladonna and opium, however, plays so great a rôle in the treatment of diseases of infancy and childhood that cases where any approach to toxic symptoms have occurred when these drugs have been used, should immediately be put on record. In this way we shall, by degrees, learn to know what are the danger-signals and what limits we should hesitate to pass beyond at a given age. These records will also be of use in encouraging us not to despair of saving the patient's life in cases where the amount of the drug taken seems very formidable.

During my term of service at the City Hospital in 1891, a little girl, nine years old, was brought to my wards at 10 P. M. At about 7 P. M. on the same evening, the child stated that she had drunk part of the contents of a bottle containing a solution of atropine, two grains to the ounce. An emetic of mustard and water was given to the child at 9 P. M., before coming to the hospital, and this had produced free vomiting. The child, on entrance to the ward, was partly unconscious; pale; pulse 120, of good strength and regular; respiration regular, quiet and about normal rate; temperature 99°; tongue coated and dry; pupils widely dilated and not reacting. Convulsive movements chiefly confined to the upper extremities occurred at times. The urine was of a normal color, acid, specific gravity 1020, no albumen. The case did not appear to require any treatment by drugs.

On the following morning the child was comfortable with the exception of a slight headache. The pupils were still widely dilated. The urine was passed naturally. Three days later she was well and the pupils were reacting naturally.

The sister of the child just spoken of was brought into the hospital at the same time and with the same history and was placed in the wards of Dr. J. G. Blake. This little girl was four years old. She had been given an emetic two hours after drinking the atropine solution, and one hour before entering the hospital. The face was markedly flushed: the pupil of the left eye was fully dilated and did not react to light. The right pupil, which was the seat of an old iritis, did not dilate; the pulse was 160, regular, rather full and compressible; respirations 28, regular and quiet; temperature 100°. Every few minutes the patient had mild, clonic convulsions, affecting chiefly the muscles of the arms, legs and face. They were of short duration.

As the patient was in the stimulant stage of the poison, with convulsions, she was given two minims of Magendie's solution, subcutaneously. After a short time the patient quieted down and went to sleep. By midnight the respirations had fallen to 22, the pulse to 130 (of good strength), and the patient was quiet. On the following morning the pulse was 92 and the respirations 18; the child was drowsy and fretful and the pupil still dilated. Three days later the child seemed well, and the pupil was gradually contracting.

One-half to one grain of atropia has been considered a fatal dose for an adult so that the amount of atropia in the solution (two grains), presumably swallowed by these two children would appear to be a serious dose to be disposed of. The probability is that they did not get a grain each; but the bottle had only had a few drops taken out of it before they got possession of it, and was found empty after they both said they had drank some of its contents. The usual history, I believe, of belladonna or atropia poisoning is that the patients recover; and it is on this ground that the drug has been formerly used with such freedom (to the extent of tonic symptoms) in France in the treatment of pertussis.

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[1] Read before the Obstetrical Society of Boston, January 9, 1892.

Dr. Blake's patient was treated with the supposed physiological antidote of atropia, morphia; mine had no medicinal treatment, in accordance with certain opinions that morphia is not indicated in these cases.

A little girl, two years old, was brought to the Children's Hospital during my service, in the morning at ten o'clock, by her father, who said that the mother had tried to poison the child in the night by giving it a teaspoonful of laudanum. It had vomited the laudanum, and the same dose was then repeated and possibly some more later.

The child was cold; temperature 97°; pulse slow, about 50–60; respirations 6 to 10 in the minute; pupils tightly contracted, not reacting; child semi-conscious. Atropia ($\frac{1}{240}$ gr.) was given subcutaneously, and the child kept continually moving by relays of nurses, who slapped it and applied electricity. Strong coffee, in teaspoonful doses, was given every hour, and the atropia repeated, with intervals of about three hours, twice. The child gradually grew brighter towards evening; the pupils dilated widely; a rash came out on the chest; and the child in a day or two was entirely well.

In connection with these cases I found of considerable interest, the examination of an infant five months old, whom I was called to see in consultation; the diagnosis had been made of tubercular meningitis.

The history was that of a healthy, breast-fed infant with a healthy mother. For two weeks there had been symptoms of fretfulness, probably caused by the teeth. Had had a cough and cold in its head for two days, and on the second day had been much more restless, and in the afternoon screamed a great deal. A mixture of fifteen drops of laudanum in thirty teaspoonfuls of water was ordered, and during the night it was given teaspoonful doses. During the night the hands and feet were reported to be cold and the baby to be almost unconscious. On the following day when I saw it, it had contracted pupils, cool skin, temperature 98° F. (rectal), fontanelle a little depressed. Pulse 120, regular; respirations quiet, not especially slow. Did not notice, but could be roused, and would then cry vigorously and as though it were fretful at being disturbed.

The attending physician had already told the family that it was a case of tubercular meningitis, and had ordered the laudanum to keep it quiet; it was supposed to have taken eight teaspoonfuls (four drops of laudanum). I advised atropia ($\frac{1}{200}$ gr.), which was given at once by the mouth. Four hours later the pupils were reported to be somewhat less contracted, but reacting very sluggishly; an hour later another dose of atropia ($\frac{1}{200}$ gr.) was given, and the pupils then dilated, the infant grew brighter and recovered, with an efflorescence (probably from the atropia) on the chest and face for a few hours.

A little girl, seven years old, was given what was supposed to be thirty-five drops of paregoric at 3 A. M. At 6 A. M. it was noticed that she breathed heavily, and at 7 A. M. she could not be aroused. I saw her at 8 A. M., when, although very sleepy, she could be aroused. The pupils were contracted and did not react; the pulse was rather slow; the respirations natural. She was made to vomit freely, and belladonna was then given in the form of tablets (ten minims). No result was obtained from the belladonna; and during my temporary absence Dr. S. E. Wyman took charge of the patient, and gave her atropia ($\frac{1}{240}$ gr.) subcutaneously, at 10.45 A. M. The pupils then dilated, and she made a rapid recovery.

An analysis made by Prof. William B. Hills showed that, instead of the supposed paregoric, the thirty-five drops contained fourteen one-hundredths of a grain of morphia.

In my service at the Infant Hospital, I meet every year with young infants who have been drugged with small doses of opium, presumably paregoric. The drug when first given them in their homes has quieted them; but larger doses becoming necessary to keep them from crying, the parents become alarmed, as they can only be quieted by the drug, and they are sent to the hospital for treatment. Their advent destroys the peace of the wards for usually four or five days. They cry loudly and continuously, and only shut their mouths to swallow their food. They are usually considerably atrophied, and show gastro-intestinal disturbance; but they evidently are not in pain, and are crying for what they crave for, paregoric. This, if offered to them, they will take with far greater avidity than their food, but it only excites them to still greater clamor. The treatment is to absolutely withhold the drug from them, and after a number of days they apparently forget all about it, and soon begin to eat, grow and behave like other babies.

I mention this class of cases to possibly aid the physician in detecting them, where in private practice the nurse may be offsetting the good effects of a carefully prepared food, by giving a few drops of paregoric at night to insure the sound slumber of her charge.

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ASTIGMATISM AS AN ELEMENT OF REFRACTION, AND ITS OBJECTIVE STUDY BY THE OPHTHALMOMETER OF JAVAL AND SCHIOTZ (MODEL OF 1889).

BY EDWARD SWASEY, M.D., OF WORCESTER, MASS.

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THE student of the current ophthalmic literature of the present day will not be obliged to read very far on the subject of refraction and its errors to observe how prominent a place is being given to astigmatism as an element of these errors. Although the subject is an old one, and it is now a hundred years since Thomas Young first made a study of the subject in his own person, and it was christened with its present name by Whewell, in 1846, nevertheless, the last word is not yet spoken on astigmatism. Some of our most experienced ophthalmologists of to-day are studying the subject with more care than was formerly bestowed upon it, carefully noticing small fractions of a dioptre of astigmatism, and the axis of the meridian, and prescribing weak cylinders, where, a few years ago, these were not looked for, or, if found, were ignored. But it is just the correction of these apparent trifles, in many cases, that is giving our patients a great deal of relief, and ourselves a good measure of satisfaction. Probably if the whole truth could be known of the past and present failures, or only half-satisfactory results, in prescribing glasses for the relief of the various forms of asthenopia, this one element of astigmatism has been, and still is, the one sly fox that is most difficult to run to ground. He it is who most persistently eludes our grasp, plays fast and loose with our best-laid schemes, and leads us into many a provoking decoy. Or, as Fox and Gould ("Diseases of the Eye") state it: "Astigmatism is an invisible and elusive imp of mischief, requiring much keenness and patience to hunt him down. His hiding-place is the ciliary muscle; his disguise, amblyopia."

Is it to be inferred, then, that because we are hearing and reading more of this trouble of late years that it is on the increase? Formerly hypermetropia, pure and simple, and uncomplicated myopia, were believed by many ophthalmologists, not all, however, to stand in the fore-front of the troublesome enemy, and many and many are the cases reported where no mention is made, or record given, of astigmatism, but simple spherical glasses were given, and most gratifying results soon followed, or were reported to have followed — proving again that we can find almost anything we are looking for, if we have a belief that we wish to establish. Just now the muscles external to the globe, and astigmatism are standing forth to be counted, and as rivals for first place. The muscles are making the most noise, to be sure, but it is the astigmatism that is doing the most mischief.

Probably, we cannot say that astigmatism is increasing, but perhaps our knowledge of it is improving. It undoubtedly can be said with truth that a nervous irritability, a neurasthenia, of the Americans is being more and more noticeable in the last ten years. And since la grippe has worked its peculiar work over nearly the whole of our country, there are many thousands who are finding themselves reduced in vital force, and unable to withstand many little ills and pains that before they took no note of. How often do we hear at the bedside, in our offices, and on all sides, the expression, "Since I was ill with la grippe!" And since that time some trifling pain or distress has become "a thorn in the flesh."

Dr. J. J. Chisolm, of Baltimore, in a paper read at Washington, in May, 1891, advocating the use of low grades of cylinders, formulates this axiom: "Headache under eye use, with acute vision, in by far the majority of cases, means astigmatism, and usually of a low degree. . . . I often wonder what has become of the hosts of hypermetopic eyes that I formerly saw and treated with spherical convex lenses. . . . The same class still come to me from other specialists, who are holding the views that I formerly acted upon before I found out my mistake."

Dr. W. F. Mittendorf, of New York, in a paper in the *Medical Record*, July 18, 1891, gives his testimony in favor of giving cylinders of as low power as one-half or one-quarter of a dioptre in many cases of asthenopic headache.

Dr. L. S. Dixon, of Boston, has "long been an intense believer in the benefits resulting from the correction of very small errors of refraction, particularly of astigmatism."[1]

But I presume no one would advocate such careful and exact correction of uncomplicated hypermetrophia or of simple myopia as is indicated by these quotations regarding astigmatism, showing that the tendency is to promote this latter fault to a more and more important place. Moreover, it is being studied objectively in the last few years, and this has always been a more exact and trustworthy method in the science of medicine than the subjective method. For example, compare our knowledge of diseases of the heart and lungs since auscultation and percussion became a branch of our science with the period when subjective symptoms and examinations were relied upon. Consider the fine shades of distinction the neurologist can now make in his differential diagnosis by his objective study of his cases, rather than by a subjective examination. Likewise, how much now can be learned in renal diseases of our patients' condition, though no questions be asked! So, in some measure, at least, the modern methods of objective study in ophthalmology is advancing this branch of medical science. Noyes says: "The more we can rely on objective methods the better." The objective methods most in use are, of course, the ophthalmoscope and the ophthalmometer. Some ophthalmoscopists claim they can detect an astigmatism as low as 0.25 dioptre, and locate its axis. Whether they can do this or not it is fully acknowledged by our best authorities that it is almost impossible of accomplishment, and it is not claimed by the vast majority of examiners. We must look through the lens, and unless full mydriasis exist, it is difficult to exclude accommodative effort on the part of our patient, to the exactness of fractions of a dioptre. The other method is by the ophthalmometer, and it is this instrument that shall most interest us in this paper.

It may be well to review some of the chief features, and study some recent statistics of astigmatism at this juncture. Very few, indeed, are the corneæ that are perfectly symmetrical and of equal curvature in all their meridians, and it is a well-recognized rule that there is a "normal astigmatism" of from one-quarter to one-half of a dioptre. The two meridians of the cornea which differ from each other in their curvature, and likewise in their refractive powers, are called the *principal meridians*. They are the vertical and the horizontal, or nearly in these planes, and stand at right angles to each other, and are the meridians of greatest and least refraction.

The vertical has a shorter radius of curvature than the horizontal, and a ray of light passing through it comes to a focus at a point anterior to the focal distance of a ray passing through the horizontal, which is the meridian of lowest refraction. Or, in other words, the focal distance of the vertical meridian bears a similar relation to the retina as does the hypermetropia eye — it is too short: while the horizontal bears the relation to the retina of the myopic eye — it is too long. This is the law, but to it there are exceptions. The axis may vary from the vertical to either side to the amount of 40°, and likewise from the horizontal. But the law holds good even then, that the meridians of unequal refraction will stand at right angles to each other. We have astigmatism "with the rule," when, in the hypermetropic the correcting plus cylinder stands at 90° or vertical; and in myopic astigmatism the minus cylinder is at 180°, or horizontal.

But where, in a case of hypermetropia astigmatism, a plus cylinder can be used only at 180°, or in a case of myopic astigmatism a minus cylinder can be used only at 90°, and in either example we have "astigmatism against the rule."

Mettendorf, in the paper referred to, examined one thousand cases of refraction. Of these, there were 111 cases of simple myopic astigmatism, and 626 cases of simple hypermetropic astigmatism. Of all kinds of astigmatism the amount reached as high as 83 per cent.; 119 of myopic, and nearly 700 of hypermetropic, astigmatism. In the hypermetropic cases the astigmatism was with the rule 418 times; against the rule, 33 times. In the myopic cases it was with the rule in 80 cases, against the rule in 21 cases.

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[1] New York Medical Journal, March 28, 1891, page 353.

In 1888 Dr. Swan M. Burnett, of Washington, examined by Javal's ophthalmometer 576 healthy corneæ. Of these the horizontal meridian was of lowest refraction (astigmatism with the rule) 420 times; the vertical was of lowest refraction (astigmatism against the rule) 20 times.

In 1886 Dr. Kelch, of Louisville, Ky., published examinations on 512 cases of astigmatism, taken from the records of Dr. Dudley S. Reynolds, of Louisville. In the right eye 448 cases, in the left eye 452 cases. In the former cases the astigmatism was with the rule 377 times, in the latter cases it was with the rule 374 times.

Referring again to Burnett's interesting statistics, we find in his 576 cases there were but 55 cases of simple myopia, while of myopic astigmatism there were 140 cases. Simple hypermetropia was present in 59 eyes; hypermetropic astigmatism in 96 eyes. In 55 eyes there was compound hypermetropic astigmatism, and in 36 eyes compound myopic astigmatism; in eight mixed astigmatism. In Mittendorf's cases there were 111 cases of simple myopic astigmatism; 626 cases of simple hypermetropic astigmatism, and of mixed, 21 cases. The law regarding the axes of the principal meridians holds good, also, in cases of compound hyperopic, and compound myopic, astigmatism. But the cornea alone is not the only seat of this refractive error, for the lens participates in some small degree in a certain per cent. of cases, and the combined corneal and lenticular trouble gives us the "total astigmatism."

Javal says that corneal astigmatism almost always represents the total astigmatism. In but four eyes of Burnett's 140 cases of myopic astigmatism, was the total astigmatism greater than the corneal; in 11 it was less. In his 96 cases of hypermetropic astigmatism the corneal was greater than the total in four cases; in two it was less. The corneal astigmatism was against the rule in 18 cases, while the total was against the rule in 42 cases. The lenticular astigmatism is due to some oblique position of the lens, or some lack of symmetry in its outline, and also through an effort of accommodation which is more or less constantly going on in the ciliary muscle and lens to make amends for this trouble at the very threshold — the corneal astigmatism. And again, nature has tried to adjust the internal arrangement to correct the corneal trouble, for the meridian of greatest lenticular refraction is more often horizontal than vertical; whereas, as we have seen, the opposite condition prevails in the corneal astigmatism.

It is well known that the accommodation is much more active and important in hypermetropia than in myopia, so it is in hypermetropic astigmatism over the myopic. Hence it is in young subjects, while yet the lens is plastic and the accommodation active, that quite a degree of astigmatism can be, and often is, covered up. But let debilitating sickness come and the accommodative power, like all muscular force, be depressed, and at once this hidden fault of the cornea is revealed. Likewise as middle life approaches, the hardening of the lens, incident to this period, curtails the accommodation power, and again a small amount of astigmatism, unknown before, begins to be troublesome. And yet all through life it is the lower grades of astigmatism that keep up the more persistent effort of the ciliary muscle, and maintain the conflict between the powers that be and the powers that would be. In the higher grades the retina has always been accustomed to the blurred outlines and distorted figures, and accepts them with but little rebellion. The lower grades, also, are not incompatible with good distant vision, before the middle period of life approaches, but accommodation must be used to accomplish this. Javal himself had astigmatism equal to 2.5 dioptres, but at the age of twenty-four could see the stars distinctly. Dr. Chisolm, in the article referred to, says: "I find vision $\frac{20}{20}$ in one-third of my astigmatic cases, and this good vision among my most suffering patients. The most marked relief, and the most brilliant results from the adjustment of cylinder glasses, I obtain among this class." We have all, I presume, seen very many cases, that would not accept a cylinder, even of low grade, kindly, or be improved by it for distant vision, yet in reading and in near work received a great deal of relief with this same cylinder.

And it is in just such cases that the objective methods, and especially by the ophthalmometer, are shown to be superior to any subjective examination. The ophthalmometer of Javal and Schiötz (model of 1889) leaves little to be desired in the instrument. So accurate and rapid is it in its operation that many a time in a good light have I measured the astigmatism in dioptres, and located its axis in both eyes in two minutes by the watch. Dr. H. B. Noyes, of New York, says of it: "During the past four years I have constantly made use of it in my private practice and can commend it very greatly. . . . For rapid work, and especially in public institutions, this instrument is invaluable. For the young, the confused, the dull, the amblyopic, it is most excellent." Burnett, of Washington, considers it one of, if not the, most important instrumental means for the diagnosis of astigmatism.

Dr. D. B. St. John Roosa, of New York, says of it: "All the previous methods of determining the existence, degree and axis of astigmatism, after twenty-five years of experience, I consider much inferior to this."

This instrument will certainly detect any corneal astigmatism that may exist; if we fail to rightly interpret it or its angle, and give relief, these are not the faults of the instrument. From my experience with it for the past two years, in public and private practice, I believe it to be a very reliable and accurate indicator of corneal astigmatism, both of the amount and of the axis. I am more and more inclined to follow its readings closely, more closely, perhaps, than the accepted rules call for. The rule given by Dr. Bull, of Paris, is: Give the patient, in astigmatism with the rule, 0.5 dioptre less than the instrument indicates; and in astigmatism against the rule, add 0.75 dioptre to the findings. Dr. Burnett in his latest article[2] on this subject thinks Dr. Bull's allowance of three-fourths of a dioptre too high for the majority of cases. In this same article Dr. Burnett speaks in the highest praise of the ophthalmometer and has nothing to retract from his former praise of it. In an article[3] by Dr. Carl Koller (the discoverer of cocaine anæsthesia) on this same topic, the highest praise is bestowed on this instrument in the study and treatment of astigmatism. This observer believes that astigmatism produced by tilting of the lens to an oblique position, and producing a constant, static factor, "is comparatively a very rare thing." But that dynamic astigmatism, produced by irregular contraction of the ciliary muscle, is most always the variety present. This tilting of the lens was assumed by Tschering. Bull also believes it is the explanation in many cases. In the opinion of Dr. Burnett it "is much commoner than is generally allowed, particularly as a corrective of the normal astigmatism of the corneæ." It is a subject on which a difference of opinion exists, and it must be studied carefully to determine the question first objectively, afterwards subjectively and under full mydriasis.

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[2] Journal of American Medical Association, September 5, 1891, page 354.

Ibid, September 13, 1890, page 380.

But we have seen by the foregoing statistics, and by Javal's statement, how nearly the corneal astigmatism represents the total. If then we have an instrument that accurately measures the former, why may we not expect relief from the whole trouble after a short interval of use in which the accommodation is quieted and relieved? It is believed that the tilting of the lens does not occur in a large per cent. of cases, while accommodative effort does exist very largely. And for this reason, I say, I am inclined to depart from these rules, somewhat, especially in the lower grades of astigmatism, and when I am trying to give relief to asthenopic symptoms *on near work.* For example: A book-keeper, aged thirty, vision each eye $\frac{20}{20}$, H. M. each eye 0.25. Javal showed in right eye 0.50 dioptre, axis 90°; left eye hardly 0.50 dioptre, axis 90°. Ophthalmoscope showed about one dioptre of hypermetropia. Glasses were given as follows: right eye, + 0.25 S. ○ + 0.50 cylinder, axis 90°; for left eye + 0.50 S. ○ 0.25 cylinder, axis 90°. He reported ten days later, having used these constantly for writing and reading, the greatest relief at his work. The blepharitis of some months' duration had almost wholly disappeared. He was now reading with comfort in the evening, a pleasure he had been obliged to forego for months; and, as he expressed it, he supposed he must continue to look from his books at short intervals to give his eyes relief, as he had been doing for a long time. But no such inclination existed now and he could continue at his work uninterrupted. It may be said this man would have received equally good results had I given him a + 1 D. spherical. Possibly; but it may be said, also, he would have been made comfortable had I given only the cylinders. But certainly with the combination he was made happy, which is quite enough for him and for me to know.

Or, another example: A patient, age twenty-nine, vision = right eye $\frac{20}{15}$, H. M. 0.25; left eye $\frac{20}{20}$, no H. M. Javal showed no astigmatism in right eye, and 0.50 D. in left, axis 120°. I remarked that I found a trifle more error in the left than in the right eye. He said it was always the left eye that first became painful and gave him the most trouble in his near work. It will be noticed the angle is at 120°; but he would accept even this weak cylinder at no other angle. But in patients who have astigmatism against the rule more asthenopia is caused by low grades than in the higher grades that are with the rule. This patient received great relief in reading and all close work by the use of these glasses, which were as follows: right eye, + 0.50 S.; left eye, + 0.25 S. ○ + 0.25 cylinder, axis 120°.

Again, in a book-keeper, aged thirty, the vision was right eye $\frac{20}{15}$ H. M., .75 D.; left eye the same; glasses over both eyes, H. M. was 1.25 D. Javal showed 0.50 D. in each eye, axis 90°. This patient had been troubled with headaches in back of head and neck for months, and had been for some weeks under treatment for dyspepsia, believing the headaches came from this. No relief came from this treatment. He was given glasses for near work as follows: right eye, + .75 D. ○ + .50 cylinder, axis 90°; left eye, same. After having used the glasses ten days at his near work he reported that from the first the headaches left him completely, and he had been entirely free from them since. There was no blepharitis in this case.

A girl, age ten, had a well-marked convergent strabismus of right eye. This patient had 4. dioptres of astigmatism in right eye, axis 90°, and 3.50 dioptres in left. She has worn glasses for four or five years, given by one of Boston's most careful ophthalmologists. And yet these were simple spherical lenses of four dioptres, and the parents had never heard of astigmatism. The ophthalmoscope showed four dioptres of hypermetropia. She has worn glasses of + 2. D. ○ + 3.75 cylinder, axis 90°, on right eye, and on left + 2. D. ○ 3.25 cylinder, axis 90°, for three weeks with great relief to headaches from which she suffered. Surely, with the ophthalmometer no one would fail to detect this high degree of astigmatism. It is rather remarkable that in four children in one family, a boy aged twelve, another aged fifteen, a girl aged eighteen, and sister aged twenty-four, all being myopic, that all should have astigmatism against the rule, as indicated by Javal, and subjectively they would accept a plus cylinder only at 180°, or a minus at 90°.

I have given these few examples as members of a class in whom, I think, we may follow the instrument more closely than Dr. Bull's rules indicate; and also to show how the ophthalmometer starts us on the right course in our examinations. Moreover, some competent observers believe more serious mischief than asthenopia may, and sometimes does, follow uncorrected astigmatism. The observations of Schœn show that strain of accommodation in astigmatism may be productive of glaucoma and cataract. Dr. Samuel Theobald, of Baltimore, found that where the meridian of least refraction was vertical (astigmatism against the rule), this variety of astigmatism was in almost every instance associated with glaucoma. He believes that the slightest degree of astigmatism of this character almost always gives rise to trouble, and if it amounts to not more than 0.25 D. requires to be corrected. Hyperæmia of the ciliary body is particularly active in this form of astigmatism. This causes an increased flow of fluid into the vitreous, and let the drainage of the anterior chamber be a little at fault, and we have all the required conditions for glaucoma. Dr. Roosa tells us that Professor Panas, of Paris, believes that astigmatism is usually the exciting cause of strabismus, and I know personally that Dr. Roosa himself shares in this belief.

If, then, all corneæ be irregular, must all eyes have cylinders before them? By no means; but in eyes with good distant vision, and which are obliged to do close work, and in which blepharitis and congestion exist, and perhaps also more pronounced asthenopia, if astigmatism is found even in small degree, I believe in fully correcting it in the glasses we give for close work.

Some of the advantages pertaining to the use of Javal's instrument have already been spoken of, but the chief advantage of all is that it does away with the use of atropine, or any other mydriatic, in the vast majority of cases. I know this statement will not be, and is not, accepted by many ophthalmologists. But those who have used the instrument the longest time and most carefully are the ones best qualified to pass an opinion. Certainly, if it be true that atropine need be used only infrequently rather than commonly "it is a consummation devoutly to be wished." This is the one feature of examination for refraction that patients demur at, both from loss of time and the great annoyance it occasions. The cornea is the seat of astigmatism, but the cornea is not symmetrical in its various meridians, and a difference in curvature exists, also, between the central and the peripheral portions, being more sharply curved in the central than in the peripheral portion. Is it rational then to try to hunt down any small error like this by bringing a much larger area of the cornea into the field of vision than is ever found there in a normal, healthy pupil? But mydriasis does this unavoidably.

Some of our best observers speak of using a mydriatic in testing for astigmatism as follows:

Landolt says: "We very seldom have recourse to atropinization for the determination of astigmatism."

Dr. John Green says: "It has been the practice of the writer to abstain from the use of atropine in measurement of astigmatism, except in a few cases of special difficulty, and never to adopt a measurement made under full mydriasis until it has been verified or corrected by other tests, made after the pupil has returned to its normal size."

Dr. Mittendorf says: "In the lesser degrees of astigmatism atropine should never be used, as the results obtained are often misleading, and I have often found that not only the strength but even the axis of the cylinder, determined under atropine, will not be accepted by the patient after the effects of the mydriatic have disappeared."

Dr. Roosa, in speaking on this same subject in connection with Javal's ophthalmometer, says: "A release from the use of atropine and so forth is afforded by the use of Javal's ophthalmometer. In the hands of those who have carefully practised its use, it simplifies the problem of the determination of astigmatism very much. . . . To use the ophthalmometer with exactness, however, one must spend a little time in practising with it. It is not necessary to paralyze the accommodation, except in very rare cases of spasm, and then for therapeutic purposes, if we can once exactly determine the degree of astigmatism. This is the key to the problem in the diagnosis of the causes of asthenopia; with that solved we can soon determine by the ophthalmoscope on the test letters, without the use of any mydriatic, even once, whether to advise a convex or a concave cylinder, and whether or not an additional spherical will be needed. . . . I do not now use atropine for the determination of the degrees or kind of error of refraction once, where I formally used it thirty times."

Dr. Noyes, on the same subject, says: "The whole problem may often be solved at a single sitting and without atropine."

But ought we not to use atropine in young subjects? I would instance the following case:

A school girl, aged sixteen, had constant headache, and working over her books was impossible without great suffering. She had vision: right eye $\frac{20}{30}$ +; $\frac{20}{20}$ W. + 1.75 D. spherical; left eye $\frac{20}{30}$; $\frac{20}{20}$ W. + 1.75 D. spherical. Javal showed astigmatism in right eye of 0.50 dioptre, axis 90°; in left eye 3. dioptres, axis 90°. Ophthalmoscope showed 4. dioptres of hypermetropia in each eye. No atropine or other mydriatic was given, but glasses were prescribed at once as follows: right eye + 4. dioptres spherical; left eye + 1.75 D. S. ○ + 2.25 D. cylinder, axis 90°, to be worn constantly. She reported four weeks later at the Manhattan Eye and Ear Hospital. She had worn her glasses constantly and had returned to her studies; the headaches had entirely left her from the first, and she was enjoying her life, her books and her glasses.

If a case of this complexity and amount of refractive error in a school girl of sixteen could be relieved and made happy, without the use of any mydriatic, why may not any case?

Or, take an older subject: A lady, age forty-seven, vision: right eye $\frac{20}{50}$; left eye $\frac{20}{40}$. Javal showed 3. dioptres in each eye, axis 90°; the ophthalmoscope showed in each eye about 1.50 D. of hypermetropia. The glasses given were these: right eye + 1.50 D. S. ○ + 2.50 D. cylinder, axis 90°; left eye + 1.25 D. S. ○ + 2.50 D. cylinder, axis 90°. This lady had for years been trying to find glasses that would give her comfort in reading and sewing, and she had been examined by very good men. But the ophthalmometer revealed the whole story in less than five minutes. She assured me at the outset that she was myopic and had been for years. She uses these glasses with really the utmost pleasure, and has lately secured a duplicate of the prescription. She says it is the first time she has seen the eye of a needle, but she sees it now and wonders at its size.

I cite these few cases to show what may be done in the higher and the lower grades of refractive error and astigmatism by the employment of the modern and perfected methods of objective examination, and without the use of atropine, for in none of these cases was a mydriatic used. It is very rare indeed that I use it, but I do rely upon my ophthalmometer for the amount and axis of the astigmatism, and in a room painted dead black in all parts, with a tin tube over my gas chimney with a small opening in it through which I receive light for my ophthalmoscope mirror, I can learn the remainder of the refraction (for in such blackness the accommodation will, in a great measure, soon relax), certainly to an approximation as near as we wish to correct it.

If these principles, so hastily reviewed in this paper, are correct principles, and this method of practice has sufficient merit to be classed in such good company, it certainly saves our patients a vast deal of annoyance, and no little loss of time, and time is sometimes money. If the method is wrong I have yet to learn why it is so, or to see cause to regret the results obtained.

IT is reported that an imperial irade has been issued forbidding the use of cocaine and sulphonal throughout the Turkish empire.

Clinical Department.

THE CONTAGIOUSNESS OF ERYSIPELAS.

BY WALTER REED,
Assistant Surgeon U. S. A., Fort Snelling, Minn.

In the Journal of February 4, 1892, Prof. J. C. White, of Harvard, writing concerning "Some Dangers of Infection Incidental to Professional Life," says: "With regard to the contagious character of erysipelas diverse opinions prevail." Again: "Common belief has it that there is great danger of such communication, an opinion largely held apparently by our profession as well. I do not doubt the possibility of such transference, but I believe that it rarely occurs; I refer to the ordinary superficial forms of the affection. In the great number of cases that I have treated I have not known a single instance in which a second member of the family, a nurse, or medical attendant has become affected."

As I have had an experience bearing directly upon the point at issue, I beg to submit it. During the fall of 1883, Lieutenant B. was attacked with facial erysipelas of a moderately severe type, the disease commencing over the bridge of the nose and spreading rapidly over the face and scalp. He was carefully nursed by Private A., who remained the greater part of the time in the room with him, and who slept in an adjoining room.

About the time Lieutenant B. was convalescent — some twenty days from the beginning of the attack — Private A. became engaged in an altercation and received a contused wound over the left orbit. This wound was dressed by the writer, the day following its receipt. The next day erysipelas appeared in the edges of the wound, rapidly extending to scalp and lower face. Now, I will admit that it would be perfectly fair to conclude that Private A. had probably infected his wound with the *streptococcus pyogenes*, which had remained on his fingers since his attendance on Lieutenant B., or that the writer had infected the wound; for we had both repeatedly applied cloths to the erysipelatous surface of the first patient.

However, be this as it may, Private A. was placed in a room by himself at the post hospital, and Hospital Attendant K. detailed to nurse him. Although this man did not sleep in the room, he virtually occupied it the greater part of the time, as the patient was troublesome and required almost constant attention.

Three weeks later, while A. was convalescing, Hospital Attendant K. was attacked with facial erysipelas and was put to bed in the same room with the second case, and Private S. detailed to nurse him.

Before Attendant K. had recovered fairly, Private S. was stricken down with the same disease and was placed in a separate room. He was nursed by Acting Hospital Steward G., who volunteered his services for this purpose. He was told that he need not remain in the room any more than was absolutely necessary to look after the wants of the patient, but as the steward had no fear of the disease, he was constantly in attendance, and spent a part of each night with the sick man.

When the foregoing cases had recovered, the two rooms were thoroughly disinfected, walls and floors being wiped down with bichloride solution, and afterwards exposed to fumes of burning sulphur.

Three weeks from the commencement of Private S.'s case, which had not been severe, Acting Steward G. was attacked with facial erysipelas of a very severe type, and came near dying.

As there seemed to be no end to this succession of cases transmitted from patient to attendant, I requested the detail of four men to nurse this latter case; each man to be on duty six hours, and during this time to remain in the room as little as possible; free ventilation of the room to be enforced, and while off duty to remain in the open air as much as possible. Under this system of nursing, our little epidemic ended.

There had been no cases of erysipelas at the station prior to Lieutenant B.'s case, and none occurred during the following seven months of my stay at the post. I believe that the second patient would have had the disease, even had he not suffered any traumatism. I think that this conclusion is perfectly justifiable in the light of the occurrence of the subsequent cases, without any break in the integument. I know not how the *streptococcus pyogenes* gained access to the circulation of those patients. Each case began with soreness and congestion of the pharynx with some swelling of the lymphatics of the neck. This was slight and soon subsided. There was no formation of abscesses beneath the skin, except in the last case, in the loose tissue around the left orbit. All were young men in the prime of life.

Looking at the matter from my standpoint, I should say that there is good cause for the common belief that erysipelas can be communicated from patient to attendant.

TWO OVARIOTOMIES.

REPORTED BY BENJAMIN D. GIFFORD, A.M., M.D., CHATHAM, MASS.

Two cases of ovarian cysts which came under my observation during the second week in December, 1891, for the removal of which laparotomies were performed, illustrate in a remarkable manner the value of this operation, not only when undertaken for the deliberate cure of the affection, but also as a means of saving life when the conditions appear unfavorable and the patient evidently about to die.

The first case, that of Mrs. H., age thirty-six, childless, was one in which peritonitis was present and threatened life. She had been to Boston and had undergone a somewhat rough handling in the repeated examinations which she had received in a public clinic, and after a ride of nearly one hundred miles home was taken with a chill, which developed a peritonitis. This was of an active type, generally diffused and sufficiently severe to call for the gravest apprehensions for her recovery. Under the circumstances I advised an operation as the means best calculated to give her a chance for life. Accordingly I telegraphed for Dr. Henry O. Marcy, of Boston, who came down and operated. The tumor, which weighed sixteen or eighteen pounds, was located on the left side and was everywhere adherent, both to the abdominal walls and to portions of the intestines by recent lymph. The most noticeable thing about it was the fact that the tumor had been completely twisted upon its pedicle, and the entire growth external to the constricted neck of the cyst was gangrenous. The pedicle was sewed across with kangaroo tendon, and a sufficient amount of peritoneum was dissected from it to be intra-folded over the stump, and was secured by a continued Lembert tendon suture. The peritoneal cavity was closed with a continuous suture of fine tendon, and the abdominal wound joined by a series of stitches which brought its margins into close relation from bottom to surface; the skin closed by a blind suture and iodoform collodion applied. This patient made a most excellent recovery, without a single untoward symptom.

The second case, that of Mrs. A., age fifty-six, had, up to the time of the operation upon the preceding case, been under the care of an advertising doctor in Boston who was undertaking the rather unique method of removing the tumor by emetics and purgatives. This treatment had rapidly exhausted her strength and she was fast travelling toward the grave. Encouraged by the brilliant success of the operation for the relief of her friend and neighbor, Mrs. H., she besought me to take her under my care and make such arrangement for her treatment as was deemed best. Upon visiting her I found her sitting propped up with pillows, short of breath, and the picture of distress. Her abdomen was immensely enlarged and her limbs enormously distended; pulse small and quick. Death would evidently soon come, unless relieved. I again invited Dr. Marcy to come to my aid. Upon opening the abdomen the cavity was found full of fluid, due to a large rent in the ovarian cyst. Adhesions were everywhere present and considerable hæmorrhage resulted from their detachment. The pedicle was cut off as usual, overcovered with peritoneum, and sewed across with continuous kangaroo tendon. Hot water was freely poured into the abdominal cavity for the arrest of the hæmorrhage. The peritoneum and abdominal walls were closed as in the preceding case with buried animal sutures. The lips of the wound were sealed with iodoform collodion and a bandage applied. As in the preceding case the patient's condition and comfort were immediately improved. From a condition of impending death she was placed in one of safety and mental tranquility. The tumor removed from this patient, fluid and solid, weighed over forty pounds.

At the present writing, six weeks after operation, both these patients are doing well.

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Medical Progress.

NOTES OF PROGRESS IN PHYSIOLOGY.

BY JOSEPH W. WARREN, M.D.

(Concluded from No. 7, page 170.)

THE influence of various different alcohols on the heart was examined some time ago by Dr. Hemmeter.[9] Blood containing small amounts of the alcohol under investigation (usually 0.2%) was sent through the heart, and the action on the work done by that organ was noted. The work done is measured as the quantity of blood pumped round in any given time, let us say thirty seconds. The heart is isolated by Martin's method, which was sufficiently described in a former report, and these experiments were done under Martin's supervision. As the animals (dogs) were approximately of the same size, the *quantities* of blood pumped round in a given time and the change in these under the action of the alcohols would seem to be fairly comparable. The conclusions reached are summarized as follows: (1) The physiological activity of the group (CH_4O to $C_5H_{12}O$) increases with the complexity of the molecule, with exception of the second member, namely, ethyl alcohol, which is weaker than methyl alcohol. (2) The physiological activity increases as the temperature increases.

The effect of the alcohols is also tabulated by the author according to the *average lessening* of the amount of blood pumped out during thirty seconds as follows:

1.	Methol alcohol	($CH_3.OH$)	. .	19.46	c. cm. decrease.
2.	Ethyl "	($C_2H_5.OH$)	. .	17.45	" "
3.	Propyl "	($C_3H_7.OH$)	. .	79.70	" "
4.	Butyl "	($C_4H_9.OH$)	. .	161.12	" "
5.	Amyl "	($C_5H_{11}.OH$)	. .	322.32	" "

The amount for the amyl alcohol is calculated from the observations made with weaker solutions or for a shorter time, it being impossible to keep the heart going with a 0.2% solution of this alcohol so as to measure the outflow for thirty seconds. The table shows a very remarkable uniformity of increase of the weakening action of the alcohol as the number of CH_2 increases. With the exception of the ethyl, or common alcohol, the effect of each is found to be twice as bad as that of its predecessor in the series. In fact, this uniformity is almost suspicious, and one objection may be fairly urged against it. It may be questioned, namely, whether it be proper to compare the mere amount of lessening of the outflow. This is apparently done on the assumption that the amount of blood sent out by the hearts of dogs of about the same size will be comparable, and therefore the diminution of this amount in each case may be compared with that of any other case. Unfortunately the figures published in the article we are considering do not justify this proceeding. In the few cases printed as typical ones the normal amounts, that is, those pumped at fairly normal temperatures, without alcohol, range from 135 to 197 c. cm. It follows, therefore, that lessening the amount by any number of cubic centimetres will have a different significance according to the size of the non-alcoholized outflow. As only about one-fifth of the successful experiments are published, it is impossible to say what the result would be if the the percentages of change under the influence of the alcohols were tabulated. Some such method would seem to be much fairer than the one tabulated above. I have calculated the percentages for the five experiments given in detail. The percentage diminution of the alcohols in the order of the table already quoted is 11.4, 15.5, 47.2, 83.4, and 199.0% respectively. By a loss of 199% is meant that amyl alcohol causes a loss of 99.5% in 0.1% solution, and this is doubled to make it comparable with the other alcohols which were used in solutions twice as strong. The sepercentages are not as strikingly uniform as the figures in the author's table.

Hemmeter calls attention to the peculiar behavior of ethyl alcohol, which, according to his table, is the least deleterious of the series, and altogether fails to act on the heart as it should according to its position chemically. He is accordingly obliged to resort to the hypothesis that this alcohol is "probably constantly present in minute quantities in the atmosphere, as fermentation is going on in many ways and places, and as dogs probably must frequently get some little ethyl alcohol in their food" and that an organism may "establish a special degree of tolerance of one alcohol while retaining its sensitiveness to others." He also finds it necessary to use the alleged, but, by no means convincingly demonstrated, presence of alcohol as a normal constituent of the tissues to explain the feebler action. Other observers seem to have found that ethyl alcohol acts more feebly than methyl alcohol, or, at least, does not act twice as strongly as it would if the differences depended upon the number of CH_2 elements in its composition. Probably the relations of one CH_2 to another CH_2 or to several of them is of more consequence than the mere number of them, and this view would permit the latter three alcohols of our series to have a much more vigorous action than the first two. In the meantime it would be interesting to have a revision of Dr. Hemmeter's figures in the manner suggested, for the percentage method does not put ethyl alcohol in quite so peculiar a position as he has given it.

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[9] J. C. Hemmeter: On the comparative physiological effects of certain members of the ethylic alcohol series (CH_4O to $C_5H_{12}O$) on the isolated mammalian heart. Studies from the Biological Laboratory of Johns Hopkins University, iv, 225.

OTHER CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HEART.

While there is commendable uniformity in explaining the cause of the second pair of the four heart sounds — or more exactly the second and third of the three sounds — the nature of the first sound still provokes discussion and invites experiment. The latest communication is by Haycraft,[10] and presents considerations in favor of its valvular character, or at least of a definite valvular element. He admits that the contracting ventricle may produce a sound, but maintains that this sound is a resonance sound — and moreover a very complex one since it includes chest, stethoscope, and ear resonance tones. An examination of the pitch of the heart sounds seemed to show that they are higher than those produced by contracting skeletal muscles — or by the muscular tissue of the pulsating but bloodless heart itself. The pitch of the two heart sounds was determined for rabbits, a dog, and a boy by three persons with good musical ears. It was found that the heart sounds varied "somewhat in pitch even in the same species, but they are always in the bass clef and separated a minor third, or an impure minor third, from one another." Haycraft then proceeded to compare the pitch of the two heart tones in excised dead hearts where, of course, no muscular contractions occurred, but where closure of the valves could be produced by changes of pressure. He used the hearts of sheep and calves and sent a stream of saline solution in through the aorta to close its valves, and also into the right ventricle so as to close the corresponding auriculo-ventricular valves. The pitch of the aortic valves was found to be about a minor third higher. Haycraft concludes: "The first heart sound is then an impure musical note, a minor third below the second sound, and in the bass clef. It is a valvular sound like the second sound. It is accompanied by resonance tones both of the chest, stethoscope and the ear, these tones being produced by the shock of the contracting heart. In addition it is of course possible that there may be concomitant sounds produced by the rushing of the blood and other minor disturbances."

In a previous report attention was directed to Martin's study of the influence of temperature upon the rate of the mammalian heart beat. He demonstrated that "between the limits of 27° C. and 41° C., the heart of the dog, when isolated from all other organs but the lungs, beats quicker the higher its temperature, so that by heating or cooling the blood supplied to the isolated organ through the superior vena cava, the pulse-rate could be controlled."

Later experiments of the same author[11] have led to interesting results concerning the temperature limits of the heart's vitality. The main difficulty in previous experiments had been that high and low temperatures enfeebled the heart beat to such an extent as to interfere with its nourishment through the coronary arteries. The method by which this obstacle was removed and the pressure kept sufficiently high to ensure good nutrition need not be given in detail here.

"The isolated heart of the cat may be cooled down to a temperature of 16.5° C. (as indicated by a thermometer introduced into the right heart) and yet not be killed, as it revives if soon warmed again, but it usually dies at about 17° or 18° C." The cooling is accompanied by a slowing of the pulse.

The action of high temperatures on the heart is distinctly more complex. When the temperature is slowly and gradually raised the lethal or maximum temperature is found to lie usually between 44.5° and 45° C. Before this is reached there is found to be an optimum temperature at which the beat is quickest, although this may not be the temperature for doing the most work. This optimum in thirteen experiments ranged from 40.6° to 43.3° with an average of 41.3° C., any higher temperature in each case slowing the rate. By care it is possible to adapt the heart to higher temperatures. If the blood be cooled somewhat as soon as the heart shows any signs of weakness the temperature may then oftentimes be raised again to a still higher point without causing any weakening of the beat; in this way we can raise not merely the maximum but also the optimum temperature. This is similar to the results noticed clinically in fevers, especially in those of a markedly remittent type.

The "Baltimore method" for isolating the mammalian heart has also been used to investigate the question of the blood flow into the heart during diastole.[12] There has been much speculation concerning the "active" character of this condition of the heart. Many have believed that the blood is drawn into the heart by its own action, but no satisfactory statement had been made in support of such a view, and various experiments had made it less probable. Martin's article contains a full description of his method of working, and his results may be stated in his own words: "Once the 'aspiration of the thorax' has been eliminated [by opening the chest with the use of artificial respiration], the right auricle of the mammalian heart will not receive blood unless supplied to it under a decided, if small, positive pressure, while the heart in the closed thoracic cavity may, and probably does, act as a suction-pump, this is not due directly to an active expanding force of the heart, but is the secondary result of the pneumatic conditions prevailing within the normal closed chest cavity. Any cause diminishing thoracic aspiration must, therefore, greatly hinder the work of the heart; and it is probably more in this manner that the circulation is impeded in certain cases of hydro- or pneumo-thorax than by direct pressure exerted on the heart itself."

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[10] Haycraft: The cause of the first sound of the heart. Journal of Physiology, xi, 486.

[11] H. N. Martin and E. C. Applegarth: On the temperature limits of the vitality of the mammalian heart. Studies from the Biological Laboratory of Johns Hopkins University, iv, 275.

[12] H. N. Martin and F. Donaldson, Jr.: Experiments in regard to the supposed "suction pump" action of the mammalian heart. Studies from the Biological Laboratory of Johns Hopkins University, vol. iv, p. 37.

What seems to be an important addition to our knowledge of the chemistry of the blood has been made by Gabritschewsky,[13] of Moscow. Glycogen is well known to be a normal constituent of the liver and muscles, and has been commonly considered to be stored up in these organs as a sort of reserve material. The transportation of this substance from the liver to other organs is more or less mysterious because the proof of glycogen in the circulating blood has been very incomplete. Very few observers have found it in this tissue, and even these have hesitated to maintain that its presence should be considered normal.

Gabritschewsky finds that a certain small number of leucocytes normally contain glycogen. This intracellular glycogen is not much increased in man by taking food although it may be in animals. There is a marked increase in some diseases (*leukæmia* and *diabetes mellitus*). Besides this intracellular glycogen there is also found free intracellular glycogen in granules or in fragments of leucocytes (Blutplättchen ?). This intracellular glycogen is normal but is markedly increased in certain pathological conditions.

As already indicated the amount of such glycogen in the blood is not particularly altered by experimental feeding with carbohydrates or peptones. On the other hand, the introduction of sugar directly into the circulation or into the peritoneal cavity leads to a great increase of glycogen in the blood, and this seems also to occur when starch is injected into the peritoneal cavity. The same result is reached (guinea-pigs and dogs) when a peptone solution is put into the peritoneal cavity or into the blood. The inference appears reasonable that the leucocytes can, and do, form glycogen from carbohydrates and from peptones. The subject requires much more examination.

Some additions to our knowledge of the curdling of the blood will be mentioned an another portion of these notes below.

GASTRIC ACTIVITY OF INFANTS.

A long series of examinations of the digestive process in infants[14] gave interesting results, 248 healthy foundlings thus making a slight return for the services of the State in preserving them alive. The stomachs were emptied and washed out with distilled water (35° C.) by using soft catheters (No. 8 to 10, Jaques) in the ordinary manner at intervals of ten to fifteen minutes after feeding. The ages of the babies ran from two to forty-one days. The following points are noted :

(1) After a meal of 60 to 80 grammes of milk, the stomach may be readily pumped out for one and one-half hours, but the quantity diminishes rapidly during the first hour. At the end of two hours only 20 to 30 c. cm. may be obtained, and this disappears slowly in the course of half an hour.

(2) The acidity of the infant stomach is much less than that of the adult stomach. This was tested by neutralizing with one-tenth normal soda solution using phenolphthalein as an indicator. The average results showed an increase from 0.03 0.038% [that is, 0.3 to 0.9 parts in *one thousand*] for digestive periods of ten to ninety minutes, after which no increase of acidity was apparent. The lowest acidity observed was 0.022% while the highest, 0.121%, was only a half or a third of the amount considered normal in the adult. The determination of the character of the acid met with some difficulties since many of the more usual color reactions are uncertain in digesting mixtures of such feeble acidity. By the use of exacter methods (Richet, Rabuteau) Van Puteren convinced himself that hydrochloric acid is the normal acid in the infant stomach during the first two months, lactic acid being only exceptionally present.

(3) The antifermentative action of the gastric juice seemed to be exceedingly feeble. Plate cultures made at successive periods of the digestion showed no marked difference in the number of colonies. The conclusion is that the gastric juice of the infant is not very efficient as a germ destroyer, and the infantile digestive organs are therefore particularly prone to disturbances which, however, may be for the most part prevented by the use of sterilized milk.

(4) The milk-curdling ferment (which Foster now calls "rennin") was always absent in children up to twenty-four days, and could only be definitely demonstrated at thirty to forty days of age.

Van Puteren's results as to the peptonization process itself do not seem (judging from the abstract) sufficiently exact to be very interesting. Albumin (by which is presumably meant a substance coagulable by heat) has generally disappeared by the end of the first hour, and "pepton" is constantly present twenty-five minutes after feeding and until the end of the digestive process. Sugar was always found, and fat, too, so long as pepton was still present.

Free fatty acids (as the result of a fat splitting ferment or of the similar action of the pepsinhydrochloric acid) could not be found.

Gräbner notes that some of these results differ markedly from those obtained by Leo[15] a couple of years ago. Leo found that gastric digestion ended in one and one-half hours in the first months of life, but as he did not wash out the stomachs as Van Puteren did, small quantities of material might escape attention. Leo agrees that the acidity is in general much less than in the adult, but gives no definite figures and usually finds lactic acid in the later periods of the digestive process. Leo also found the milk-curdling ferment always, even in the stomachs of the new-born, and his estimate of the antifermentative powers of the suckling's stomach is much higher than that of Van Puteren. It is not always clear how these discrepancies are to be explained.

THE CURDLING OF MILK AND BLOOD.

Some additional light seems to be thrown upon the coagulation processes in milk and blood by the work of Arthus and Pagès.[16] These authors point out that we must carefully distinguish three different things in the behavior of casein: precipitation, as by an acid (since it may be dissolved again by alkalies) ; coagulation, by heat in the presence of an acid ; and finally, "caséification." The action of the "labferment"

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[13] Gabritschewsky : Mikroskopische Untersuchungen über Glykogenreaction im Blut. Arch. f. exp. Path. u. Pharm., xxviii, 272.

[14] M. van Puteren : Materialien zur Physiologie der Magenverdauung des Säuglings. Dissertation, St. Petersburg, 1889. Gräbner's *résumé* in Jahrb. f. Kinderheilkunde, xxxi, 1890, 188.

[15] H. Leo : Ueber d. Function des normalen u. kranken Magens u. d. therapeutischen Erfolge der Magenausspülung im Säuglingsalter. Berl. klin Wchnschr., 1888.

[16] Arthus and Pagès : (1) Recherches sur l'action du lab et la coagulation du lait dans l'estomac et ailleurs — Archives de physiologie, xxii, 331 ; (2) Sur le labferment de la digestion du lait — *ibid.*, 540 ; (3) Nouvelle théorie chemique de la coagulation du sang — *ibid.*, 739.

(rennet)[17] is declared to be that of preparing the casein for curdling and not the curdling itself. The "caséification" has then two steps: (1) a transformation of the casein by splitting it into at least two substances, "hémicaséinalbumose" (the albuminous substance of milk serum) and "caséogène," the forerunner of caséum"; (2) the combination of "caséogène" with salts of alkaline earths to form various compounds of which the type is the ordinary "caséum." This process takes place in the stomach as well as in the test-tube. The function of the "curdling ferment" is, therefore, according to this view, digestive, and to be classed with that of pepsine and trypsine. The real curdling depends upon the salts of calcium (particularly the phosphate of calcium).

These results led to the study of the coagulation of the blood and to the demonstration of its dependence upon calcium salts. The conclusions may be given nearly in the words of the original.

(1) The coagulation of the blood may be absolutely prevented by the addition of oxalates, fluorides, or soaps. Blood to which the oxalate of potash is so added as to make a 0.1% solution [that is, 1.0 oxalate to 1000 blood] will not clot even when putrefaction comes on. The oxalate may be added as a solid, or more conveniently, in solution, but any less proportion than 0.1% will merely delay the coagulation. The oxalate of sodium or ammonium or the fluorides of the alkalies may be used, or even soap solutions.

(2) As this procedure may arrest an impending coagulation or one already begun it is inferred that the salts do not prevent the formation of the ferment.

(3) This action is due to a decalcification. "Oxalated" blood which is permanently incoagulable will coagulate readily when the calcium salts are replaced, the clot forming in six to eight minutes upon the addition of a 1.0% solution of calcium chloride in the proportion of one-tenth of the volume of the oxalated blood. The action of the oxalates does not resemble that of neutral salts, for no mere dilution will clot oxalated blood as it does salted blood. In other words, the presence of soluble calcium compounds is essential to coagulation, and anything which removes them hinders the coagulation. The calcium salts may be replaced by those of strontium but not by salts of barium or magnesium.

(4) Fibrin is a calcium compound. The amount of fibrin obtained by adding the calcium salts to oxalated blood is sensibly proportional to the amount of the salts in solution.

(5) It is not a transformation of the fibrinogen into a substance capable of uniting with calcium salts to form an insoluble compound, for the coagulation is not instantaneous. The ordinary fibrinogen of the pure or of the salted plasma may be obtained by applying common methods to the decalcified blood.

In this connection it is worth while to note the results reached by Söldner after examining the relation of the salts to the casein:

Söldner starts from the observation that the basis of the ash of milk cannot be neutralized by the acids present as the amphoteric reaction of the milk requires. He shows that 25% of the phosphoric acid comes from the phosphorus of the casein (or its nuclein), and is præformed in the milk. Casein behaves like an acid inasmuch as it may form salt-like combinations with alkalies, two of which Söldner was able to distinguish as neutral or basic calcium compounds (with 1.55 and 2.36% CaO respectively).[18] The neutral compound is probably present in the milk.

The existence of various organic acids in the milk if also very probable. Henckel has recently obtained one gramme citric acid from a litre.

Only 52% of the calcium oxide in combination with acids appears in the filtrate obtained with porcelain under pressure. The rest, then, appears to be suspended in the milk as insoluble di- or tri-calcium phosphate. The calcium salts play an important part in boiling and in the curdling process. Heated milk shows a more marked increase in alkaline reaction which loses itself on cooling, but all feebly alkaline liquids do the same. It is not true that boiled milk cannot be curdled with rennet. The process is much slower because a portion of the essential calcium salts has been changed by heat to insoluble tricalcium phosphate. The addition of alkali has a similar action. Introducing CO_2 or any acid to make the phosphate soluble brings back the curdlability. In the same sense the addition of calcic chloride hastens the curdling.

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Reports of Societies.

THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON GENERAL MEDICINE.

Stated Meeting, February 16, 1892, A. A. Smith, M.D., Chairman.

Dr. W. W. Valzah read a paper on

THE CAUSATION AND TREATMENT OF CHRONIC DIARRHŒA.

Diarrhœa, he said, whether conservative or not, was always exhausting, if maintained for any considerable time. It should always be the aim of the physician to try to find out the cause of the trouble; although it was not always possible to connect chronic diarrhœa with a distinct lesion of the intestinal tract, nor were its relations to functional disturbances as yet fully determined.

The most marked characteristic of the stools was their fluidity; but they were also altered in chemical composition and other qualtities. It was important to make a careful study of the stools, and it was to be borne in mind that these generally varied from day to day, and often in accordance with the character of the food taken. In many cases more or less undigested food would be found in them. Chronic diarrhœa being for the most part a conservative process, except in the rare variety which was purely nervous, was not infrequently found in connection with advanced organic disease of the heart, lungs, kidneys and other organs. From a therapeutic view it was very important to get at the starting-point of the trouble. Commonly in the class of cases most frequently met with, there were some defects in the three great processes of secretion, elimination, and metabolism, and an important connecting link was auto-infection. The quantity of toxine might be abnormally increased. Some of the toxines contracted, others dilated the blood-vessels; and some paralysed, while others stimulated, the nerves. The prevention and treatment of auto-infection constituted the most important element in the successful management of chronic diarrhœa.

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[17] Apparently on account of the change in the view taken of its action, the term "labferment" is retained in these articles although Pagès had proposed the name "pexine" in his thesis [Recherches sur la pexine, 1885]. Pexine would be an admirable name for a curdling ferment, and one which might be used to form hæmopexine (or hæmatopexine) and galactopexine, or the more poetical glagopexine, as Professor Goodwin has kindly suggested to me, besides reminding me that Aristotle used πῆξις in connection with the coagulation of milk and blood. I suggested the use of the word to Professor Foster, in ignorance of Pagès' thesis, but "rennin" had unfortunately already been adopted.

[18] Söldner: Die Salze der Milch u. ihre Bezietung zu dem Verhalten des Caseins. Dissertation. Erlangen. Noted from Escherich's Summary in Jahrbuch f. Kdrklkde, xxxi, 173.

All cases might be roughly divided into two great classes: those in which lesions of the intestines are present, and those in which they are not. In the cases where there was only functional trouble the disease was mild and more or less intermittent, and no evidences of inflammatory action were found in the stools; while chronic enteritis was characterized by more or less constitutional disturbance and by tenderness on pressure at certain points with the appearance of blood, mucus and pus in the stools, if ulceration was present. The lower down the intestinal lesion, the more frequent and painful would be the movements. If bile matters were found in the stools, it pointed to the small intestine as the seat of trouble.

Treatment. — The treatment, in order to be successful, required the most indefatigable perseverance on the part of the physician, and the most hearty co-operation on the part of the patient. The most minute directions were to be given and carefully followed, and, above all, it was requisite that the medical attendant should infuse hope and courage into his patient. Among the essentials were good hygienic surroundings, a carefully regulated life, and proper diet. The most detailed instructions as to clothing, bathing, rest and exercise should be given. Warm clothing was required, and especially over the abdomen. In the beginning a warm plunge or sponge bath was of great service in causing increased elimination of toxine. Absolute rest in bed was necessary in some cases for a considerable time. Later, in the stage of convalescence, moderate exercise was beneficial.

The treatment was to be based on the etiology, and had very little to do with the control of the symptoms by opiates and astringents. Checking a diarrhœa by drugs was only temporizing, and it commonly ended in producing an explosion in the system. Active elimination by all the emunctories was usually called for, and "free drainage" was as important as in surgery. In addition, it was important to improve the condition of the blood in every way possible. In general, therefore, careful alimentation and active elimination were the prime requisites.

In particular, the first thing to do was to cleanse the alimentary canal and keep it clean and sweet. Cholagogues and purgatives were called for, and among the agents to be used were bichloride and biniodide of mercury, calomel, and salicin. Cascara sagrada was the most valuable laxative at our command, and in general those drugs were to be selected which least overtaxed the diseased part. In some cases stomach-washing, not too frequently repeated, and in others copious draughts of hot-water were of great service. The latter had a good effect upon the liver and also counteracted fermentation in the intestine. If there was much mucus the addition of an alkali to the water was called for. Mérck's salicin was the only salicin that he had found to be active, and it was often useful in ten or twenty grain doses. Salol was by far the most efficient duodenal disinfectant. When the large intestine was at fault bismuth was of service, if given in sufficiently large doses. To assist the stomach dilute hydrochloric acid was sometimes required. It was to be given two or three times within two hours after eating in doses of from five to ten drops.

A diet of animal food was often of the greatest possible service, especially as it was important in many cases that digestion should take place principally in the stomach, in order that the diseased intestine might be given a physiological rest. Milk was not suitable in disorders of the small intestine, and in general, on account of the difficulty of getting it pure and fresh and the rapid changes which it was apt to undergo, it was not as desirable an article of diet as meat. If the trouble were located in the colon or low down in the ileum, however, a milk diet was often advisable. The treatment might be summed up as follows: Prevent auto-infection; cleanse the alimentary canal; secure perfect digestion of the food taken; treat the lesions; treat the sequelæ; control harmful symptoms.

Dr. Andrew H. Smith called attention to malaria as a cause of chronic diarrhœa. The diarrhœa might possibly to the only evidence of the malarial poison in the system, and would soon disappear after the institution of anti-periodic treatment. He agreed with Dr. Van Valzah that a large number of cases of chronic diarrhœa did much better on an animal than on a farinaceous diet, and that the reason for this was that rest was secured for the intestines by throwing the work of digestion on the stomach. In some cases we had a diarrhœa which was due to imperfect action of the pancreas, and in these the administration of ether appeared to be indicated.

Dr. C. E. Quimby said that it had taken him a long time to get out of the old way in which he had been brought up of treating these cases with opiates and astringents. He now believed, however, that it was just as necessary to clean out the intestinal canal in chronic diarrhœa as it was in acute diarrhœa due to any source of irritation, like green apples, for instance; and he invariably began his treatment with a cathartic. In the diarrhœa of tuberculosis he believed that it was very important for the relief of the pain so frequently complained of, as well as the looseness of the bowels, that the food should be digested before it reached the diseased glands in the intestine. He had, therefore, adopted the practice of giving large doses of pancreatin an hour or an hour and a half after eating, and had found it attended with very good results.

Dr. V. Agramonte spoke of the liability of milk to undergo putrid fermentation, which often set in long before there was any evidence of lactic fermentation, and said that in warm weather especially, if milk was called for, he thought it was better to use condensed milk, which was not open to the same objection. He also spoke of hæmorrhoids as a cause of chronic diarrhœa which ought not to be overlooked.

DISCUSSION ON OPIUM-POISONING, ESPECIALLY FROM THE MEDICO-LEGAL SIDE.

The discussion was opened by Dr. Andrew H. Smith, who said at the outset that the symptoms were sometimes insufficient for a positive diagnosis. Having mentioned that when larger doses of opium were taken the stage of excitement was usually very brief, he gave a short summary of the ordinary signs of opium narcotism. In speaking of the contraction of the pupils, he said that while this was, as a rule, perfectly symmetrical, one case was mentioned by Wood in which the pupil of one eye was contracted, while the other was dilated. He believed that too much stress should not be laid upon the contraction of the pupils. Before death the pupils generally became dilated. Then, too, it was well to remember that the atropia now so frequently associated with morphia in hypodermic injections, tended to produce dilatation.

The condition of the respiration, he went on to say, was generally regarded as the most certain indication of the effect of opium on the system. While, however, it was undoubtedly true that the slowness of the respiration was, as a rule, an index of the extent of the narcotism, cases ending in death were on record in which the respirations were but little, if any, slower than normal. He then mentioned two such cases, one occurring at St. Luke's Hospital, and the other at Bellevue. On the other hand, he had seen one instance in which one-eighth of a grain of sulphate of morphia reduced the respirations to thirteen per minute.

In speaking of the differential diagnosis he said that the pupils were very rarely equally dilated and that there was apt to be strong pulsation of the carotids. In apoplexy it was not possible to rouse the patient, though reflex movements could be excited; while in opium-poisoning the patient could often be temporarily roused, but reflex movements could not be produced. In apoplexy there were often movements of the arm or the leg on one side (the other side being paralyzed), and this was not the case in opium-poisoning. The symptoms of apoplectic effusion into the pons Varoli were said to be identical with those of opium-poisoning, but it seemed to him difficult to conceive of a lesion situated so exactly in the median line as to produce precisely similar effects on both sides of the body. In compression of the brain there was usually some evidence of external violence. A patient suffering from alcoholism was apt to babble incoherently, which was not the case in opium-poisoning, and the cold douche was usually effective in dissipating to a marked extent, the symptoms of alcoholic intoxication. In many cases of opium-poisoning, the odor of the drug could be detected in the breath and in matters vomited.

In uræmic coma the presence of albumen and casts in the urine would usually establish the true nature of the case. To what extent renal inadequacy might intensify the action of opium was a question of interest. In a case where albumen was found to be present in the urine he had known a dose of McMunn's elixir equal to one-sixth of a grain of sulphate of morphia to produce death in twenty-two hours, notwithstanding the most energetic treatment to save the patient. In another case which he had seen, an ordinary dose of morphia given after a surgical operation was followed by death, and at the autopsy granular kidney was found. In speaking of the matter of idiosyncracy, he referred again to the case previously mentioned, in which one-eighth of a grain of morphia reduced the respirations to thirteen to the minute, and mentioned another in which a small quantity of morphia absorbed through the skin produced profound narcotism, the respirations falling to the extreme point of five in three minutes. The post-mortem appearances after opium-poisoning were for the most part negative, and would throw but little light unless the presence of the poison could be shown by chemical tests.

Dr. Van Valzah mentioned a case of tobacco-poisoning he had seen, in which the pupils were contracted in precisely the same manner as by opium.

Dr. P. Brynberg Porter spoke of a case of diabetes where a small dose of morphia given hypodermically for the relief of pain had apparently been the exciting cause of fatal coma which was no doubt already impending.

The Chairman related some cases which had occurred in his experience. One was that of a patient whose respirations became reduced to two per minute, but which, like the remarkable case mentioned by Dr. Smith, recovered. Another was that of a man suffering from rheumatic gout who died, notwithstanding the most energetic treatment, from the effects of a dose of one-sixth of a grain of morphia given for the relief of pain. The autopsy revealed a cirrhotic kidney. A third patient whom he had seen when an interne of Bellevue Hospital, some twenty years ago, died with all the evidences of opium-poisoning, and at the autopsy a clot was found in the pons, situated directly in the centre, and nearly half an inch in length. It was the only case of the kind that he had ever met with, and he regretted that he had not preserved the notes of it. He remembered, however, that the respiration was of a stertorous character. In conclusion, he called attention to two points. The first was, that in doubtful cases it was highly desirable that the urine should be examined for the presence of opium, as it afforded a valuable aid to diagnosis. The second was in regard to contraction of the pupils. He had seen this present in cases of alcoholism when there was pachymeningitis on both sides and extending pretty well forward.

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THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Thirty-first Annual Meeting, January 9, 1892.
Dr. T. M. Rotch reported

CASES OF ATROPINE AND OPIUM POISONING IN EARLY LIFE.[1]

Dr. S. E. Wyman said: I have but little to add to Dr. Rotch's interesting account of the case just reported, except to state what part was taken by me after Dr. Rotch was called away.

Certainly, when first seen by me, at 10 A. M., she was in a pitiable state; being dragged about the piazza between two attendants, one of whom supported her on either side; her head was hanging on one side, her eyes closed, and her legs dangling in her forced journey. When taken into the lap of the nurse brought by Dr. Rotch, her head fell immediately upon the nurse's shoulder, and she fell fast asleep, requiring constant efforts to keep her awake. In an interval of consciousness, she begged to be allowed to go to bed. Her pupils were contracted to an almost pin-hole size; her pulse rapid; her respirations not noteworthy; her skin pallid and cool.

She vomited several times after 10 A. M., coffee and water containing the belledonna mixed by Dr. Rotch. At 10.20 she was put into a mustard pack, vomiting at the smell of the mustard. At 10.30, I injected subcutaneously atropiæ sulphat., gr. $\frac{1}{240}$. It was truly remarkable to see the effect which followed this within forty-five minutes. Whereas, previously, it was necessary to speak to her every thirty to forty seconds to prevent her from sleeping, she then began to sit up and notice people, who were standing on the street before the window where she was held by the nurse. She did not, however, remain awake voluntarily for any length of time so that I repeated the same injection at 11.20 A. M.

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[1] See page 231 of the Journal.

At 12.10 P. M., she was much improved, sat up, asked to be dressed (as she had been previously in a blanket) directed what gown she preferred, etc. The effects of the atropia were marked in the efflorescence of the skin, the dryness of the mouth and dilatation of the pupils. When dressed, she desired to walk out on the piazza, and did so.

I stayed with her until 1.30 P. M., when she was quietly resting on the sofa, but perfectly conscious and wakeful although weary.

The cases which occurred in my own practice were in very young infants, and, in two instances, interesting from the fact that the source of the poisoning was a famous patent cough-balsam sold and advertised extensively.

Case I. Florence C., aged twenty-three days, had been coughing for several days, and had been treated by her mother. I was hurriedly summoned at 3 P. M. on November 11, 1891, with the message that the baby was dying and could not be aroused by anything which the mother could do. I saw her at 3.15 P. M., when I found the infant plainly under the extreme effects of opium. She was cyanotic, cold, almost pulseless, and drawing a feeble breath only at long intervals. The pupils were mere pin-holes, the thumbs clinched tightly in the palms of the hands.

I learned from the mother that, as the child had a bad cough, she had given her, at 8 A. M., just after nursing, some Adamson's Cough Balsam, just how much, it was difficult to learn, but probably between five and ten drops; that the child went to sleep soon after, and the mother thought nothing of it until 2 P. M., when she tried to arouse her without success. After working some time, she sent for medical help.

At 3.20 P. M. she was put into a hot mustard pack. Her color improved some, but otherwise her condition remained the same. There was delay in getting the solution of atropia, so that it was 3.40 before I gave her gr. $\frac{1}{480}$ by subcutaneous injection; and this was repeated at 4 P. M. She began to improve, the pupils dilating and the skin becoming bright scarlet. It was not until 9 P. M. that she was sufficiently awake to nurse. From this time on her recovery was rapid.

In the same room was a child two years and ten months old, who had been similarly treated with Adamson's Balsam, who was so drowsy that he could keep his eyes open for a few seconds at a time only. He was, however, so much less under the influence of the opium that no treatment was given him.

Case II. Frances W., aged five weeks. I was called to see her November 21st at 7.30 P. M., the message being that "the child could not be roused, and was dying." This infant had been seen by me some days previously, and a prescription of liquor ammon. acetatis, syrup ipecac, syrup tolu and water ordered.

When seen she was very much in the same condition as the first case. The skin was purple and cold; the pupils contracted to the extreme degree; almost no efforts at respiration; and at each attempt the noise of mucus in the throat; scarcely any pulse to be detected at the wrist; and the thumbs tightly clinched in the palms of the hands. She was plainly under the marked influence of opium, and apparently about to die.

At a loss to know where any opium could have been obtained, I learned that the mother might have given the child by mistake half a teaspoonful of a prescription, written by me in March, 1889, for a child seven years old, which contained, as I learned afterwards from the druggist, tr. ipecac Co., twenty drops to two fluids ounces.

I gave the child some hot whiskey and water, put her into a hot mustard pack, and at 7.45 P. M. gave, by subcutaneous injection, atropin sulph., gr. $\frac{1}{480}$; and at 8 P. M., atropin sulph., gr. $\frac{1}{720}$, by subcutaneous injection. She began to improve, so that at 8.30 P. M., by slapping, she was made to cry, but would lapse off to sleep if left alone. She began to breathe better, and coughed some. The pupils dilated, and the skin became red but not scarlet. The thumbs, however, remained in the same position, and there was a lateral deviation of both eyes, now to the right and again to the left, as late as 9.30 P. M.

Her recovery after this was uneventful.

Dr. A. D. Sinclair had seen no cases in children, but remembered very well one marked case in an adult, of atropia poisoning, caused by a large dose given subcutaneously in the days when subcutaneous syringes were first heard of. Having no electric battery at hand, he had restored to the use of a cold douche, with good results.

Dr. J. G. Blake said we all know that infants and rabbits will take large does of belladonna with very little physiological effect. Among adults, too, there is a great difference in the susceptibility to this poison. Some years ago he was called to see a young man who was suddenly taken violently ill with all the symptoms of belladonna poisoning, including the rash, and dry throat. Vanilla ice-cream was found to be the cause. He was told by Dr. B. F. Davenport that a spurious bean sometimes used in making vanilla extract produced symptoms of belladonna poisoning. His patient recovered.

Dr. E. J. Forster said he had given, in a severe case of opium-poisoning, one-half a grain of atropia, followed in fifteen minutes by one-quarter of a grain more, with recovery. Stillé says that one-quarter of a grain of atropia has caused alarming symptoms, but that less than one grain has never been fatal.

Dr. R. L. Hodgdon had also injected half a grain of atropia in opium-poisoning, with ultimate recovery.

Dr. T. M. Rotch said that the cases reported tonight teach us that it is our duty to warn people not to keep medicines too long, as they evaporate and became much stronger.

Dr. S. E. Wyman referred to a case where suppositories had been used, presumably containing opium, where the infant was made very drowsy.

Dr. C. W. Townsend said he had once written for six suppositories containing a small dose of both atropia and morphia, one to be given to a child each night for incontinence of urine. The apothecary had put the whole quantity into one suppository, and the child received a dose of each drug six times as large as was intended. Either one of the drugs alone might have produced serious results, but the two antagonized each other: and the result was simply drowsiness the next morning, and also a cure of the incontinence. The apothecary admitted that the error was his, and that the prescription was properly written.

Dr. **Edward Reynolds** gave a *résumé* of the paper read by him last time, entitled

CASES OF LABOR COMPLICATED BY PROLAPSED OVARIAN TUMORS,[2]

the discussion of which was deferred to this meeting.

Dr. **F. B. Harrington** said he thought there would be no objection to tapping the cyst if one was sure of his diagnosis. He should be tempted to insert a fine needle first for diagnostic purposes.

Dr. **G. Haven** said that the case at the Lying-in Hospital was interesting from the point of view of diagnosis. It does not seem possible that an ovarian tumor could disappear in such a short time.

Dr. **W. L. Richardson** had not seen a case of this sort, but he would not object to puncturing the cyst with trochar, in order that delivery might take place.

Dr. **Edward Reynolds** replied that he should fear peritonitis from the escape of a harmful fluid into the peritoneal space between the tumor and the vagina. He thought that it might be forced out around the trochar; and at all events some of the residual fluid would be pressed out after the removal of the trochar. The puncture in the vagina he should consider dangerous in the presence of the lochial discharge. The puncture of large pus-tubes would certainly be serious or fatal.

Dr. **A. Worcester** said he had had no experience in these cases; but it seemed to him that the only thing to be done would be to tap, thus removing the obstruction, and if need be do an immediate laparotomy after the delivery. Laparotomy before delivery he believed would be almost impossible.

Dr. **G. Haven** would agree with Dr. Worcester.

Dr. **F. B. Harrington** said the existence of prolapsed pus-tubes as a bar to delivery would probably never occur, as their existence would also be a bar to conception. And therefore he did not believe that laparotomy, to prevent peritonitis after tapping, would be necessary.

Dr. **E. Reynolds** remarked that he was glad to hear the various opinions of the Society, having introduced the remarks on treatment for that purpose.

Dr. **F. H. Davenport** said that it would certainly be very rare that a non-adherent ovarian cyst should come down in advance of the head. A dermoid cyst or a fibroid tumor might do so, or a cyst bound down with adhesions. If these were present tapping could do no harm. The chocolate-brown contents of some cysts, or the contents of dermoid cysts are not septic and would do no harm.

Dr. **Wyman** referred to a case where there was a large cyst of the vaginal wall interfering with the examination of the os in labor. He tapped, and drew off several ounces of fluid.

Dr. **Davenport** had seen cysts within close proximity of the cervix on the anterior vaginal wall.

Dr. **J. G. Blake** should certainly tap, if one of these cases should occur in his practice.

In reply to a question in the House of Lords the Prime Minister has declined to assent to issue a Royal Commission to inquire into the London fogs, but has intimated his willingness to support the appointment of a Committee of the House.

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[2] See page 133 of the Journal.

Recent Literature.

Treatise on Gynecology, Medical and Surgical. By S. Pozzi, M.D. Translated from the French edition under the supervision of, and with additions by Brooks H. Wells, M.D. Vol. I. New York: William Wood & Co. 1891.

Dr. Wells deserves the hearty thanks of the profession for giving us this valuable work in English, and is to be congratulated on the admirable manner in which the translation has been made. Pozzi's work is the latest comprehensive exponent of the French school of gynecology, and it demonstrates the fact that in that country the leading workers in this department are fully abreast of the times. We have here a book of which no country need be ashamed. In comprehensiveness of treatment, in catholicity of opinion, and in clearness of expression, it ranks with the best works on the subject.

It would be a pleasure to review it in detail, but it would be impossible to do justice to it in a short article. The order in which the subjects are treated suggests that clinical lectures formed the basis of the book, and the author says that such is the fact. Anatomy is left out, and wisely, as it seems to us. The first four chapters deal with antisepsis (a very thorough and valuable *résumé* of the subject) anæsthesia, wound closure and control of hæmorrhage and gynecological examinations, all subjects of general interest. Then follow three chapters on metritis, which cover more ground than is usual under that title, since they include endometritis, endocervicitis, affections of the cervix, erosions and lacerations, as well as metritis proper. A most exhaustive treatment of the subject of fibroma of the uterus, occupies six chapters, and the various forms of medical and surgical methods employed for their relief are very fully described. More than the usual space is given to methods of vaginal enucleation. The following three chapters deal with carcinoma of the uterus, followed by four on displacement of the uterus, one on deformities of the cervix, and one on disorders of menstruation. In all, we have a book of nearly six hundred pages, which is issued in a very attractive form by the publishers. The notes by the translator add distinctly to its value, and not the least useful feature is the bibliographical notes which have been grouped together at the end of the various chapters.

A large number of engravings and six colored plates add to the attractiveness of the book. Taking it all in all it is one of the best books we have seen for a long time and no specialist can afford to be without it.

The Physical Diagnosis of the Diseases of the Heart and Lungs, and Thoracic Aneurism. By D. M. Cammann, B.A., Oxon., M.D. New York and London: G. P. Putnam's Sons. 1891.

The present book is one of a number which have recently been published on the subject of auscultation and percussion, and though well written, contains nothing to especially distinguish it above the others. The author is to be commended for introducing a short chapter on acoustics, but we doubt if American physicians will unreservedly agree that "the pleura is the frequent if not the only seat of crepitant and subcrepitant râles, as well as a sharer with the bronchi in the production of coarse and gurgling râles."

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SPECIFIC GRAVITY OF THE BLOOD.

THE specific gravity of the blood has recently been studied again by Peiper,[1] using the method of Schmaltz,[2] by which a small quantity of blood is weighed in a "capillary pyknometer." This method proved satisfactory, giving exact results from which the following conclusions were derived:

(1) The specific gravity of the blood of healthy human beings varies but slightly — 1045 to 1046 — with an average which is somewhat higher for men (1055) than for women (1053) or children (boys, 1052, girls, 1050). Landois has given 1055 as an average with a range from 1045 to 1075, while Jones, using a method like that of Roy, noted a range from 1035 to 1068.

(2) Pathologically, the variations may be relatively considerable (1025 to 1068). The specific gravity is lowered in nephritis, chlorosis and anæmia, as well as in diseases producing marasmus (for example, *phthisis pulmonum* and *carcinoma ventriculi*), but raised in febrile diseases and in conditions leading to marked cyanosis.

Schmaltz[3] has also published some results obtained by his methods which may be given here nearly in his own words. Normally, the specific gravity of human blood varies within narrow limits, but is, as a rule, considerably lowered in anæmic conditions, most of all in chlorosis and in blood diseases properly so called. The specific gravity seems to depend chiefly upon the amount of hæmoglobin, and to have only a very limited dependence upon the number of red corpuscles. As anæmic conditions improve the specific gravity of the blood is raised and may apparently serve as a good criterion of the stages of the disease. If the circulation in the extremities becomes sluggish the specific gravity of the blood is not infrequently raised, and may be found to be normal despite existing anæmia (as in heart and lung troubles).

In Roy's[4] method for examining the specific gravity of the blood, drops are brought into standard mixtures of glycerine and water until one is found in which the blood just floats, neither sinking nor rising. Jones[5] modified this procedure slightly and found the method very convenient in a long series of observations.

Quite lately Jones[6] has published a long article concerning his investigations, and some conclusions which he considers that they permit, despite an acknowledged incompleteness. The method is still substantially that of Roy, the standard solutions being mixtures of glycerine and water with the addition of sodium silico-fluoride, which Jones considers an efficient antiseptic in neutral or slightly acid solutions. The solutions are prepared with great care, using very accurate hydrometers and keeping "all the apparatus at exactly 60° F.," but it is maintained that the ordinary variations of temperature have no effect upon the measurements since the small column of blood in the fine pipette rapidly assumes the temperature of the liquid in which it is placed. A large number of such solutions are kept on hand for specific gravities ranging from 1027 to 1075. With a sufficient number it is asserted that results may be reached which are accurate to within "one-third of a degree," and Jones considers the limit of possible error in his own observations to be "not more than half a degree." The method has the advantage of great rapidity, but the details should be studied in the original.

It is difficult to condense the results which Jones presents, and still more difficult to be certain that they are all correct. Tables are given in chart form detailing the observations on 495 males and 662 females, all in good health. These charts show unquestionably that the range of the specific gravity of the blood is very great in the first year for both sexes, and then seems to lessen for several years becoming great again in women of thirteen to twenty-five years (a normal inclination to anæmia), and broadening out once more for both sexes in old age. Jones's summary of the points shown in the chart is as follows (page 344): "The specific gravity is generally lower in women than in men, but it is about the same in both sexes before the fifteenth year: and is higher in old women than in old men. In males, the specific gravity is about 1066 at birth — falls during the first year and subsequent two years, being about 1050 in the third year; thence it rises till about seventeen years of age, when it is about 1058. It remains as high during middle life, and falls slightly in old age. In females, the specific gravity is about 1066 at birth: it falls in infancy, as it does in males, to about 1049 in the third year. Thence it rises till the fourteenth year, when it is 1055.5. Between seventeen and forty-five years of age it is lower than in the female at fourteen, being about three degrees lower than in the male. The widest range occurs during the first year because the specific gravity is very high at birth and falls to a very low point during the first six months." The observations are apparently numerous enough for persons of ten to thirty-five years of age, but are almost too few for the later years of life and quite insufficient for the earliest. To generalize from nine boys and five girls, whose ages are tabulated as ranging from birth to one year, or from eight boys and three girls noted for the next year is, to put it mildly, exceedingly unsafe. The specific gravity of the blood at that age *may* be exactly what Jones states it to be, but his chart does not demonstrate it (at least not for males), and in view of the peculiar nature of growth during that time very many more memoranda are needed.

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[1] Peiper: Das specifische Gewicht des menschlichen Blutes. Ctbl. f. klin. Med., 1891, 217.

[2] Deutsches Arch. f. klin. Med., xlvii, 145.

[3] Schmaltz: Das Verhalten des specifischen Gewichtes des Blutes bei Kranken. Deutsche med. Wchnschr., 1891, 555.

[4] Proceedings of Physiological Society, 1884. Journal of Physiology, v. p. 9.

[5] E. Lloyd Jones: On the variations of the specific gravity of the blood in health. Journal of Physiology, viii, 1.

[6] E. Lloyd Jones: Further observation on the specific gravity of the blood in health and disease. Journal of Physiology, 1891, xii, 299.

Jones finds a resemblance between his curves and those of Leichtenstern for hæmoglobin and infers that the variations of this substance are closely related to those of the specific gravity.

The specific gravity of a drop of blood varies somewhat according to the locality, being lower where the blood flows readily (fingers and toes) than where it is obtained with less ease (nape of neck, arms, legs): it is also lowered by active congestion but raised by passive congestion (ligature). Suggestions of racial peculiarities are found in the fact that the specific gravity is rather more in persons with light eyes than in those with dark eyes. Some other variations according to "temperament" and "type" are noted in the original. The specific gravity is also further affected by food and exercise, food usually lowering it in an hour or two, but alcohol raises it, while the action of hot liquids is not uniform; exercise of a gentle character depresses, but prolonged or violent exercise elevates this quality of the blood, and regular exercise (as in the boating men) was found to be associated with a permanently high specific gravity. Sleep generally causes it to rise but the effect is not as constant as the author had supposed from his earlier observations.

The blood of birds appears to be heavier (1059 to 1075), and that of the frog lighter (1034 to 1053), than in man. About half of the article before us is taken up with the measurements made in disease, but in view of the fact that variations of three to ten degrees in each individual are common (page 313), and also in view of the conclusion (No. 6, page 343) that "the specific gravity varies considerably in different persons, so much so that a specific gravity which is normal for one may be a sign of disease in another," and furthermore in view of the circumstance that no definite statement is made as to the number of measurements, these measurements must be read to be appreciated.

If any conclusions are to be drawn from the specific gravity of the blood in pathological conditions, some very different method of collecting the blood will probably have to be employed, although this method of examining what is collected appears to be easy and trustworthy.

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ETIOLOGY AND NATURE OF TYPHUS FEVER.

Fortunately it cannot yet be said that typhus is endemic in this country, though how long we shall be free from it with our present reckless admission of a debased immigration is a question which at best admits only of a doubtful answer. It is still both endemic and epidemic in many parts of Europe, though some of its former favorite haunts, as Glasgow, have been purged of its presence by intelligent sanitary measures. This epidemicity and the conditions of diffusion are well expressed in the terms so frequently applied to this disease: *ship fever*, *famine fever*, *army fever*, *prison fever*, etc.; that is, where great numbers of human beings have been massed together under unhealthy hygienic conditions, typhus has ever prevailed with great intensity. It has in past ages, in innumerable instances, been the scourge of armies. In the late war between the Russians and Turks, fifty thousand men are said to have fallen victims to this disease (Thoinot).

It is in an eminent degree both infectious and contagious. Neither sex nor age has any marked influence. Misery, famine and filth are the most potent predisposing conditions. Marchison's statistics give ninety-six per cent. of cases among the inmates of workhouses and the denizens of slums. The worst epidemics in Ireland have coincided with years of famine. The famine districts of Russia are this present year a hot-bed of typhus. The predisposing influence of over-crowding and want of ventilation is everywhere acknowledged. The contagious nature of the disease is attested by the success of prophylactic measures, and in particular, of isolation of the sick. It is undisputed that typhus is transmitted from person to person, by direct contact. Another fact, well established, is its transmission by clothing, by infected ships, houses, furniture, etc. It resembles in this respect the eruptive fevers, small-pox, scarlatina, measles. According to Marchison, typhus is most communicable by sick persons from the end of the first week till convalescence.

Numerous researches have been undertaken to discover the germ of typhus fever. Those most worthy of mention are the investigations of Hlava, and those of Thoinot, undertaken in collaboration with Calmette. Hlava, when studying an epidemic of typhus at Prague in 1888, referred the cause to a strepto-bacillus which he has figured and described. But this strepto-bacillus is by no means constant, and Cornil and Babes think it only a secondary and unimportant micro-organism. Thoinot and Calmette find numerous microbes, and frequently, but not always, the strepto-bacillus of Hlava. They find constantly in the blood of typhus patients "an interesting organism," which they regard as *sui generis;* unfortunately it has not been cultivated.

The blood of typhus patients is, they say, not cultivable or inoculable in small animals, as rats, guinea-pigs, hares, etc. It is evident then that new researches are needed before the causal agent can be said to be identified.

Empirically, it has been determined that the air is not a good vehicle for the propagation and transmission of the germ, whose power of extension does not exceed a very limited zone around the sick person. Without direct contact with the patient, or with objects that harbor the germ, as clothing, there can be no contracting of typhus (Thoinot). The facts that substantiate this proposition are numerous.

According to most recent authorities, the rôle of potable water in the propagation of typhus fever is not great, at least as compared with the relation of drinking-water to typhoid fever in the transmission of that disease. Thoinot, whose recent memoir we have studied in this connection,[1] thinks it doubtful whether typhus be inoculable by the digestive tube. He believes that the germ has a special affinity for *the secretions of the skin*, fixing itself to them and being thereby transmitted in the form of exhalations, or communicated to susceptible persons by touch. It is not definitely known how far the lungs are a medium for the inoculation of the infectious agent.

Thoinot finishes his chapter of etiology with these conclusions:

(1) Typhus is, in all probability, the function of a figured germ, whether that described by Hlava, the one studied by myself, or some other micro-organism.

(2) Typhus is endemic in certain countries, nor do we know the reasons of this endemicity; whether or not it may be due to the cultivation of the germ in the soil, to the qualities of the races which perpetrate the existence of the germ by slow and successive transmissions, etc. We are very ignorant on these points.

(3) Typhus becomes epidemic in certain cases and spreads far from its starting place, or invades dense agglomerations of people. The adjuvant conditions of the diffusion are overcrowding the general condition, and physiological depravement (*misère physiologique*) a personal condition, which may, moreover be generalized to a collection of individuals, as in cases of tribal or natural destitution and of famine.

(4) Typhus does not always leave behind a focus of endemicity when it invades an army or a country epidemically, in this respect resembling cholera.

(5) The transmission of typhus is effected by direct contact with the patient, or by contact with objects which are charged with the specific germ from intimate contact with the patient.

(6) The channels of inoculation of the disease, as also the channels by which the germ is expelled from the sick organism, are unknown to us. It is probable that the products of cutaneous excretion play a principal rôle.

(7) The air does not appear to be a vehicle of contagion, and the same may be said of water.

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[1] Typhus Exanthématique, Traité de Médecine, February, 1892.

THE APPROPRIATION FOR THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE ENDANGERED.

THE Army Appropriation Bill lately reported by the Military Committee to the House of Representatives cuts down the usual annual appropriation for the Library of the Surgeon-General's Office, United States Army, one-half; that is, this moderate appropriation is reduced from ten thousand to five thousand dollars. This is a penny-wise, pound-foolish piece of work. If this library were a river or a harbor, what a pitiful sum ten thousand dollars would seem to some members of Congress!

Although it is only a library, which for some unknown motive the Military Committee seeks to cripple, we desire to assure Congressmen that they will find that it has warm champions in the members of the medical profession all over the country, who know what this library has become and the services it has rendered and may render to humanity — meaning thereby, the average voter.

If this item is not restored, either in the House or the Senate, the result must be that the formation of a complete medical library at Washington, which has progressed so successfully for the last ten years, must be stopped.

We most vigorously protest against such an unwise and short-sighted attempt at economical (!) legislation.

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MEDICAL NOTES.

DR. KARL VIRCHOW STRICK. — We have received a personal letter from Dr. S. Guttman, editor of the *Deutsche medicinische Wochenschrift*, asking us to call attention to the shortcomings of a certain Dr. Karl Virchow Strick, who has lately been advertising in the daily press of Cincinnati. The particulars given are exactly those which we published last week on page 224, under the title of "A Warning from Virchow."

MORTALITY OF THE STATE OF NEW YORK IN JANUARY. — According to the report of the New York State Board of Health the mortality of January was greater than that of any month previously recorded, except that of April, 1891, which it nearly equals: it arose from a daily average of 291 deaths in November, of 362 in December to one of 434, exceeding the daily average of January, 1891, by 126 deaths, and that of the entire year 1891 by about 100 deaths. The increase is due to epidemic influenza, what may be termed the third outbreak, which reached its height during this month. Compared with January, 1890, and April, 1891, the two months of the height of previous epidemics, the mortality in early life is less, while that of old age seems to be much greater; from acute respiratory diseases, and also from consumption, the number of deaths is considerably less than in either of the other months. Deaths attributed to diseases of the digestive and circulatory systems are increased; compared with previous outbreaks, this one has appeared to fall especially upon the aged, the number of deaths of old people being double that of the average for January, and next to that upon diseases of the digestive and circulatory organs.

To Investigate the Subject of Immigration. — The National Senate and House Committees on Immigration, have gone to New York and have begun to take evidence as to the character of the present immigration, with a view to formulating a policy which will exclude at least the more undesirable of the enormous number of foreigners who annually come to this country.

An Epidemic of Intestinal Disturbance in Vienna. — Immediately after the recent epidemic of influenza began to decline in Vienna, there appeared a wide-spread epidemic, characterized by fever, acute colic and dysentery, the dejections often containing blood. At first it was attributed to the drinking-water, but this has been analyzed and found to be of normal purity. A difference of opinion exists as to its having any connection with the epidemic of influenza, and time will be necessary before its etiology can be decided.

BOSTON AND NEW ENGLAND.

Deaths in Boston for the Week. — The total number of deaths reported in Boston during the past week was 196 as against 201 the corresponding week last year, making the death-rate for the week 22.2. This is the first week for three months in which the death-rate has not been higher than it was a year ago. The deaths from consumption were 24, pneumonia 32, bronchitis 14; persons over sixty years of age 40. There were 89 cases of scarlet fever reported, with eight deaths.

A Commission to Investigate the Public Institutions of Boston. — The Mayor of Boston has appointed a commission to inspect the public institutions of the city, to examine their condition and present management and to report thereon in writing, together with such recommendations as may seem to them desirable. This commission consists of Mr. Frank Morison, Mr. Thomas P. Ring, Dr. Charles P. Putnam, Dr. Morton Prince, Mrs. William McCarthy, and Miss Annette P. Rogers. The commission has already organized and has made the following announcement: "The duties of the committee are to investigate the system under which the public institutions are conducted, with a view to ascertaining its efficiency or inefficiency, and also to inspect the institutions themselves; to report upon their condition, method of management and needs, with a view to recommending any change in the law, the ordinances, the buildings or the management which in their opinion would be proper or desirable. The institutions are as follows: The almshouses at Charlestown, Long Island and Rainsford Island; the Marcella-Street Home for Neglected Children; the House of Industry, House of Reformation and Truant School on Deer Island; the Lunatic Hospital at South Boston: the buildings at Austin Farm; and the County House of Correction at South Boston. Communications and suggestions for investigation, as well as recommendations, may be sent to Frank Morison, 60 Congress Street. All such communications must be signed and contain the address of the writer."

Committee Hearings of the Massachusetts Legislature. — The Committee on Public Health have reported to the next legislature the subject of establishing free warms baths in cities. The same committee reported it inexpedient to legislate on the order that no stables in cities shall be within 150 feet of dwellings. The Committee on Public Charitable Institutions recommended that the petitioners for an appropriation for the Boston Emergency Hospital have leave to withdraw.

Massachusetts Eye and Ear Infirmary. — The annual report shows that during the past year 11,926 new eye patients and 4,578 new ear patients were treated at the infirmary, an increase of 1,215 over 1890. The number of house patients was 853. The new building for the ear department was completed, and has been occupied since the first of August. The old building is now used entirely for the eye department. A plan and description of the new aural building is given in the report. It was made by remodeling the two houses on Charles Street, next adjoining the infirmary, but separated from it by a passage-way. Except for a bridge connecting the two buildings, the eye and the ear departments are now separate. The ground floor of the new building is devoted to out-patients, above this are three floors containing wards, operating-room and other necessary rooms. The present building is, probably, the most complete hospital especially devoted to diseases of the ear in this country.

Trichinosis. — An epidemic of trichinosis is reported in the town of Coleraine in Franklin County, Mass., in which about thirty persons have been taken ill and two deaths have occurred. These persons were taken ill about February 1st, and their illness is probably due, as usual, to the eating of raw or imperfectly cooked pork. The persons affected are mostly Austrians, Bavarians, and French Canadians, operatives in a mill in Coleraine. With one exception, all the persons attacked are convalescing. The symptoms were general fever, swelling of the face, eyelids and extremities. Perspiration, severe pain in all parts of the body, muscles sore. Contraction of the flexors of legs and arms. This is the most serious outbreak of trichinosis ever reported in the State, and these are the first deaths from this cause since 1870.

Tuberculosis among Cattle in Maine. — The Maine State Veterinary Surgeon, in his annual report, shows that the whole number of cases of tuberculosis reported to the State Cattle Commission during the past year was 117. A great deal is said about tuberculosis in Massachusetts, and the reasons given for quarantine against Massachusetts cattle. Only half as many cattle were destroyed as in the previous year, owing, the commission believe, principally to restrictions to importations from Massachusetts.

NEW YORK.

DR. LEWIS A. SAYRE. — On the 29th of February, the Rev. W. R. Huntington, Rector of Grace Church, sent to Dr. Lewis A. Sayre, who is one of his parishioners, the following graceful little tribute in verse. On that day the veteran surgeon, who was born in leap year, celebrated his eighteenth birthday, being seventy-two years old.

DEAR DOCTOR SAYRE:
And is it true
That Nature set her clock for you
Some four-and-fifty years too slow?
How clever of her to foreknow
That you would keep yourself so young,
So firm of heart, so sound of lung,
That she would never be detected,
Nor you so much as once suspected
Of being older by a day
Than Leap Year records seem to say!
Eighteen, dear friend, or seventy-two,
Which e'er it be, Good luck to you.

MORTALITY FOR THE WEEK. — During the week ending February 27th, the number of deaths reported in the city was 910, an increase of two over the record of the preceding week, and 58 above the average of the corresponding week for the past five years. This mortality represents an annual death-rate of 27.70 per thousand of the estimated population. The deaths from pneumonia were unusually numerous, 170; against 143 for the week preceding and 125 for the average of the corresponding week in the past five years. There were four deaths from typhus fever and three from small-pox. The deaths from influenza, which amounted to 25 during the week ending February 20th, were 20 in number.

TYPHUS FEVER. — Up to March 4th there had been reported 130 cases of typhus fever, with 7 deaths. As a matter of precaution, all the inmates of a tenement-house on East 12th Street occupied by Russian immigrants, where a large number of the cases have developed, have been removed to quarters on North Brothers' Island; and the sanitary authorities are endeavoring to keep any individual known to have come in contact with a typhus fever patient under close observation. A few of the attendants at the fever hospital on North Brothers' Island are said to have contracted the disease, but none have as yet died of it. The joint committee appointed by the Senate and House of Representatives have arrived from Washington and commenced their investigation of the working of the immigration laws and the introduction of typhus fever by the passengers on the *Massilia.*

THE STEAMER "CALIFORNIA," which arrived on March 3d with 456 steerage passengers on board, was detained at quarantine. During the voyage one of the passengers, a Russian Hebrew, developed small-pox, and one case each of scarlet fever and measles also occurred.

DEATH AFTER THREE DOSES OF BROMIDE OF POTASH. — On the morning of March 3d, a bar-tender, who was locked up the night before in a padded cell in the Hoboken City Prison, while suffering from delirium tremens, died after having been given three doses of bromide of potassium by the police sergeant in charge, no physician having been called in to attend the case. If it is true, as stated afterwards by the captain of the Hoboken police, that it is a common thing to give bromide of potassium to delirium tremens patients brought to the station-house, without special medical advice, and that this is done in police stations all over the country, it is certainly high time that such a practice should be put an end to. In this case the City Physician, Dr. Simon, who was hurriedly sent for when too late, expressed the opinion that the man was dangerously ill when taken to the station-house.

SHORT GENERATIONS. — In taking the new census of the State of New York, a baby, three months old, was discovered in the town of Warrensburgh, near Troy, whose mother is not yet fifteen, whose grandmother is thirty-three, and whose great-grandmother is only fifty-four years old.

Miscellany.

NEW BUILDINGS FOR THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.

THE Board of Trustess and the Faculty of the Jefferson Medical College have just completed the purchase of two large lots on Broad Street, giving them a frontage of about 300 feet, and a depth of 150 feet, upon which they will proceed to erect at once a handsome hospital, lecture-hall and laboratory building. The estimated cost of the buildings is $500,000. The hospital will be built not only as a suitable building in which to care for the sick and injured, but also will be provided with a large amphitheatre for clinical lectures. The basement of the hospital will be given over to the various dispensaries, each of which will be provided with large waiting and physicians' rooms as well as rooms for direct teaching of the students. The buildings will be absolutely fireproof and provided with patent sprinklers in case their contents catch fire. By the erection of three commodious buildings, the laboratories where delicate work with the microscope or apparatus is carried on, will be separated from the college hall where didactic lectures are given and so will be free from any jarring produced by the movements of large classes. With the hospital on one side affording clinical facilities and the laboratory on the other side of the college hall for scientific research and training, the college will then be most favorably situated for giving thorough instruction in medicine. Further than this, immediately across the street is the Howard Hospital and on the adjoining corner the Ridgeway Branch of the Philadelphia Free Library, which contains all the scientific works belonging to this wealthy corporation. The new site is even more favorably situated in regard to the centre of the city than the old one at 10th and Sansom Streets. The move has been made necessary by the large number of students who are now being instructed in this institution and because the Faculty desire to keep the school and hospital in the foremost rank of medical education in this country.

The buildings will be ready for occupancy in the session of 1893–94.

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THERAPEUTIC NOTES.

The Treatment of Whooping-cough.[1] — According to the *Bulletin Générale de Thérapeutique*, Galvagno has employed antipyrin combined with resorcin in the following formulæ in the treatment of whooping-cough in children:

℞	Distilled water	℥ iiiss.	
	Resorcin Antipyrin }	āā gr. xv.	
	Hydrochloric acid	gtt. x.	
	Syrup	℥ i.	M.

Or,

℞	Syrup of acacia	℥ iiiss.	
	Resorcin Antipyrin }	āā gr. xv.	
	Syrup	℥ i.	M.

Sig. Of this, three to five dessertspoonfuls are given each day.

Under this treatment the duration of the disease, according to the author, does not exceed twelve days.

Prophylaxis of Influenza. — At a recent meeting of the Académie de Médecine, Ollivier said that he had found cod liver oil a prophylactic against influenza, especially in children. Vallin agreed with the speaker, and recommended also careful antisepsis of the mouth, nostrils and throat.

Europhen: a Substitute for Iodoform.[2] — Europhen is a very fine, yellow powder, having neither a disagreeable nor a strong odor. It is one-fifth as heavy as crude iodoform, while the finely-powdered iodoform is two and a half times heavier than europhen. It is soluble in alcohol, ether, chloroform, benzine, and in fats and oils. Vulpius finds that anthrax bacilli are generally rendered inert by it. Staphylococci were essentially checked in their development, although perhaps not so much as under the influence of iodoform. Pyocyaneus seemed not to be influenced by europhen. Experiments to determine its toxicity indicate that europhen is less poisonous than iodoform. It may be used locally in the form of ointment, powder and gauze. It is recommended when rapid and vigorous granulations are to be excited.

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Correspondence.

A LOW VALUATION OF A CONSULTANT'S SERVICES.

An eminent Boston surgeon was called in consultation to a neighboring city. His services consisted of two journeys to that city and back, the aspiration of a tumor, the examination of the contents by an expert pathologist, and the necessary correspondence. The bill rendered the estate, an estate which was said to be ample, and understood to be so at the time of sending the bill, was for $105. It evoked the following reply from the executor of the patient's will:

"Had I been prostrated to the ground by a thunderbolt from the heavens on a clear summer day, and retained sufficient consciousness to have realized it, the shock would not have been much greater than that which I received as I looked over the bill you sent me against the estate of Mrs. ——.

"I knew that Dr. —— of this city had consulted a Boston physician, and I have recently paid his bill, amounting to $190, which I supposed, of course, included the pay for your services (and which I hope may be the case); and even at that I thought the bill was *tremendous*. I feel that Dr. —— did *very wrong* in entailing such an expense, in calling you, as he had previously told me that Mrs. —— could not possibly live *over* three months; and it seemed to me that if any examination was to be made, you would both have been amply repaid by whatever information you may have gained thereby; and I cannot refrain from saying that I think the call upon you was wholly unnecessary, and, even if it had been, that your charge for your service was *unjust* and *beyond all reason;* for I don't believe there was ever a human being who possessed sufficient knowledge or ability to make his services worth $100 a *week*, while yours was only rendered for a few hours upon a lonely, feeble and emaciated old lady to whom death was not only a relief, but a great blessing; and if I *have* to pay your bill, I shall be obliged to take all the time the court or law allows; as if any more unexpected bills come in, there may not be any "residue" to pay to the comparatively poor young lady who is to receive what remains after the estate is settled.

"You may think my language emphatic, but I can employ no milder terms in giving expression to my feelings and opinions."

RECORD OF MORTALITY

For the Week ending Saturday, February 27, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	910	346	13.09	23.98	3.19	1.32	5.06
Chicago . . .	1,099,859	496	223	19.00	24.60	1.60	5.60	6.20
Philadelphia .	1,046,964	505	151	14.44	12.92	2.47	3.80	6.27
Brooklyn . .	806,343	402	146	17.76	20.16	6.48	.24	6.96
St. Louis . . .	451,770	181	54	12.65	9.35	4.95	.55	1.10
Boston . . .	448,477	197	52	8.67	23.97	1.02	—	5.61
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	148	58	11.83	11.88	—	.66	8.58
Cleveland . .	262,000	102	29	6.86	14.70	—	—	4.90
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	107	50	10.23	20.46	.93	2.79	5.58
Milwaukee . .	240,000	—	—	—	—	—	—	—
Washington .	230,392	112	38	10.68	33.82	—	.89	5.34
Nashville . .	76,168	43	11	2.33	23.30	—	2.33	—
Charleston . .	65,165	31	8	2.94	2.94	—	—	2.94
Portland . . .	36,425	16	3	—	24.00	—	—	—
Worcester . .	84,655	32	—	12.52	18.78	3.13	—	—
Lowell . . .	77,696	45	17	6.66	22.20	—	4.44	—
Fall River . .	74,398	29	15	—	34.50	—	—	—
Cambridge . .	70,028	31	11	9.69	9.69	—	—	3.23
Lynn	55,727	19	5	5.26	22.24	—	5.26	—
Lawrence . .	44,654	—	—	—	—	—	—	—
Springfield . .	44,179	—	—	—	—	—	—	—
New Bedford .	40,733	14	5	—	7.14	—	—	—
Salem	30,801	14	6	—	—	—	—	—
Chelsea . . .	27,909	9	4	—	—	—	—	—
Haverhill . .	27,412	8	3	—	37.50	—	—	—
Taunton . . .	25,445	—	—	—	—	—	—	—
Gloucester . .	24,651	8	2	—	25.00	—	—	—
Newton . . .	24,379	7	0	—	28.56	—	—	—
Malden . . .	23,031	9	1	11.11	22.22	11.11	—	—
Fitchburg . .	22,037	10	3	10.00	—	—	—	—
Waltham . .	18,707	7	0	14.28	—	—	—	—
Pittsfield . .	17,281	4	2	50.00	—	50.00	—	—
Quincy . . .	16,723	3	0	—	—	—	—	—
Northampton .	14,990	1	0	—	—	—	—	—
Newburyport .	13,947	0	0	—	—	—	—	—
Medford . . .	11,079	1	0	—	—	—	—	—
Hyde Park . .	10,193	3	1	—	33.33	—	—	—
Peabody . . .	10,158	1	0	—	—	—	—	—

Deaths reported 3,598: under five years of age 1,244; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 460, acute lung diseases 697, consumption 394, diphtheria and croup

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[1] Therapeutic Gazette.

[2] Therapeutic Gazette, February.

184, scarlet fever 93, typhoid fever 71, diarrhœal diseases 36, erysipelas 21, whooping-cough 15, cerebro-spinal meningitis 14, measles 13, malarial fever 10, small-pox (New York) 3.

From diarrhœal diseases New York 9, St. Louis 8, Brooklyn 5, Chicago, Philadelphia and Cincinnati 4 each, Washington and Lowell 1 each. From erysipelas New York 6, Brooklyn 4, Chicago, Philadelphia and Worcester 2 each, St. Louis, Boston, Cleveland, Washington and Fitchburg 1 each. From whooping-cough Chicago 4, Philadelphia, Boston, Washington and Cambridge 2 each, New York, St. Louis and Pittsburgh 1 each. From cerebro-spinal meningitis Chicago 5, New York 2, Philadelphia, Brooklyn, St. Louis, Boston, Washington, Worcester and Waltham 1 each. From measles New York 10, Brooklyn 3. From malarial fever Brooklyn 4, Chicago 3, New York, Philadelphia and Cleveland 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending February 20th, the death-rate was 21.1. Deaths reported 4,125: acute diseases of the respiratory organs (London) 450, whooping-cough 177, measles 86, diarrhœa 48, diphtheria 29, scarlet fever 23, fever 18, small-pox (Liverpool and Oldham 1 each) 2.

The death-rates ranged from 13.0 in Derby to 28.2 in Preston; Birmingham 22.0, Bradford 15.5, Croydon 18.2, Hull 19.4, Leeds 17.4, Liverpool 25.1, London 20.7, Manchester 23.6, Nottingham 23.2, Portsmouth 22.0, Sunderland 15.7, Wolverhampton 16.9.

METEOROLOGICAL RECORD,

For the week ending February 27, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...21	30.50	34	35	33	95	95	95	N.	N.	12	10	O.	R.	.01
M..22	30.54	37	40	34	91	91	91	N.	N.	12	8	O.	C.	T.
T..23	30.54	34	38	31	90	90	90	N.	N.E.	11	17	N.	O.	.06
W.24	30.48	36	38	33	91	86	88	N.E.	N.E.	11	10	O.	O.	.01
T..25	30.28	36	38	33	95	100	98	N.	E.	5	4	R.	G.	T.
F..26	30.28	38	42	35	100	92	96	E.	N.E.	5	5	G.	C.	
S..27	30.70	21	23	19	73	73	73	N.E.	N.E.	26	26	O.	O.	T.
☞	30.47	31	36	31	91	90	90			12	11			.01

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 5, 1892.

Geo. R. Brush, medical inspector, ordered to Navy Yard, Brooklyn, N. Y.

Edw. Kershner, medical inspector, from Navy Yard, New York, and to U. S. S. "San Francisco."

J. H. Clark, medical inspector, from the U. S. S. "San Francisco," and ordered home.

A. L. Gihon, medical director, detached from Naval Hospital, and to special duty New York, attending officers of the Navy and Marine Corps.

W. K. Scofield, medical director, detached from special duty New York, attending officers of Navy and Marine Corps and wait orders.

E. S. Bogert, medical director, detached from Medical Examining Board and to Naval Hospital, Brooklyn, N. Y.

C. M. De Valin, assistant surgeon, to Naval Hospital, Norfolk, Va.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING FEBRUARY 27, 1892.

Purviance, George, surgeon. Detailed as chairman, Board of Examiners. February 20, 1892.

Hamilton, J. B., surgeon. Detailed for special duty. February 18, 1892.

Stoner, G. W., surgeon. Detailed as member, Board of Examiners. February 20, 1892.

Irwin, Fairfax, surgeon. Ordered to Norfolk, Va., for temporary duty. February 16, 1892. Granted leave of absence for seven days. February 24, 1892.

Carter, H. R., surgeon. Detailed as recorder, Board of Examiners. February 20, 1892.

Wheeler, W. A. passed assistant surgeon. Ordered to examination for promotion. February 16, 1892.

Vaughan, G. T., passed assistant surgeon. Detailed as executive officer, Supervising Surgeon-General's Office. February 27, 1892.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, March 14, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. G. B. Shattuck, "Pneumonia in Boston during the Recent Epidemic of Influenza." Dr. J. W. Farlow, "A Case of Sudden Death in a Rubber Factory: Inquiry into the Effects of the Inhalation of Naphtha."

G. G. Sears, M.D., *Secretary*.

The American Medical Association will hold its fortieth annual session at Detroit, Mich., June 7, 8, 9 and 10, 1892. Dr. J. S. Cain, of Nashville, Tenn., will deliver the Address in General Medicine; Dr. John B. Hamilton, of Chicago, Ill., the Address in General Surgery; Dr. Charles A. Lindsley, of New Haven, Conn., the Address in State Medicine. Dr. Henry A. Walker, of East Detroit, is the Chairman of the Committee of Arrangements.

APPOINTMENT.

Dr. E. M. Buckingham, has been appointed Physician to the Children's Hospital, Boston.

RECENT DEATHS.

Stephen Cushing, M.D., M.M.S.S., died in Boston, February 1st, aged fifty. During the war he served as medical cadet in the army and later as assistant surgeon in the navy. He graduated from the Harvard Medical School in 1866.

Heinrich Rosenthal, M.D., editor of the *Allgemeine Medicinische Central Zeitung*, died February 7th, in Berlin, aged fifty-eight.

Samuel G. Jarvis, M.D., of Claremont, N. H., died March 5th, aged seventy-five. He graduated from Jefferson Medical College in 1838, and since 1840 has practised in Claremont, representing the town in the legislature in 1875 and 1876.

BOOKS AND PAMPHLETS RECEIVED.

Treatment of Laryngeal Phthisis. Robert Levy, M.D., Denver, Col. Reprint. 1891.

The Therapeutic Aspect of Some Ovarian Disorders. By Edward W. Jenks, M.D., LL.D., Detroit, Mich. Reprint. 1891.

Some Unusual Fractures of the Leg. By Fred Jenner Hodges B Sc., M.D., Lecturer on Surgery, Chicago Polyclinic. Reprint. 1891.

Observation and Experiment in Phthisis. A Reply to Professor Tyndall. By Thomas J. Mays, M.D., Philadelphia. Reprint. 1892.

Sleep, Insomnia and Hypnotics By Germain Sée, M.D. Translated by E. P. Hurd, M.D. Detroit: George S. Davis. 1891.

Tuberculin: The Value and Limitation of its Use in Consumption. By Charles Denison, A.M., M.D., of Denver, Col. Reprint. 1891.

Report of Committee on Disposal of Waste and Garbages, Presented at the Nineteenth Annual Meeting of the American Public Health Association.

Empiricism; Rational Practice; Practice Under Guidance of Law. A Lecture to Medical Students. By Charles S. Mack, M.D., Ann Arbor, Mich. Reprint. 1892.

Considerations Pathogéniques sur l'Hémospermie d'Origine non Inflammatoire. Par Le Dr. R. Jamin, Lauréat de la Faculté de medecine. Paris. Reprint. 1891.

Trendelenburg's Posture in Gynecology. Atresiæ of the Genital Tract Total Extirpation versus Leaving a Stump in Operation for Uterine Fibro-Myomata. By Florian Krug, M.D., New York. Reprints. 1891-92.

Fissural Diagrams. The Fundamental Principles of Anatomical Nomenclature. American Reports upon Anatomical Nomenclature, 1889-90. The Morphological Importance of the Membranous or other Thin Portions of the Parieties of the Encephalic Cavities. Burt G. Wilder, M.D., Professor in Cornell University. Reprints. 1891.

Lecture.

ON THE MECHANISM OF THE MAMMALIAN LIMB.[1]

BY HARRISON ALLEN, M.D.,
Professor of Comparative Anatomy and Zoölogy in the University of Pennsylvania, etc.

In all animals the limbs are adapted for locomotion in one of three ways, and each of these is in fixed relation to the plane of support: the first by which movement is made through air; the second by which it is made through water; and the third by which it is made on the ground. Observe, we speak of motion in air, in water, and on the ground. Flying and swimming mammals are surrounded by the medium through which they move, whereas in terrestrial mammals the limb is *on* the ground. The few exceptions that can be made to this statement will not interfere with its truth in general. Again the size of the limb (notably the foot) in its proportion to that of the body decreases as we pass from the flying to the walking animal.[2] Thus the wing of the bat in proportion to that of the body is immensely larger than are the paddles and flukes of a whale or seal, and both of these again, are larger than the foot of any of the terrestrial animals. In a word, the size of the limb disposed for progression is in direct ratio to the density of the medium through or on which the animal moves.

Let us examine the skeleton of the dog with reference to the relation which the limbs have to each other, and to the influence which is exerted upon them by the weight of the head and spine. We notice in the first place that the anterior extremity is supported entirely by muscle; for we do not acknowledge that limbs with clavicles are better adapted for support than are those without these bones, since when the extremity is fixed at a small movable point to the breast-bone it gives little or no assistance to the terrestrial movement. Indeed, the clavicle does not appear until the limb is adapted for kinds of motion with which terrestrial planes of support have nothing to do. Now, in order that the anterior limb be firmly supported, its motions precisely defined, its strength as well as its mobility rigidly preserved, these muscles must be of enormous size and power. We find that the lines of origin of this muscle-mass are secured from a large region, namely, the back of the skull, the side of the chest, the sternum, the vertebral aponeurosis and even, in some forms, the hip-bones. All the muscles which thus arise are in the forms of sheets, either simple or folded once, twice or three times. Often from a sheet we may have ribbons evolved, or from a second sheet bandage-like layers, but never thong-like or cable-like bands. These sheets are wonderfully rich in nerves, and extend to, and partially imbed, the shoulder-blade so that no part save that which lies directly at the shoulder-joint is free. They extend down along the arm at varying distances, always reaching as far as the humerus and not infrequently the wrist.

How different is everything in the hind limb! The hip-bone is fixed to the line of the spine; and the limb, not being supported by muscle-masses, has in every part an entirely different aspect from that of the front limb, and the muscles which do arise from the line of the spine are confined to a surface scarcely any larger than that of the hip-bone, and act, of course, not on the part which is homologous to the scapula, but on the lower limb-segments. They show slight disposition to extend forward (for example, as in the psoas), and scarcely any to extend backward along the caudal vertebræ, yet they preserve the same tendency, as do the fleshy masses of the anterior extremity, to send bundles down (that is, distally) to reach in most forms to points as far as the knee or even the ankle. Since the nerves are more numerous in the sheet than the spindle forms of muscles, it follows that the nerves going to the posterior extremity are relatively fewer than those going to the anterior.

Let us retrace our steps a moment to consider the two limbs from an entirely different point of view than the one above accepted. Assuming that vertebrate life found its first expression in aquatic animals, and remembering that the most important feature in the life of aquatic animals is the means by which the mechanism of respiration is adapted to the medium of water, it follows that problems of the mechanism of the limb in aquatic creatures will be essentially different from air-breathing forms inasmuch as they all possess respiratory organs which are fixed to the sides of the neck, or at least to the region back of the head, since in some types, as the fishes, there is no true neck. It will be at once seen, accepting as correct that an anterior extremity demands for high degrees of efficiency an extended surface for the origin of its muscles, that much of such surface is lost in gill-bearing vertebrates, and it is probably true that this accounts for the fact that no such forms possess large anterior extremities. Take, for example, the proteus-type of waternewt, which is the best expression known of this phase of development. We have here the gill-arches in front of the small anterior limb, and the chief motion is obtained by the action of the long flexible tail rather than by the limbs. In the frog, the gill-arches indeed disappear, yet, even here, the anterior limb remains of small size.

In mammals the relation existing between the motion of the anterior extremity and the respiratory act must be remembered. It is not accidental, I am sure, that such an extremity is placed at the side of the front of the thorax. The act of breathing is assisted by many of the muscles which move the anterior extremity whereas none of the posterior have any connection with respiration. The posterior extremity, on the other hand, is held to the line of the spine by a fixed pelvic girdle. The exceptions to this rule are so unimportant that they cannot be separately treated. Not only is each hip-bone fixed to the side of the trunk, but is also joined to its fellow at the pubis (bats often excepted, and seals always), and the relations of both bones are held to be, not with respiration, but to the functions of the organs of the abdomen, especially to the rectum and the organs of generation.

We have seen that the shape of the limb is in relation to the density of the medium through which it is used, and now we will notice that in terrestrial forms the motions of the limbs hold an equally exact relation to the centre of gravity of the body. In the most rapid motion of the terrestrial type the front limb can retain its plane of support on the ground until the trunk has passed along so far as to bring the centre of gravity in a line which will pass vertically upward through the foot. In a subsequent attitude of support, the hind limb can reach forward as far as or even beyond this line.

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[1] A Lecture delivered at the Academy of Natural Science of Philadelphia, February 19th, 1892.

[2] It is curious that we have one phrase to express motion through the water which is the act of swimming; one phrase to express motion through the air, which is the act of flying; but no one phrase to express motion on the ground; the last named motion being included in such terms as the acts of walking, running, leaping, etc.

It is a remarkable circumstance that both in the anterior and posterior feet, the ground is reached by the outer border of the foot, and not as one would suppose at first sight, by the foot being brought down in a horizontal position. In all quadrupeds the outer border of the leg and the outer border of the foot receives distinct nerves. In the fore limb it is the ulnar, in the hind limb it is the musculo-cutaneous and short saphenous nerves. The outer border is further often adorned with fringes of hair, or other appendages either in the form of scutes, warts, or of special folds of skin. In a word, the outer border of the foot and leg, taken as a whole, is apt to be distinct from the rest of the body, not only in the way it is used in progression, but in its domination of nutritive processes.

The cycle of movement of the foot in the act of walking is something as follows: the foot in the first stage (that is, before being brought to the ground) is in a position midway between pronation and supination. The outer border as it reaches the ground is held in this position but for an instant, since the body surging forward by the aid of the other three legs, soon brings the main lines of weight upon the foot, which now rests on its widest surface of contact. The impact is somewhat gradually transferred to the inner border, along which, when the main body weight is beyond, the foot is lifted from the ground.

It is noteworthy that when used in any other way except for support on the ground (I mean by this firm contact against a resisting terrestrial surface), limbs of all mammals resemble one another; for example, forms so distinct in systems of classification as the sloth, the bat, the seal and the duck-mole are associated in one respect, namely, by the absence or diminution of impact of the several parts of the limbs. The characters of the bones of the arm and thigh, since they do not support the body on the ground, are almost exactly alike in the sloth and the bat. In like manner, the general outline of the scapula in man, the ape, the kangaroo and the jumping-mouse, conform to a single plan (that is to say, the supra-spinatus fossa is narrower than the infra-spinatus), since in none of these animals is the anterior extremity used for support. Likenesses which are due to strain, as in the bat and sloth, are recognizable; as well as those due to adaptation of the anterior extremity to prehension, as seen in men and the apes; or those due to adaptation to the swimming habit in creatures so far apart as the duck-mole and the seal; but all these, nevertheless, may be associated by a merely negative character, namely, the absence of impact.

When walking with a closed umbrella, using it as a cane, one brings the ferrule down on the ground at every step. A leg of a living animal periodically adjusted to the ground like the closed umbrella, is said to be modified by *impact* In a word, it is impact that takes place in the umbrella every time it is brought to the ground. When the umbrella is held in mid-air and opened, the movement is independent of impact. An animal using its anterior extremity in a similar manner (as in a bat unfolding its wings for flight), the several parts are said to undergo *strain*. The difference between impact and strain in a general way implies a difference in the method of progression, that is to say, the difference between strictly locomotor and prehensile use.

I will now attempt to make an application of the above stated facts, which I fear some will think radical. I allude to the study of the causes of certain fractures in the human body. May I venture the opinion that without an understanding of the mechanism of the limb in the lower animals, the etiology of lesions of the limb in man cannot be explained? The following is an example of a lesion through strain: A sailor falling from the deck of a vessel to the bottom of an open hold, catches at a rope for support; he sustains himself but for an instant; he feels a sharp pain in the region of the shoulder; he lets go his grip and again falls. Examination shows that he has fractured his shoulder-blade.[3]

Now the man has done exactly what a monkey will do many times a day in the forest, as he springs from swaying vine to pendant bough; but the animal incurs no risk to the shoulder-blade or to any other bone. The man has attempted something, in an excursive way, to which his structure appears to be adapted, but in the attempt he fails and incurs injury. Unless an analysis of such a lesion can be reasonably undertaken by comparing the manner in which this act can be safely performed with that which results in disaster,— in a word, of a comparison of the parts in a monkey and in man,— no exact clue to the fracture can be vouchsafed. Let me also invite your attention to a lesion by impact. Sir Charles Bell has drawn the figure of a man on a stumbling horse; the man is in the act of being thrown forward. The position of the anterior limb of the horse and that of the arm of the man are the same. In an instant afterward both limbs will come to the ground, the horse's to enter into the second stage of the foot's normal cycle, the man's to break. In placing his anterior extremity forward as though it was well adapted to move on the ground (though it has long since been adapted for an entirely different class of work), he applies it for a purpose to which it is in reality unfitted, and disaster ensues.

I have been interested in studying the position of the hand in fracture, at the lower end of the forearm. The text-books teach that the hand comes to the ground directly in the middle, or on the thumb side. I have concluded, when the body falls prone, that the hand comes down on the little finger side as is normally the case in the lower animals. An examination of the specimens preserved in museums has convinced me that this assumption is just as capable of explaining the deformation as is any other, and is sustained in addition by an examination of its literature. A short time ago I stumbled and fell. I instinctively threw the right hand forward to break the force of the fall. I found when I examined the parts that my hand was bruised along the little finger side, and the clothing soiled on the the corresponding part of the forearm. In the explanation of a lesion, created as it is by an error of impact, the line of reasoning essential to it is quite different from what is met with in strain; but the problem suggested is like it in one regard, that it is profitable to the study of the manner by which the parts of a limb adapted for strain are easily disadjusted when called upon to perform the duties of impact, and also like it in another way that it can be best explained by a knowledge of comparative anatomy.

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[3] Dr. Joseph Leidy: Proceedings of the Philadelphia County Medical Society, 1891, p. 73

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Original Articles.

ORIGIN OF THE RED BLOOD-CORPUSCLES.[1]

BY CHARLES LOUIS MIX, A.M.

IN the life-history of any mammal there are to be found two sorts of red blood-corpuscles: (1) the nucleated, found during early embryonic life; (2) the non-nucleated, found during later embryonic and throughout extra-uterine life. It is therefore convenient in a consideration of the origin of red blood-corpuscles to divide the subject into two portions, the origin of red corpuscles in the embryo, and the origin during extra-uterine life. The first division naturally falls into two minor ones, the origin of the corpuscles (1) during the early stages of the embryo, (2) during later fœtal life.

I. ORIGIN OF THE RED BLOOD-CORPUSCLES OF THE EMBRYO.

A. DURING THE FIRST STAGES OF THE EMBRYO.

In the very young embryo red corpuscles are nucleated cells, at first possessing a very thin layer of protoplasm often overlooked by investigators, but which later develop more protoplasm and become impregnated with hæmoglobin, thus forming true embryonic nucleated red corpuscles. Embryologists differ both as to the place and method of origin, one class advocating the mesenchyma of the body of the embryo, another class the *area pellucida* and *area opaca*, especially the latter. Of those who belong to the first class the theories of Reichert, Ziegler and Wenckebach may be mentioned.

Reichert[2] believed that the first blood-vessel to arise was the heart, which developed from a mass of cells of which the central ones became embryonic nucleated red corpuscles, and the peripheral ones the endothelial lining of the heart. According to this theory, therefore, the blood is mesodermic in origin.

Ziegler[8] thought that the cavities of the blood-vessels were developed from gaps in the mesenchymatous tissue. "The systems of blood and lymph-vessels," says Ziegler, "arise from remains of the body-cavity (gaps between the primary germ-layers), which in the universal extension of the mesenchyma remain as vessels, lacunæ or interstices, and which are ultimately surrounded and taken up by it." The formed elements of the blood, especially the embyonic nucleated red corpuscles, arise in various places in the lacunæ or gaps by rapid proliferation of the mesenchyma cells there present.

Wenckebach[4] found that in the case of *Perca fluviatilis* the blood-corpuscles arose from a compact mass of cells, the "intermediary cell-mass," found under the chorda; and he goes on to say that "the cells are gradually loosened by the blood-stream and carried along by it," for he believed that heart and plasma were formed before there were any corpuscles. Later, while working upon another embryo, he discovered the origin of the intermediary cell-mass: it arises from cells which grow in between the alimentary canal and notochord from the mesoblastic somites.

In a late paper Ziegler[5] has described the intermediary cell-mass, saying that the central cells become the first blood-corpuscles and the peripheral ones go to form the walls of the first veins. He also returns to Reichert's old view, for he says that some of the first embryonic blood-corpuscles are also formed in the heart and aorta.

Of those who claim that the *area opaca* is the true source of embryonic nucleated red corpuscles, the theories of Kölliker, Klein, Foster and Balfour, His and Rückert deserve notice.

Kölliker's theory, which for convenience may be called the solid-cord-formation theory, is really an extension of Reichert's and Remak's. Reichert believed that the first embryonic corpuscles were formed in the region of the heart; Remak disagreed with him and declared that they were formed in the *area opaca* or *sanguinea*, as he would name it, since its function is preëminently blood-formation. Kölliker,[6] in his "Embryology," says that both of these authors are correct, and that furthermore, the first corpuscles may arise in the *area pellucida*, wherever, in fact, new blood-vessels develop. According to him the mesoblast cells found in the *area opaca* between the two primary germ-layers arrange themselves in cylindrical or irregularly limited cords which form a network, in the meshes of which there are groups of other cells forming the "Substanz-inseln" or "connective-tissue islands." At the beginning of the second day in the chick the cords become better marked, owing to the formation in their interior of a hollow limited by distinct walls. The walls develop from the superficial cells of the cords, and form the endothelial lining of the vessels; the hollow is produced by a fluid secreted by surrounding cells, which pierces the walls of the cord, forming the blood-plasma. At the points where the fluid enters the cord the cells composing the wall are pushed aside in heaps called "Blut-inseln" or blood-islands. The cells of the latter at once begin to acquire hæmoglobin, and being very loosely bound together they separate easily and fall into the blood-plasma, becoming nucleated red corpuscles.[7]

Klein's[8] theory may be styled the vacuole theory. According to him, the first blood-vessels are formed from certain mesoblast cells of the *area opaca* in which vacuoles appear. The vacuole of each cell increases rapidly in size, pushing the nucleus to one side, and crowding out the protoplasm until it is a peripheral film in which nuclei begin to appear. These nuclei then becoming differentiated into protoplasmic cells, form a wall about the vacuole which may now be regarded as the lumen of a blood-vessel. From time to time cells are budded off from the inner side of the wall, and falling into the lumen become by the acquisition of hæmoglobin embryonic nucleated red corpuscles. From the outer side of the wall nucleated processes grow out and anastomose with similar processes from other cells. By the formation of vacuoles the processes become hollow, thus forming a capillary network filled with blood. The plasma is secreted by the wall-cells.[9]

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[1] Read at a physiological conference in the Harvard Medical School, January 4, 1892.

[2] Reichert: Beobachtungen über die ersten Blutgefässe und deren Bildung so wie über die Bewegung des Blutes bei Fischembryonen. 1857. Quoted from Feuerstack. Die Entwicklung der rothen Blutkörperchen, Zeitschr. f. wissen. Zool. (Siebold and Kölliker), Bd. 38, page 136.

[3] Quoted by O. Hertwig: Lehrbuch der Entwicklungsgeschichte. Jena, 1890, p. 149.

[4] K. F. Wenckebach: Beiträge zur Entwicklungsgeschichte der Knochenfische. Archiv. f. mik. Anat., Bd. 28, page 146. Die Herkunft der Blutkörperchen.

[5] H. E. Ziegler: Die Entstehung des Blutes bei Knochenfischembryonen. V Abth. Die Hunkunft der Blutkorperchen. Archiv. f. mikr. Anat., Bd. 30, p. 643. 1887.

[6] A. Kolliker: Entwicklungsgeschichte des Menschen und der hoheren Thiere. Leipzig, 1861, p. 89.

[7] O. Hertwig: Entwicklungsgeschichte, Jena, 1890, pp. 151-153.

[8] Klein: Sitzungsberichte d. kais. Akad. d. Wissen. Bd. 63, 1871.

Foster and Balfour [10] teach that certain mesoblastic cells of the *area opaca* called "angioblasts" develop long protoplasmic processes which unite with one another, the nucleus of the original cell splitting into a number of nuclei which lie scattered in the undifferentiated protoplasm. At the nodes nuclei accumulate, and their surrounding protoplasm becomes infiltrated with hæmoglobin. The processes then become hollow, some of the central nuclei and their undifferentiated protoplasm forming embryonic nucleated red corpuscles,[11] the peripheral ones forming the endothelial cells, the latter secreting the plasma. "The formation of the corpuscles does not proceed equally rapidly nor to the same extent in all parts of the blastoderm. By far the greater part are formed in the vascular area, but some arise in the pellucid area, especially in the hinder part." Foster and Balfour agree with Kölliker and Reichert, who claim that corpuscles arise in the heart, in that they look upon this organ as a "gigantic nodal point."

His [12] declared that the first blood-vessels develop from the white-yolk or parablast, that they then spread from the *area opaca* and *pellucida* into the body of the embryo, being filled with a clear fluid before a single corpuscle has been formed. Attached at various places upon the inner surface of the walls of the vessels are groups of cells, the blood-islands. These next break away from their attachment and fall into the circulating fluid.

Rückert,[13] Gensch,[14] and others have shown that, in the Selachians, the merocytes or parablast nuclei found at the edge of the vascular area develop protoplasm about themselves, and then divide into groups of nucleated cells, thus forming the blood-islands, which then break up into blood-corpuscles. If this method of formation be true, blood is entodermic in origin.

The five theories just given easily reduce to two, the first three forming one well-defined theory, the last two, another. The solid cords of cells described by Kölliker differ from the protoplasmic processes of Foster and Balfour in only one respect: the cells of the former have a distinct outline, the cells of the latter are undifferentiated, consisting in their entirety of a mass of protoplasm containing nuclei. From what is known of embryonic connective tissue it seems probable that the observations of Foster and Balfour are correct, embryonic connective tissue cells showing scarcely any traces of walls. Both Kölliker's cord and Foster's and Balfour's protoplasmic process become hollow in much the same way. Klein's formation of vacuoles, as Foster and Balfour remark, is simply another way of explaining the formation of the central hollow. From all evidence, therefore, the Foster-Balfour theory is undoubtedly a true one.

The theory of His and Rückert is in some cases probably true, particularly in the case of the cartilaginous fishes where there is a close agreement among all writers. Notwithstanding this fact, it needs more confirmation before it can become generally accepted.

All who have written upon the formation of embryonic corpuscles agree that they possess the power of dividing by indirect division, thus forming new corpuscles. We have, therefore, in the early embryo, three well-authenticated sources of embryonic nucleated red corpuscles, (1) from the mesenchymatous cells of the body according to Reichert and Kölliker, (2) from the cells of the mesoblast in the *area opaca* and *pellucida* according to Foster and Balfour, and (3) from one another by indirect cell division. There may, in some cases, be a fourth source, the merocytes or parablast nuclei.

B. IN LATER FŒTAL LIFE.

(1) *Nucleated Corpuscles.*

In the later embryonic stages the corpuscles are of two sorts, nucleated and non-nucleated. As to place of origin it is commonly agreed that they arise in the following sequence: (1) From the liver, (2) from the spleen, (3) from the marrow. Kölliker, Neumann, Foa and Salvioli, and Dr. Howell all give different theories as to the method of origin.

Kölliker,[15] as early as 1846, held that in later fœtal life the liver was the first organ to form red blood-corpuscles; and in this he was right, but in his explanation of the method, probably wrong. He taught that certain white nucleated corpuscles found in the liver become impregnated with hæmoglobin, thus forming red nucleated corpuscles. The latter then entered the embryonic circulation and at a later period lost their nuclei by absorption preceded by fragmentation, thus developing into non-nucleated red corpuscles from the nucleated form. Kölliker thought that the liver, after a time, began to lose its hæmatopoietic function, this being assumed by the spleen.

The idea that the liver of the embryo is a source of corpuscles was not a new one when Kölliker wrote. In 1840, Reichert had, by a lucky guess, referred to it the function of forming blood-corpuscles, and E. H. Weber had also written upon the subject. To Kölliker, however, the credit is due of being the first to give any credible description of the process.

Neumann, who believed in the hæmatopoietic function of the spleen when he first wrote upon the origin of blood-corpuscles in 1868,[16] afterwards concluded that there is no evidence that the spleen is concerned in the formation of the embryonic nucleated corpuscles,[17] thus differing from all other writers upon the subject, but he believed very firmly in the blood-forming function of the liver. In his study of that organ he found two elements, which he thought form red nucleated corpuscles, certain large liver cells and certain free nuclei. He implies that the latter assume a film of constantly increasing protoplasm, and become red nucleated corpuscles by being impregnated with hæmoglobin. He describes certain liver-cells in which a vacuole forms, constantly increasing in size. In these vacuolated cells "there arise directly in the protoplasm or in a previously developed vacuole, new and peculiar nuclei by a free-formation process; and, by the appearance of a homogeneous yellow substance in the region about the nuclei, they give rise to the nucleated colored blood-corpuscles. These then undergo their further metamorphoses outside the mother-cell."[18] It will be noticed that the nuclei of the blood-corpuscles do not arise from the nuclei of the liver-cells as Dr. Howell implies.[19] In the formation of the vacuole it may be seen that this theory is very similar to Klein's.

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[9] Quoted from Foster and Balfour: Elements of Embryology.

[10] Foster and Balfour: Elements of Embryology, 1st edition, London, 1874; 2d edition, London, 1883.

[11] As Foster and Balfour state the theory, the nuclei become the corpuscles. It has been shown, however, that the nuclei in question are surrounded by a very thin layer of protoplasm. Cf. C.S. Minot, Anat. Anz., Bd. v, 1890, pp. 601-604.

[12] Quoted from Foster and Balfour. Elements of Embryology.

[13] J. Rückert: Quoted from O. Hertwig. Entwicklungsgeschichte, p. 151.

[14] Gensch: Die Blutbildung auf dem Dottersack bei Knochenfischen. Archiv. f. mikr. Anat., Bd. xix, p. 144, 1881.

[15] A. Kolliker: Ueber die Blutkorperchen eines menschlichen Embryo und die Entwicklung der rothen Blutkorperchen bei Säugethieren. Zeitschrift f. rationelle Medicin., Bd. iv, p. 112, 1846.

[16] E. Neumann. Ueber die Bedeutung des Knochenmarkes für die Blutbildung, Archiv. der Heilkunde, Bd. x, pp. 68–102.

[17] E. Neumann: Neue Beiträge zur Kenntniss der Blutbildung, Archiv. der Heilkunde, Bd. xv, pp. 441–476.

Foa and Salvioli[20] describe giant-cells in the fœtal liver, spleen, marrow and lymphatic ganglia, which they name "hæmatoblasts," and which split up into masses of smaller "hyaline cells" each one of which becomes charged with hæmoglobin and becomes transformed into a red nucleated corpuscle. This theory will be mentioned again.

Dr. Howell[21] believes that certain cells of the liver, lying between the hepatic cylinders, arrange themselves in solid cords which form corpuscles and vessel-walls in accordance with the solid-cord-formation theory already stated. He further found a case in which corpuscles seemed to be forming in the interior of a vein which was developing in the muscular substance of the posterior limb of an embryo of a kitten, and he therefore regards as a fourth source of embryonic nucleated red corpuscles, any region where developing blood-vessels are found. Howell believes firmly that there is but one method of blood-formation in the embryo, namely, by the solid-cord-formation theory. He says nothing about the hæmatopoietic function of the lymphatic system in the fœtus.

(2) *Non-nucleated Corpuscles.*

There are three theories for the formation of the non-nucleated red corpuscles of later fœtal life, of which the last two now to be given are well established; the first is very much disputed.

As long ago as 1846, Kölliker said that the nucleated embryonic red corpuscles become non-nucleated ones simply by the loss of the nuclei which disappeared by absorption preceded by fragmentation; and as late as 1890, Dr. Howell said that the nucleated corpuscles "under normal conditions lose their nuclei and become changed to the biconcave red corpuscles of the circulating blood, the transition, in the young embryo, taking place in the blood itself."

Unfortunately for the simplicity of this theory other investigators flatly contradict it, and Dr. Minot, who has tested its truth, finds no evidence in any of his numerous preparations that a nucleated embryonic corpuscle can become a non-nucleated one.[22] He is the first to point out the very obvious fact that the two structures are entirely independent of each other, never being inter-transformable. Dr. Minot also says that the free nuclei, which Balfour states constitute the beginnings of the nucleated corpuscles, are not free nuclei, but are surrounded by a very thin layer of protoplasm. This stage soon gives place to a second, where the nucleus is more granular and the protoplasm increased in amount. A third stage follows, where the nucleus becomes smaller and stains uniformly. These changes may be said to represent the phylogenetic changes in the genesis of the mammalian red blood-corpuscle, the second stage corresponding to that of Ichthyopsida, and the third to that of Sauropsida.[23]

Schäfer's[24] vaso-formative theory is firmly established, having been confirmed by many different observers, and by Kuborn[25] very recently. The process takes place in the vaso-formative cells discovered by Ranvier.[26] Unfortunately it is not a source of very many corpuscles, for it is a method lasting probably until only a few days after birth. A part of the protoplasm of connective tissue-cells, and also, according to Kuborn, of certain cells of the fœtal liver, becomes impregnated with hæmoglobin, condensing after a time in round globules about the volume of a corpuscle. The cells then elongate into anastomosing processes, which subsequently become hollow, containing a fluid in their interior. The hollow spaces of adjacent cells then coalesce, forming a system of capillaries; the fluid becomes the blood-plasma, and the protoplasmic globules become the non-nucleated corpuscles.

The liver, spleen and marrow are all supposed, with excellent reasons, to give rise to non-nucleated embryonic corpuscles by a method to be described in the third division of this paper.

II. Formation of Red Blood-Corpuscles during Extra-Uterine Life.

During extra-uterine life the corpuscles of the blood are all non-nucleated biconcave discs; they are not cells, but plastids. In some cases, as in the pig and the opossum, red nucleated corpuscles or true cells have been found under normal conditions, but generally their presence in the blood is due to some pathological disturbance.

The importance of the rapid formation of red corpuscles in adult life is shown by a simple computation. Suppose during a severe menstruation a loss of blood of 150 gms., or about 150 c. cm., the specific gravity of blood being 1,055. This loss is restored in twenty-eight or thirty days, so that in one day 5 c. cm., or 5,000 c. mm., of blood must be formed, or 208 c. mm. per hour and 3½ c. mm. per minute. That is, 19,000,000 corpuscles are formed every minute and 300,000 every second of life for some years. This estimate does not include the replacement of the daily loss, which may, perhaps, represent another very large amount.

There have been many theories to account for the formation of corpuscles in adult life, but I shall give but five, of which only the last rests upon any sure foundation:

(1) As early as 1846 Wharton Jones,[27] influenced by a fancied resemblance in size and superficial appearance between the nuclei of the white corpuscles and the red corpuscles themselves, thought that the latter were to be regarded as simply the extruded nuclei of the former. There was no histological evidence to support this view, so that it never received any credence.

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[18] E. Neumann: Archiv. d. Heilkunde, Bd. xv, p. 470.

[19] W. H. Howell: The Life History of the Formed Elements of the Blood, especially the Red Blood-Corpuscles. Journal of Morphology, vol. iv, p. 65.

[20] Foa and Salvioli: Sull' origine dei globuli rossi del sangue, Arch. p. f. l. Scienz. medic., 1880, vol. iv, p. 1.

[21] W. H. Howell: Op. cit., pp. 66–68.

[22] C. S. Minot: Zur Morphologie der Blutkörperchen. Anat. Anzeiger, 1890, Bd. v, p. 601.

[23] Since non-nucleated red corpuscles are not cells, and since they are in no way related to embryonic nucleated red corpuscles, Dr. Minot proposes to call them "blood-plastids." The term is a very convenient one, but probably the old terminology is too firmly established to be thus replaced.

[24] E. A. Schäfer: Quain's Anatomy. Tenth edition. London, 1891, vol. i, part 11, p. 218.

[25] Kuborn: Anat. Anzeiger, Bd. v, 1890.

[26] Ranvier: Arch. de Phys. Norm. et Path., 1874, p. 429; 1875, p. 1.

[27] Wharton Jones: On the Blood-Corpuscle Considered in its Different Phases of Development. Philosophical Transactions, 1846, p. 63.

(2) Previous to 1868, the date of Neumann's first paper on the origin of the blood, there was a general belief that red corpuscles were formed from the white by the loss of the nucleus and the acquisition of hæmoglobin during circulation. Even Neumann and Bizzozero, following Kölliker and other preceding investigators, said in their first papers that it was from leucocytes that red corpuscles developed. Later they both retracted their assertions since they could not find any transitional forms, and to-day the time-honored theory is completely abandoned.

(3) Arndt,[28] who wrote much more recently, thought that in cases of strong anæmia portions of red corpuscles broke off and developed into new ones. Such a method of origin and growth seems directly opposed to the first principles of biology, and consequently the theory has never been accepted.

(4) Hayem,[29] who may be called the rediscoverer of the blood-plates which he named "hæmatoblasts," regarded them as young red globules incompletely developed, originating from the protoplasmic portion of the white, colorless corpuscles of the blood. Since "hæmatoblasts" are always found in increased numbers after direct loss of blood as in hæmorrhages, or after indirect as in fevers, or in chronic anæmia, he thought he had a sufficient argument to show that they are young corpuscles in process of development. Hayem [30] also finds another origin of his hæmatoblasts in the interior of the vaso-formative cells of Ranvier and Schäfer. Neumann [31] declares that Hayem has described under the name of hæmatoblasts two entirely distinct structures, (1) colored hæmatoblasts which are merely broken-down red corpuscles, and (2) uncolored hæmatoblasts or true blood-plates. Hence Neumann concludes that it is not at all strange to find increased numbers of hæmatoblasts in diseased and anæmic persons, for it is in those persons that the most active destruction of red corpuscles takes place. Pouchet,[32] who has written a great deal of useless matter upon the subject, began by believing the hæmatoblasts of Hayem to be derived from leucocytes. His final view was that they arise in the plasma of the blood as the result of a process something like the formation of fibrin. It is needless to say that the theory never received any attention. Like Hayem, he thought that hæmatoblasts develop into corpuscles. This theory of Hayem's has received some support from Feuerstack,[33] for he regards Hayem's hæmatoblasts as young forms of the white blood-corpuscles, which latter become impregnated with hæmoglobin, thus forming red corpuscles. However, Hayem's theory may be said to-day to be almost completely abandoned.

(5) The theory which prevails at present is, without doubt, the true one. It is that red corpuscles develop from the so-called "erythroblasts" found normally in the marrow of the bones, in the fœtal liver and rarely in the spleen and lymphatic ganglia of the adult. This theory is so extensive that it forms the third portion of the paper.

(*To be continued.*)

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[28] R. Arndt: Untersuchungen an den rothen Blutkorperchen der Wirbelthiere. Archiv. f. Path. Anat. (Virchow), Bd. 83.

[29] G. Hayem's numerous papers are scattered widely through the Comptes Rendus d. l. Soc. de. Biol. for the years 1877–1879, inclusive.

[30] G. Hayem: Compt. Rend. d. l. Soc. de. Biol., vol. xxx, 1878, p. 192.

[31] E. Neumann: Uber Blutregeneration und Blutbildung. Zeitschr. f. Klin. Med., Bd. iii, p. 411.

[32] Pouchet's articles can be found widely scattered through the Compt. Rend. d. l. Soc. de. Biol. during the years 1877, 1878 and 1879.

[33] W. Feuerstack: Die Entwicklung der rothen Blutkörperchen. Zeitschr. f. wissen. Zool. (Siebold and Kolliker), Bd. 38, p. 1.6.

THE RELIEF OF SALPINGITIS BY DILATATION AND DRAINAGE OF THE UTERUS.[1]

BY CHARLES P. STRONG, M.D.,
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The treatment of salpingitis is divisible into two general classes: operative, that is, ablation of the tubes, and non-operative. Of the former I say nothing except that the larger the experience of the operator the less the percentage of cases will be found which demand this radical measure. Of the latter class we have still in daily practice the use of alterative applications and vaginal tamponades, as the common and routine measures. There will be found, however, many cases in which this antiphlogistic treatment is unsatisfactory, securing only temporary alleviation, or, from other necessities of circumstance being impracticable.

I wish to present for consideration an intermediate measure which does not embody the objectionable features of either of the two methods sketched above.

Considering for a moment the etiology of salpingitis, exclusive of malignant and tuberculous diseases, or direct violence, it is from the uterus the causative agent extends into the tubes, whether this be of a highly septic, or mildly irritant, nature. This is especially true of those cases where the marked characteristic is alternating periods of quiescence and activity of inflammatory symptoms. These cases are distinguished by the presence of more or less profuse uterine discharge, and examination will always reveal endometritis existing in some one of its several forms. Obviously, if this endometrial condition be restored to normal before the tubes become in themselves hopelessly diseased, and before the co-existing salpingitis has induced peritoneal adhesions, a return to healthful conditions may be expected.

The local treatment of endometritis by applications through the barely patent cervical canal, must always be both dangerous and unsatisfactory. This has been demonstrated too often, clinically, to require further comment. The treatment by drainage of the uterus following free dilatation, has much to commend it as a safe and conservative measure. That it is practised by but few is due, I think, not to non-success following its procedure, but rather to the glamour attendant upon a primarily successful laparotomy. I have selected four cases among the number in which I have performed it, to illustrate the various phases of cure, palliation and temporary improvement, and one case of acute endometritis and salpingitis, to show the freedom in which the measure may be employed in cases which we are prone to consider dangerous, if meddled with. The first three cases were operated upon sufficiently long ago to make the present report of value, the most recent one having been under observation considerably over a year. To avoid unnecessary confusion, I have selected only those cases with symptoms which would be materially affected by improvement in the salpingitis or endometritis; also, statements with regard to local conditions are based upon the results of examinations made with the patient anæsthetized.

Case I. Mrs. K. This patient was referred to me for operation upon the cervix and perineum, for relief of the symptoms of backache, constant pain in ovarian region, and repeated attacks of slight pelvic peritonitis, subsiding coincidently with the establishment of profuse purulent discharge from the vagina. The patient was a complete invalid, and had been bed-ridden most of the time.

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[1] Read before the Boston Society for Medical Improvement, January 11, 1892.

October, 1889. I found, by examination, the left Fallopian tube enlarged quite uniformly to the size of an ordinary sausage; the right tube about one-half that size — numerous peritoneal adhesions which were not dense enough to prevent mobility of the tubes. Both ovaries apparently normal. The uterus the seat of a decidedly puriform endometritis, and in a hyperplastic condition.

I rapidly dilated the uterus, removing the thickened mucous membrane, which was very rich in its glandular elements: thoroughly disinfected the cavity, and packed with iodoform gauze. Drainage was continued one week.

November 22d. Examination showed that the right tube had diminished one-third in size. The left tube was practically normal. The uterine discharge was recommencing. The operation and treatment was repeated.

May 6th. There had been great improvement in the symptoms of six months previous, and it was only at my request that the patient had reported. Upon the right there was still a distinctly enlarged tube. Operation repeated.

August, 1891. Twenty-two months had elapsed since the first operation, during which period there had been no local treatment. I found the right tube still slightly enlarged; the left normal. No evidence of endometritis. The uterus involuted to its proper size, and the cervical laceration not requiring operation. During the two years there had been no attack of peritoneal inflammation, and the symptoms of pelvic disturbance had been so alleviated that the patient had resumed all her household duties, and considered herself well. I, however, have classed this case at present as one of complete relief rather than cure, as the slightly enlarged tube may possibly, but not probably, at some future time give trouble.

Case II. Mrs. F., married eighteen months, and confined to bed during the past six months by pain in the left side. Had for sometime previous to marriage a slight discharge from vagina, which is steadily increasing.

Examination, under ether, shows decided enlargement of left tube, possibly also of right. Ovaries normal.

December 11, 1889. Treatment as in Case I.

January 9th. One month later, more comfortable than at any time for a year. Only two attacks of pain since the operation, each one less than thirty minutes' duration; can walk about fifteen minutes, and stand five minutes, without inducing more than a temporary feeling of pain in the side. Operation and treatment repeated. At this examination the enlargement of the tube could hardly be recognized as pathological.

January 5, 1892. One year from the last operation. Patient is perfectly well; is totally free from any pain or discomfort in the pelvis. Examination can detect no enlargement or tenderness of the tubes on either side. Walks several miles daily; no endometritis whatever. This case I consider a cure.

Case III. Mrs. Mary K., nurse. Pain in both ovarian regions, steadily increasing for several years, despite replacement of a retroflexed and adherent uterus. Chronic and profuse purulent endometrial discharge. Not able to work.

October 14, 1890. Examination shows a decided mass on left side — less upon right side; ovaries not felt. Implicated in the mass were the tubes, possibly the ovaries; certainly, there existed an abundance of strong peritoneal adhesions. Operation and treatment as in previous cases. Hypertrophied mucous membrane, and numerous mucous polypi removed. Immediately upon leaving the hospital this patient went to work in the violent ward of an insane hospital, needless to say, against advice. She re-entered the hospital three months' later. I could not see that the local condition had been improved, and operated, removing the tubes and ovaries on both sides, which were so firmly imbedded in adhesions that they were torn away piecemeal. This case I consider a failure. I have reported it as illustrative of those cases in which this palliative treatment does not afford reasonable prospect of success. At the time of the operation, I did not regard it at all as a hopeful case, and so stated; but as a possibly conservative measure, I decided to try what might be accomplished.

Case IV. Mrs. F. F. This case was one of acute salpingitis accompanying acute gonorrhœal endometritis. There was great dilatation of the tubes. I operated three times in two weeks. At the conclusion of the attack both tubes remained enlarged. There was a re-lighting of the salpingitis after the interval of a year, when I repeated the operation. Three years ago, that is, five years after the first operation, there could be detected only some slight thickening about the broad ligaments, which was not at all tender, and to-day the patient is, so far as symptoms are indicative, perfectly well. I am aware that my course in operating upon this case in the height of an attack of acute gonorrhœal salpingitis, exposes me to criticism: but it was necessary to do something as the patient's condition was becoming decidedly worse hourly. Laparotomy could not be considered; other palliative measures had been tried in vain. The course I adopted seemed the only one possible.

As to the methods of procedure. The aim should be to render the operation thoroughly aseptic, operating with the patient upon the side in the Sim's position, avoiding any downward traction of the uterus, by which the tubes might be put upon the stretch, and possibly a portion of their contents forced out upon the peritoneum; the cardinal point in the whole operation being to avoid lighting up fresh salpingitis or peritonitis by mechanical violence. Dilate slowly and steadily with steel forceps until the canal will readily admit a No. 36 sound. Thoroughly scrape away by sharp currette and currette forceps the entire uterine mucous membrane, both cervical and fundal: especially endeavoring to free the opening at the uterine end of the tubes, it being at this point that they are frequently occluded by a slight hyperplastic enlargement. Disinfect the uterine cavity. Insert a twisted roll of iodoform gauze, about the size of a goose-quill, to the fundus. Along side of this roll insert others until the cervical canal is firmly filled. Leave the protruding ends within the vagina, and protect the vulva by an antiseptic pad. Change these rolls of gauze every two or three days for ten days, and keep the patient in bed a week.

The time of election for the operation is one week subsequent to the menstrual flow. Examine, under ether, after a month has gone by, and if there is still evidence of salpingitis or endometritis, repeat the treatment. Should the tubes be enlarged when the uterine interior shows no evidence of disease either by mucopurulent discharge or hyperplasia, do not operate, but rely upon douches and alterative applications to the vaginal vault, to effect reduction in their size, which may, very possibly, be due to the results of the peritoneal inflammation, rather than to any increase in the contents of the tubes.

Selection of cases for operation. Success depends upon a proper appreciation of the pathological conditions which are to be relieved. Acute cases are best treated, for a time, at least, by palliative measures, or by radical operation. Chronic cases in which the tubes are tied down by many adhesions, and in which the symptoms are dependent upon immobility of the tubes, or of the uterus, do not afford a hopeful prospect of cure.

In all other forms I consider the operation not dangerous, and capable of accomplishing far more in the way of radical cure than any of the absolutely palliative measures, and, of course, free from the one great objection of a radical operation. The symptoms are indicative, in a measure, of what you may expect to find by examination. Pain, which is the constant and prominent symptom, is usually constantly present in those cases where peritoneal adhesions are thick and strong. These are not promising cases. The duration of the disease is also of importance. Those of more recent origin, other points being equal, yield more readily. Mobility of the tubes, and patency of the uterine end of the canal, are absolutely essential. It will be noticed that none of my cases have been cured by a single treatment. I think this is due to the practical difficulty of removing entirely the affected uterine mucous membrane. Whether a longer period of drainage would accomplish this, I am unable to say. I have made it a rule to limit my drainage to eight or ten days.

The suffering caused by the operation and the treatment is practically nil. An incidental point gained is that it tends very strongly to relieve menstrual pain, especially in those cases where the pain is due to mechanical obstruction to free menstrual discharge.

With regard to the dangers of the operation, there are none if properly planned, properly executed, and proper judgment employed in guiding the convalescence.

A REPORT OF THREE CASES OF CRANIOTOMY.[1]

BY GEORGE HAVEN, M.D.

CÆSARIAN section, under the brilliant leadership of Sængner, is so rapidly taking the place of craniotomy, in Germany, that I have thought the following cases sufficiently interesting to present to the Society this evening; and hope that the discussion will give us the sense of the members upon these two operations. These cases all occurred at the Boston Lying-in Hospital during the month of September.

M. H., entered on the 9th and gave the following history: Two years ago, was pregnant for the first time. The labor was very difficult, and she was only delivered after many hours by instruments. The child was stillborn. As a result of this labor, she had a recto-vaginal fistula and a vesico-vaginal one. She was operated upon three times for these injuries. The vesico-vaginal fistula was closed; not so the recto-vaginal. She was told by the doctor who operated upon her to present herself at the hospital if she should ever be pregnant again, at the seventh month. This she failed to do. Examined when she entered, there was found to be a complete tear of the perinæum through the sphincter. Just above the sphincter, there was a bridge of tissue across the anterior border of the anus. Above this was an opening which admitted two fingers into the rectum. There was, just below the cervico-vaginal junction, two dense bands of cicatricial tissue, running from the posterior to the anterior vaginal wall. These were supplemented by smaller bands running in various directions. The examining finger found some difficulty in passing this obstruction. Pelvic measurements were as follows: Crest, $10\frac{3}{4}$ inches; spines, $9\frac{1}{2}$ inches; external conjugate, $6\frac{1}{2}$ inches; internal diagonal conjugate, four inches.

I saw the patient for the first time at ten o'clock, A. M., and thinking that the bands of cicatricial tissue offered a very formidable barrier to delivery, asked Dr. Townsend to see the patient with me, which he kindly did, and agreed with me as regarded the serious aspect of the case. We thought that the rupture of the bands, which was inevitable, might open the peritoneal cavity. Dr. C. M. Green was asked to see the case, and at three o'clock we examined her under ether, and it was finally decided to try high forceps. The os was nearly dilated; the membranes were ruptured, and the cicatricial bands were dilated as much as possible with the hand. Forceps were applied with great difficulty, and with axis traction, the head was brought through the superior strait, and down to the bands, where it was firmly fixed. Firm and steady traction failed to advance it, and it was decided to do craniotomy. Even then, it was with great difficulty that the head and body were delivered. The patient made a good recovery.

Examined before discharge, there was a bi-lateral and deep tear of the cervix. The perinæum and sphincter were gone, and the tear extended for about two and one-half inches up the anterior rectal wall.

The next case is that of M. A., colored. She had rickets, and did not walk until she was four years old. Pelvic examination gave the following results: The symphisis was very thick and projective in a rostrum; the sacrum was apparently wedged downward and forward between the ossa-innominata; the promontory was about on a level with the symphisis. Measurements were: Crests, $9\frac{3}{4}$; spines, $9\frac{3}{8}$; external conjugate, $6\frac{3}{8}$; diagonal conjugate, 4. The true conjugate was probably less than three inches. The hand introduced, found itself much crowded in all directions, and the closed fist could with difficulty be passed through the pelvic inlet.

I did not see the patient until evening. The pains had been very strong during the afternoon; but there had been no advance of the head. Ether was given, and with great difficulty, forceps and traction-rods were applied; but steady, firm traction failed to engage the head. Dr. Townsend was kind enough to be present, and repeated attempts by both of us resulted only in failure. Version was thought of; but, owing to the very thin

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[1] Read before the Boston Society for Medical Improvement, January 11, 1892.

lower uterine segment, and the almost certain necessity of perforating the after-coming head, it was thought best to do craniotomy. Even then, delivery was very difficult, and the shape of the head when born left no doubt regarding the impossibility of delivering it through the natural channel in any other way. The patient left the hospital on the sixteenth day, well.

The third and last case differs from these, in so far as there was no obstacle to delivery in the pelvis or vagina; the whole trouble being with the uterus.

The patient was admitted on the 16th of September. She had been at the hospital two days before this, but was not supposed to be in labor. She said, however, that she had had pain off and on ever since she was first seen. Fifteen hours after entrance, the os was fully dilated, and the membranes ruptured. The head was high, position posterior. The pains were very severe at intervals of about five minutes.

No advance being made, I was sent for; ether given. The head was found movable above the superior strait; was rotated to an O. L. A., and after some difficulty, forceps and rods applied. Steady traction failed to produce any result. After several attempts, I sent for Dr. Townsend. Forceps with him resulted as they had with me, in failure; the head would not budge; the uterus being simply drawn down somewhat into the pelvis.

We now attempted version. There was a dense contraction ring which held the child firmly between the head and shoulders. The head was held exactly as it would be in a pillory.

We endeavored for hours to dilate this ring sufficiently to pass the hand through and by the head; but the most we could do, was with great difficulty to touch a knee with one finger. The feet were evidently high up in a contraction pocket. We then endeavored to shove the head back through this ring, but without success. A pulseless cord was found, and craniotomy resorted to. Powerful traction with the cranioclast merely served to pull away the skull piece by piece, until finally there was nothing left but the atlas. The hand could now be introduced, and the foot was finally brought down. Extraction was most difficult. With a blunt hook in the groin, and with traction upon the legs sufficient to break the bones, delivery was finally accomplished.

The first two of these cases, I think, could very properly have been treated by Cæsarian section, and in the first one, it seemed to me at the time the operation of election, and does so still. If the tear had extended through the anterior vaginal wall, and so into the peritoneal cavity, a fatal result would have been probable. As it was, the tear went in the most favorable direction; namely, towards the rectum. It does, however, seem to me that the mother's chances were better with Cæsarian section than with craniotomy. I have not seen her since she left the hospital; but, with the tear which she had, and with the history of having undergone several previous operations, much tissue having at each time been lost, I think that her outlook for a perinæum and sphincter is very dubious.

In the second, we had to do with a pelvis through which a fair-sized child at term could not be born, and the question here is, what was the best operation for the mother? Sænger's results have been so brilliant, that it seems to me the time has come for us to think pretty seriously of his operation. Statistics are only reliable when the operation has been done by a good operator, under the most thorough aseptic precautions, and before all other methods of delivery have failed. These statistics Dr. Reynolds and myself hope to present in another paper.

The third case was very peculiar. The woman had probably been in labor for forty-eight hours before entering the hospital. The uterus was in a state of tonic contraction, which ether and hours of labor failed to overcome. The cord had become pulseless, and craniotomy was certainly indicated. The body was, however, so firmly held by the uterus that traction merely served to pull the head to pieces without budging the trunk. Version, if possible, seemed the best thing to try. If we could bring a leg down, it gave us a wedge: and continuous traction for a length of time, would probably allow the body to pass the barrier. This proved true, but how difficult it was, can only be realized by those engaged in the case. Dr. Townsend succeeded in getting one leg, but not until he had brought down the other could any advance be made and even then not without the help of a blunt hook which I inserted in the groin.

I sincerely hope that these cases will provoke a discussion on this subject. If they do not do so, I shall have failed in my object in reporting them.

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Clinical Department.

TWO CASES OF APPENDICITIS WITH ABSCESS, SUCCESSFULLY TREATED BY RECTAL PUNCTURE.[1]

BY MAURICE H. RICHARDSON, M.D.

On Wednesday, November 18, 1891, I was called by Dr. Porter, of Auburndale, to see Mrs. H. S. P., aged about thirty. Dr. Porter gave me the following history:

"Last Friday night I first saw her. She was suffering with colic and indigestion. She was in pain and was out of her head. She vomited once or twice. I tried to move the bowels with enemata without success. The next morning the pulse was 125 and the temperature 101.5°. I gave her an anodyne. She had pain in different parts of the abdomen. On Sunday she began to complain of pain in the right iliac fossa. With the movements of the bowels we got various seeds in large quantities. Day before yesterday it looked like appendicitis. I began to give her small doses of calomel, which moved the bowels. On Monday night she passed about a drachm of various kinds of seeds. Yesterday she began to have tympanites. The pulse yesterday came down to 100, and the temperature to 99.6°. This morning she had two movements of the bowels. On examination of the abdomen I found that it was dull in the right flank, and by rectal examination there was a bunch which could be felt also by the vagina."

I found the patient lying in bed looking fairly well. Tongue was coated and white. There was no distension of the abdomen, though it was everywhere tympanitic, and nothing could be felt by external examination. By the vagina, the uterus seemed to be somewhat fixed, and there was a resistance to the right. I found a great prominence in the rectum behind the bladder, caused by a tumor, which was soft and evidently contained pus. The general condition of the patient was good. After careful consideration, I advised that the tumor be punctured and drained through the rectum.

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[1] Read before Boston Society for Medical Improvement, January 11, 1892.

On the following day Dr. Porter, under ether anæsthesia, punctured the abscess through the rectum, and left in a drainage-tube. This was followed by perfect recovery in about three weeks. She has remained well ever since.

On Monday, December 14, 1891, I was called to see a young man, living in South Boston, by his physician, Dr. W. J. G. Fogg, from whom I obtained the following history:

"James W. B., aged twenty-six, brass-finisher, was perfectly well up to a week ago last Friday night. Then, about bedtime he began to feel uncomfortable, and complained to his wife of distress in the bowels, with a slight bellyache. He slept fairly well that night. Took some breakfast the next morning, and went to work. He had a good operation of the bowels. In the middle of that forenoon he was taken with severe cramp in the belly (indicating the place by putting his hand over the lower part of the abdomen, below the navel). He did not pay much attention to it at that time. The pain lasted all the forenoon, and he was not able to get back to work. On Saturday he stayed at home. He had great pain in the lower part of the abdomen on the right side, accompanied by vomiting. His tongue was dry and red. Respiration was difficult and increased in frequency. Pulse was 88 and temperature 101°. Had had a slight chill. That was on Sunday morning. On Monday his pulse went up to 130 and to 128 in the evening. The pain was somewhat controlled by Squibbs opium, fifteen drops every two or three hours. The belly was increased in size and somewhat tender. Respiration seemed difficult, and he vomited continually. The next day the pulse dropped to 98, and there was a little less tenderness. He was stupid and heavy from the opiate. Vomiting and nausea the same. The next day, Wednesday, pulse was 94 in the morning, and rose to 103 in the evening. General symptoms about the same. On Thursday the pulse was 105 in the morning and 100 in the evening. During this time we were giving him very small quantities of milk with carbonated water. He could not take any stimulant, although lately he has taken some. The next morning the pulse was 90, but otherwise he was about the same. On the 12th, that is, two days ago, his pulse was 98, and the treatment the same. There was vomiting all this time. Yesterday the pulse was 105 and in the evening 100. He was vomiting hard, retching and straining all day. There was a little oozing of fluid from the bowels. During this time he was passing gas at intervals. There was a little hesitancy in making water yesterday, which amounted to retention last night. He was catheterized this morning. The last twenty-four hours ending this morning, we have made no attempt to give any nourishment at all. He cannot retain it. During his whole sickness he has not taken a pint of milk in twenty four hours, though milk has been the main-stay. The distention reached its maximum within the third day. There has been no discharge of pus at all. In regard to the pain he said that there has been no very severe pain since the third day. There has not been as much pain as one would expect to find, and there has been no chill. Respirations are much better now. They were nearly sixty a minute at times. The vomiting has ceased since morning and he has had a large dejection."

On physical examination I found the young man's general appearance good. His face was rather flushed, pupils large, abdomen slightly distended. There was a dulness in the right iliac fossa. Bladder was full. Pulse 104. Tongue a little red. No special tenderness except on deep pressure in the right iliac fossa. Tympanitic everywhere except in this place, where it was a little dull. Nothing could be felt by the rectum.

In this case it seemed to me best to wait, because the symptoms had taken so decidedly favorable a turn. Everything went on well for a week, when vomiting returned with renewed violence, accompanied by increased pain, tenderness and distention. He was sent into the Massachusetts General Hospital on the evening of December 23d, and I saw him at about eleven o'clock that night. I found him vomiting constantly, with a high pulse and temperature, and in a very bad general condition. There was a large tumor occupying the lower part of the abdomen, filling the whole right and extending far into the left side. There was a large, tender mass pressing upon the rectum just back of the bladder. The patient's condition was so bad that anæsthesia and laparotomy were out of the question. I therefore introduced a long rectal trocar of small diameter into the tumor. There was an immediate discharge of fetid pus. The canula was fastened into the mass and a large antiseptic dressing applied. During the night the vomiting ceased and about two quarts and a half of pus escaped through the canula. At the dressing in the afternoon the canula became displaced. From that time to the present the temperature has been normal and the physical signs have entirely disappeared. Nothing can now be felt by the rectum.[2]

I think there is no doubt that I was wrong in advising delay in this case. It was not evident at the time, however, and it is only in the light of subsequent events that an error of judgment becomes manifest.

Several times before I have been inclined to open abscesses pointing in the rectum by that channel. It seems to me that it is often more dangerous to open such abscesses by laparotomy and that the drainage is not so good. While as a general principle I believe it is far better to open from above, for obvious reasons, yet at times it seems to me that this procedure cannot be adopted. If the patient is in a very bad condition, the necessary shock of a laparotomy is often sufficient to cause a fatal termination. If the abscess has not become definitely adherent to the anterior abdominal wall, it is undoubtedly very dangerous to drain the cavity upwards.

In the first case quoted there was everywhere tympanitic resonance, and there was no reason to suppose that the tumor had become adherent to the abdominal wall, nor was it possible by this route to drain the abscess except by going between the healthy intestines. In the second case the patient's condition was too serious to entertain for a moment the question of laparotomy, no matter how quickly or how skilfully performed. I recall several cases in which I have no doubt whatever that the patient died from the shock of an operation performed at this time.

In both the above cases pus was about to break into the rectum, and the operation hastened by a few hours the process of Nature. The chief objection to this method is the infection of the abscess cavity by the rectal contents. In these two cases nothing of the kind took place, and it is a well-known fact that abscesses break into the rectum without any subsequent trouble. We must bear in mind, however, that at times long-continued suppuration, general wasting, and death result from the breaking of an appendicular abscess or from the rupture of a pus-tube. Such cases, which are most disastrous and distressing, have led us, when possible, always to open large collections of pus in the pelvis by laparotomy, notably in cases of appendicitis and salpingitis. In the latter condition, with which I have had considerable experience, I have yet to see any ill results following vaginal puncture and drainage. It is obvious that while we have in rectal puncture the most dependent drainage, this method should be selected only in very exceptional cases. In vaginal drainage I think we have a less dangerous method, although in my experience it is very difficult to make the utero-vaginal canal aseptic. I believe in avoiding both as far as possible, but that occasionally we must resort to this procedure.

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[2] He remains perfectly well at the present time, March 9, 1892.

In a case very similar to the second, which I saw with Dr. Goss two years ago, and which I sent to the Massachusetts General Hospital, Dr. Warren drained by the supra-pubic method. The rectum was compressed by a large abscess situated directly behind the bladder. This case made a good recovery, although in the light of my recent experience I am quite convinced he would have done just as well by rectal drainage.

While there is no definite rule to be laid down in these cases, it seems to me that a certain number of them may be more safely drained in the manner described.

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WOUND FROM WHIP-LASH SIMULATING BULLET-WOUND.

BY FRANCIS C. MARTIN, M.D., ROXBURY, MASS.

I have had a case recently, which is certainly an amusing curiosity. A wagon-driver presented himself, with an enormously swollen under lip, and the following history: Late in the evening, he was driving through Dover Street, past a dense crowd of people. He struck his horse with the whip, and, at the same instant, there was a sharp report, and he felt a stinging pain in the chin. He found a wound in the lower part of the chin, and another smaller one inside the mouth at the base of the lower lip. The next morning the whole lip was very much swollen.

On passing a probe inwardly, from the outside of the face, I found a passage through into the mouth at the smaller wound. The probe rubbed against some hard substance *in transitu.* All the appearances indicated a severe bullet-wound. On making a free incision from the inside wound, I cut down on the foreign body, and with bullet forceps removed a black mass, about as large round as a lead pencil, and over half an inch long. I at once exclaimed, "You were shot from the crowd!" On dropping the object, however, from the forceps, into a basin of water, it went rather slowly to the bottom, without any "thud." I then examined it carefully, and found it was a piece of the whip itself.

I have often seen the power of the long snake-whips of the freighters in Montana, in taking out the skin in minute pieces from any part of a mule, with unerring accuracy, but never heard of any such catastrophe as the one I have described.

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Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

AN EPIDEMIC DERMATITIS AT PADDINGTON INFIRMARY AND NEIGHBORING INSTITUTIONS.[1]

In view of the probability so often expressed, that many forms of cutaneous inflammation heretofore classed as eczema or dermatitis simply, are due to the action of a parasite or its products, the following epidemic of dermatitis is interesting and suggestive.

At the meeting of the Medical Society of London, held on November 30, 1891, Dr. Thomas Savill read a paper on "A Recent Epidemic at Paddington Infirmary." Between July 1st and October 23d, 163 of the 846 inmates of the infirmary were attacked by the disease, or twenty per cent. Only two cases occurred among the staff, the author himself and a housemaid. The disease is described as a universal dermatitis always resulting in a desquamation of the epidermis, attended by a certain amount of constitutional disturbance but no essential rise of temperature, running a course of about six weeks, and attacking males slightly more often than females. The disease sometimes began as a papular or papulo-erythematous eruption, sometimes as elevated macules, in rare instances in ring forms; in either case becoming confluent in a week's time, and presenting then the features of an acute, desquamating dermatitis. In a majority of the cases there were vesicles also, which caused much serous exudation when broken. The eruption started most frequently on the upper portion of the body, although the lower portions were affected first in a considerable number of instances. It seemed to spread by contiguity to the adjacent parts from those first affected. Burning and itching were constant features throughout the attack. Convalescence was slow, and 38 of the patients had relapses. Anorexia and prostration were the chief constitutional symptoms. In about a quarter of the cases there was vomiting, diarrhœa, or both. Temperature normal excepting occasionally at the height of the inflammation. The conjunctivæ were inflamed in all of the severe cases, and the hair and nails were often lost in the later stages of the disease. Albumen was found in the urine in fifty per cent. of the cases, but no serious renal disease was recorded. Some cases ended fatally [proportion not stated, nor whether these were the old and enfeebled. — Rep.] chiefly from "the extreme weakness produced by the eruption," in other instances from collapse following the vomiting and diarrhœa. Some died comatose as in uræmia. In several cases boils and carbuncles were seen scattered over the surface. The disease bore, on the whole, the most resemblance to an acute general eczema, differing from it, however, in the extent of the inflammation and thickening, in the profuseness of the exfoliation, and the definiteness of the course. Germicides externally and stimulants, afforded the most relief. With regard to the etiology, age was found to be a predisposing condition, the largest proportion affected being between 60 and 70 years old. The author considered that the clinical phenomena alone were almost enough to prove its contagious character, especially its definite course, the constitutional disturbance, the marked effect of germicides, and its epidemic character. Further pathological and bacteriological investigations were promised.

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[1] Lancet, December 5, 1891.

At the same session Mr. Lunn described a similar epidemic dermatitis as occurring at the Marylebone Infirmary from May 1891, when 193 persons were affected. He considered that 10 deaths could be directly attributed to it. No light could be shed on its etiology, after a most painstaking investigation. It occurred in wards that had been newly cleaned and isolation failed to secure exemption. Several attacks were noticed in some instances. Nothing unusual was detected in the several autopsies that were made. Mr. Lunn made the interesting statement that he noticed that if the first patch that appeared were painted with collodion, a further spread of the disease was avoided.

Dr. Richards of the Hanwell Institution, in the same district as the Paddington Infirmary, said that beginning with July 1st they had had 38 cases of the epidemic, or three per cent. of the inmates, the last case occurring in October. All of his patients recovered. He thought the eruption of a neurotic character and probably due to influenza, although he admitted in reply to a question, that there were no other manifestations of the influenza at the time, with the exception that in some of the cases there was a history of pains in the limbs, headache, etc.

Dr. Stephen Mackenzie said the outbreak, as far as his own experience was concerned, was quite unique. The features were those of an universal erythema with copious desquamation. He pointed out the similarity of these cases to the rare sporadic forms of dermatitis exfoliativa, which we have no grounds for considering contagious. In this outbreak he thought that there must be some special causative conditions in the environment, and as he had always regarded eczema as a purely local disease, he was ready to accept any bacterial theory upon sufficient grounds. He suggested that the clothing may have had some share in the spread of the epidemic.

Dr. Crocker was in doubt whether the disease was a constitutional one, like the exanthemata, or a local disease, the general symptoms being merely incidental. In a considerable number of cases he had noticed an enlargement of the glands, and this was not in proportion to the intensity of the dermatitis. The disease usually began with one patch, and became general, a feature often seen in pityriasis rosea. Against its being a general disease was the fact that it was endemic rather than epidemic.

DRYING LINIMENTS IN THE TREATMENT OF SKIN DISORDERS.

In February, 1891, Dr. George T. Elliott, of New York, published an article in the *Journal of Cutaneous and Genito-Urinary Diseases*, on "Bassorin Paste," a new base for dermatological preparations. The formula for this preparation was not disclosed, but it was stated to consist of bassorin, a substance derived from Bassora gum tragacanth, and other sorts of gums, combined in proper proportions with water, glycerine and dextrine, so as to form a jelly-like mass that dries on exposure to the air. This was proposed as a substitute for the gelatine preparations of Pick and Unna, on the ground that the disadvantages of gelatine were obviated by the new preparation. Almost any drug may be incorporated with this base, which he names Bassorin Paste, and which he has found useful in a variety of cutaneous affections.

On May 8, 1891, Professor Pick, of Prague, read a paper on the use of drying liniments (linimenta exsiccantia)[2] in the treatment of skin diseases. These so-called liniments were designed for the same purpose as the Bassorin Paste of Elliott. The disadvantages of gelatine as a protective dressing for the skin are several. In the first place it has to be warmed, and it requires some little skill in order to hit the right moment for spreading the gelatine in a smooth layer upon the skin. It may be properly done by a skilled attendant, but it is difficult for the ordinary out-patient to effect it. More important still, the medicament is not brought into sufficiently close contact with the skin, on account of the rapidity with which the gelatine hardens. To obviate these difficulties Pick proposes traganth, a substance that fulfils the necessary conditions. Numerous experiments have convinced him that the proper consistency is obtained by the following formula:

Traganth	5 parts.
Glycerine	2 parts.
Aq. destill..	100 parts.

This is best prepared by warming, as in this way a completely antiseptic preparation is obtained, that will keep without the addition of antiseptics. He remarks that the drug of commerce often varies so much that it may be necessary to alter the proportions of the constituents. The "liniment" that is thus prepared can be used like gelatine in all cases where a protective covering is desired, it can be applied in a thin layer like an ordinary liniment or ointment, and can be completely removed by a simple washing. The first sensation experienced is a pleasant coolness, which is especially marked in erythematous and inflammatory conditions. An advantage over fats and plasters is that the greasy feeling is avoided, and that the clothing is not liable to be stained. This simple liniment may be used as a base for the exhibition of active substances. Drugs that are soluble in water, are added directly to the water that is necessary for the preparation of the liniment, while insoluble drugs are rubbed up with the mass. The oily substances, such as the tar preparations, ichthyol, styrax, Peruvian balsam, etc., do not change the essential properties of the liniment, except when used in very large amounts. Other insoluble substances, as chrysarobin, oxide of zinc, white and red precipitate of mercury, iodoform, salicylic acid, etc., give the liniment the consistency of a paste according to the amount used, without diminishing its drying and other properties. Two properties deserve especial emphasis: first, that the liniments do not become altered when used for a long time, and secondly that most substances when vigorously used locally, give rise to almost no unpleasant general results. Tar liniments of a strength of ten per cent. have been used over the whole body, without producing any, or very slight, symptoms of absorption. Pick declares that in a generalized eczema or psoriasis, the whole body may be treated by a five to ten per cent. tar liniment, — a procedure that would be dangerous when the drug is used in the form of an ointment, or an alcoholic or ethereal solution.

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[2] Archiv. f. Derm. u. Syph., 1891, 4 Heft.

In recommending the liniments to the trial of physicians, Pick disclaims all wish to extol them to the exclusion of other methods of treatment, as many cases will be far more improved by our present method with ointments and plasters.

INFECTION FROM GLANDERS.

It has long been known that glanders or farcy may be transmitted from the horse to man, and many instances may be found scattered through the literature, more or less faithfully described. But little attempt has been made, however, to bring together the differential characteristics that separate glanders, especially in its more chronic forms, from affections that offer a clinical resemblance. In view of the great progress that has been made in the etiology of the disease by the discovery of a specific bacillus, it would be strange if our knowledge of its clinical aspects were not rapidly increased, and the careful studies recently made by several French observers illustrate once more the value of bacteriological experiment.

MM. Hallopeau and Jeanselme[3] report very fully a case of chronic glanders, which can be merely outlined here. The patient was a man of thirty years, who entered the St. Louis Hospital in April, 1889. He had been a wagoner for six years, and was accustomed to take care of his horses himself. While caring for a sick horse, that was subsequently killed, he was seized with febrile attacks accompanied by violent pains in the joints and in the head, and the nasal secretions became increased. Soon after he developed an inflammatory swelling on the crest of the left tibia, which was opened at the hospital of Chalon-sur-Saône, and was followed by a suppuration at this point which lasted for three years. Later, there appeared abscesses upon the arms and legs which opened spontaneously or were incised; but as the wounds refused to heal he came to Paris, and entered the St. Louis Hospital, where the lesions were finally healed after vigorous cauterization with the thermo-cautery. He then remained well for three years, when he presented himself again, complaining of severe headache, with some deafness and pain in the ears. Examination showed an ulceration upon the vault of the palate, which spread rapidly, soon involving the gum and the upper lip. At this time he was placed upon antisyphilitic treatment, which was stopped after six weeks, as no improvement could be detected. Soon afterward, the patient being troubled with a sort of chronic coryza, there was found to be an ulceration of the mucous membrane of the nostrils, with fistulæ leading to the bones. Cauterization of the ulcers was then tried, with the result of partially healing the ulcerations upon the palate. The ulceration upon the lip is described as irregular at its edges, dentated in some places, circinate in others. The edges were everywhere sharply cut, and in some places prominently raised as in epithelioma, but they did not possess the hardness so characteristic of cancerous growths. The floor of the ulcers was extended by prolongations beneath the edges, and was constantly covered with a glistening exudation, in the midst of which appeared yellowish elevations, looking not unlike pustules. The pains in the head now became more intense and had a marked nocturnal character, preventing sleep, and the ulcerations upon the lip extended, until the whole upper lip had been destroyed. Abscesses then appeared upon the arm and hand, which left obstinate, ulcerating surfaces. Suddenly, one day, the whole face became the seat of an inflammatory œdema, the surface being covered with rounded pustules, which began at the angle of the right eye, where the lacrymal sac had been for some time in a state of inflammation. This acute attack, which was accompanied by a high temperature, subsided after the sloughing away of a large part of the right nostril, and was succeeded by an enormous tumefaction of the lower lip, which had hitherto been spared, and the patient died soon afterward in a state of general marasmus.

Three periods are to be noted in this case: (1) Symptoms of an infection, increase in the nasal secretions, and numerous abscesses. Then an intermission of three years. (2) A new series of abscesses, ulceration of the nasal fossæ, the vault of the palate and the lips. (3) An attack of acute glanders, which ended fatally.

In cases of glanders analogous to the one described, the diagnosis is almost always suggested by the patient's occupation, as it almost never occurs except in those who are often brought into contact with horses. That cases of indirect infection may occur, however, is illustrated by that of Elliottson, where a washerwoman died of the disease after washing the linen of a coachman who had had the affection. The principal lesions are multiple abscesses and ulcerating neoplasms. Characteristic of these abscesses is their site; almost all are situated on the extremities. Some of them open and cicatrize rapidly, while others, and these are the most numerous, are chronic in their course and the resulting ulcer very difficult to heal, and inoculations made from these two varieties proved that the bacillus of glanders, when it has its seat in the human tissues, has a very variable period of existence. The fluid from the abscesses may sometimes have a characteristic aspect; it has an oily, gummous appearance, is often streaked with dark colored blood and is called by veterinarians "huile de farcin." The acute inflammatory œdema which ushered in the last stage of the disease, the authors regard not as an erysipelas, but as an attack of acute glanders, such as often terminates a chronic farcy.

The experimental studies in this case proved conclusively the nature of the affection, as the bacillus of glanders was obtained in pure cultures, and the disease inoculated upon animals.

Cauterization with the thermo-cautery was the only treatment that proved in any way effective. By this means the external manifestations were delayed for a period of three years, and in the same way the ulcer of the palate was healed.

In the same journal is published a communication to the French Society of Dermatology, by Besnier, on the same subject, in which another case of glanders is described where a severe ulceration of the face developed in the course of a chronic farcy. The patient was a man, twenty-five years of age, who had been a groom, wagoner and driver. He entered the St. Louis Hospital in May, 1890, presenting in the centre of the face lesions that he said had existed for only five months, and which gave the impression at first glance, of a severe syphilis. He had contracted the disease four or five years before its fatal termination. The first symptoms were of a pulmonary character. For more than a year he suffered from a severe and incessant cough, with night-sweats, abundant expectoration, loss of appetite, of flesh and of strength.

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[3] Annales de Derm. et de Syph., tome ii, No. 4.

Eighteen months or two years later all these symptoms had disappeared. There then appeared an abscess of the left forearm, together with lesions in the nasal cavities. Upon entering the hospital the centre of the face was the seat of an uninterrupted series of infiltrations, ulcerations and losses of substance, which had destroyed a large part of the nose and of the upper lip, exposing the gum. The vault of the palate was totally covered with ulceration. Wherever an active lesion was seen it was situated upon a red infiltrated base. Upon this developed the elementary lesion of glanders, the "bouton farcineux," a small papule, which rapidly softened with the formation of small yellow centres, which emitted an abundant puriform liquid. The open surface thus formed increased rapidly with irregularly indented edges, but in a few days this mode of progression ceased, and the ulceration became undermined with infiltrated edges. It was by the coalescence of several of these ulcers that the large losses of substance were formed. Considered separately, each of the proliferations has but a limited duration, and a process of cicatrization goes on at the periphery. In this way there is formed in the midst of the vast ulcerations a characteristic mass of nodules and projections of every size and shape, that gives the whole an irregularly granular and wormeaten appearance. Later, the process at first rapid, becomes slow, the lesions always secreting a quantity of yellowish pus which fills the depressions and never ceases, so long as the lesion is active. The patient had not at any time symptoms of nasal trouble; no coryza nor exudation. Antisyphilitic treatment proved futile. Iodoform and camphorated naphthol were the most useful means found for checking the suppuration and limiting the formation of the farcy nodules. At the time of the patient's entrance, ten months before his death, a nephritis with paroxysmal oliguria was present, and he finally died from uræmia. The diagnosis was confirmed by experiment, as positive results were obtained by culture and by inoculation.

Babes, of Bucharest, publishes in the *Archives de Médicine Expérimentale et d' Anatomie Pathologique*, No. 5, 1891, some observations on glanders from which we extract some of the more interesting results. After speaking of the morphology and methods of culture of the bacillus, he refers to its penetration into the sound skin and mucous membranes. In one case he discovered the existence of small reddish papules which the patient declared to be the starting points of the ulcers, and in fact the development of the ulcers from these papules could be traced microscopically. Examination of these papules showed that many of the hair follicles were hypertrophied and surrounded by a cellular infiltration, and their centre was filled with enormous masses of the bacillus of glanders, well stained by the appropriate methods. In the parts of the skin surrounding the follicle, a few bacilli were found, chiefly in the lymph channels. From this it is concluded that the specific bacillus can gain entrance to the hair follicles, there multiply and produce a dilatation of the follicle, and finally pass through the epithelial lining membranes into the adjacent tissue. In order to determine if the bacillus may gain entrance through the sound skin in animals also, Babes mixed the bacilli with vaseline, lard or lanoline, and rubbed this mixture thoroughly for two to three minutes into the skin of guinea-pigs. Glanders was produced in one of three cases. Cultures of different ages, or obtained from different cases, showed very variable degrees of development. Rabbits inoculated in the ear with the platinum wire from a fresh culture, often die of glanders, without tubercles or abscesses, but with lungs congested and bacilli in the blood. Glanders in man is comparatively frequent in Roumania, so that Babes was enabled to study several cases, of which four are described. It was not always easy to isolate the bacillus of glanders, on account of the frequent association of other forms of bacteria. From a study of the chemistry of the morbid products the following conclusions are reached: (1) The bacillus of glanders produces chemical substances of a toxic nature. (2) These substances were obtained by precipitation with alcohol, or by dialyzation of the cultures in bouillon or potatoes, filtration and dissolving in water or glycerine. (3) These substances are of a brown color, and analogous to those obtained from cultures of tuberculosis and diphtheria. They possess a pyretic and toxic action stronger than that of tuberculin. The active substance is called "malléine." (4) Neither the part that is soluble in alcohol, nor the chloroform or ether extract of the alcoholic precipitate, has any appreciable action upon the organism of animals. (5) The active product produces after injection a transient fever, often convulsions, and in large doses nephritis and general marasmus; it never produces glanders. (6) It is much more violent in action upon animals affected with glanders than upon healthy animals. By beginning with small doses, and awaiting the disappearance of the fever, a preventive vaccination may be obtained, and the disease cured, although it is difficult to determine the proper dose. The author does not wish to draw absolute conclusions from these observations, but expresses the hope that a further study of these substances will suggest a rational method of treatment for this terrible disease.

(To be continued.)

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

ANNUAL Meeting, Monday, January 11, 1892, the President, DR. FREDERICK I. KNIGHT in the chair.

DR. C. P. STRONG read a paper on

THE RELIEF OF SALPINGITIS BY DRAINAGE OF THE UTERUS.[1]

DR. F. H. DAVENPORT: I have been very much interested in this subject because, as Dr. Strong has said, although there are many cases which can be successfully and satisfactorily treated by the ordinary methods of tampons and douches and applications, yet there are a certain number of cases where these measures are insufficient, and yet in which it is inadvisable to operate. I have never tried this method Dr. Strong has described, but it seems to me to possess many advantages, so that I certainly shall try it in suitable cases.

I think the question of the character of the discharge is an important one. In cases of thickening of the tube it does not always follow that the discharge that comes from the uterus comes from the tube itself, and I think I have seen cases where there was an intermittent character to the discharge where the discharge came from the uterus alone. In those cases, of course, it is more apt to be connected with menstruation, either present just before or just following the flow, and where the discharge comes from the tube the presence of pain, as a rule, is a distinguishing point; still that does not always follow. I have seen cases of uterine colic lasting a day or two set up by a slight exacerbations of the trouble in the endometrium alone. Still, where the attacks of pain are evidently due to exacerbation of the trouble in the tubes, and such pain is accompanied or followed or relieved by a flow of pus or mucopurulent discharge with enlargement of the tube, it is safe to infer that the tube is at fault. I would like to ask Dr. Strong whether he would not avoid in these chronic cases the stage of acute exacerbation for his operation. He spoke of operating in one acute case. I did not understand whether during the acute stage or immediately following an acute attack.

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[1] See page 258 of this Journal.

Dr. Strong: That was the first case I ever did. It was an acute gonorrhœal case. The tubes were filling up, and it had been a question of laparotomy, which the family were not willing to consider; so as I felt the tubes might burst and let pus into the peritoneal cavity, I operated in that case with a view to drain the tube. The first operation was attended with so much relief that when the temperature rose again I operated again, and again the third time. I should do that if it came to a question of laparotomy quite fearlessly.

Dr. G. H. Washburn: I have used this method in one case of this kind with very satisfactory results. It was a case where there was an evident patency of the uterine end of the tube, and the difficulty was that the opening was apparently not free enough, and the endometritis that was present was tending to close up the tube. The pain was increasing, and there was a question of a coming laparotomy if things were allowed to go on. The usual methods of different applications were tried without relief, and then I dilated thoroughly, following out the course Dr. Strong has described; I had to use the dilatation and curetting only once, keeping the canal open, however, for quite a while afterwards, longer than the ten days. I kept the iodoform gauze pencils in the uterus for three weeks, changing them every second day, and brought about perfectly free drainage of the tubes. This relieved the symptoms, and the patient has been very comfortable in that respect. That was about two and a half years ago, and the patient has not been troubled with the symptoms since.

Dr. Davenport asked whether at the time of the operation any extra paralyzing of the uterine fibres is necessary by an extra amount of dilatation, or merely enough dilatation is employed to just admit the sound?

Dr. Strong: I simply carry it up to that. When I get it up to No. 36 sound I think that is far enough. I dilate with Schultze's dilator. Beyond No. 36 I think there is a chance of tearing it into the broad ligament.

Incidentally, one of these cases I reported to-night was sterile and had suffered from dysmenorrhœa all her life. That is another point in favor of the operation, I think.

Dr. G. Haven read a paper entitled

THREE CASES OF CRANIOTOMY, DONE FOR DIFFERENT REASONS, DURING THE MONTH OF SEPTEMBER, AT THE BOSTON LYING-IN HOSPITAL.[2]

Dr. C. M. Green: I saw one of these cases, the first one reported, and found it of interest from the fact that we do not often see in these days such marked cicatricial stenosis of the vagina. The interesting feature in the case was largely one of deciding what had better be done under the circumstances, and I think there was no difference of opinion among the three gentlemen who saw the case that it would have been a proper and legitimate operation, from a scientific point of view, to have done Sænger's Cæsarean section. We ought to have saved the child and mother too by that operation. To be sure the mother got well as it was, with a very serious tear, but, of course, the child was lost. The reason which largely controlled the decision in the consultation was a prudential one. It happened at the time the hospital was in a condition of confusion, owing to rebuilding. We were not in a condition to place the patient in such a way that she would have a fair chance after opening the abdomen, and did not feel it was quite right to the patient or to the reputation of the hospital under the existing circumstances to undertake that operation. The statistics after craniotomy on the mother's part, in good hands and with aseptic work, are entirely satisfactory. No mother ought to die after craniotomy in careful hands. There was the question of fœtal life. The child was living, and it would have been more scientific obstetrics if the abdomen had been opened and Cæsarean section performed.

The second case was very interesting. Operation was called for by the pelvic contraction. It seems to me that that would have been an entirely suitable case for Cæsarean section had the child been living. In fact, Boston will fall behind other cities if she does not recognize the fact that under modern surgical methods and aseptic treatment the Cæsarean operation is an entirely justifiable one in the hands of those who have had surgical training, and know how to do the operation.

The third case was one of unusual difficulty. Whether or not that case would have been as favorable for Cæsarean section I am less certain. The condition of the uterus was very peculiar. We know that the child is often grasped by contraction rings, and the ring causes a certain amount of resistance to the extraction of the child, but it is very certain that the contraction ring should not still remain as tightly contracted as this after prolonged etherization. These rings relax in my experience. Whether or not in that third case after Cæsarean section the mother would have had a good chance is questionable. With the uterus in that condition I do not feel sure that the operator would have been able to suture the uterus and obtain a good result.

Dr. C. W. Townsend: The record of three craniotomies within such a short time is certainly appalling, but the necessity of either that operation or Cæsarean section was forced upon me in all these cases which I had the fortune to see with Dr. Haven.

In the first case, Cæsarean section would, as is seemed to me at the time, be the only method of saving the child; for to drag the intact head by main force through the bands of cicatricial tissue in the vagina would have surely resulted in serious, if not fatal, injury to the mother.

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[2] See page 260 of the Journal.

The third case is interesting and instructive in teaching us to be on the lookout for the exhausted and irritated state of the uterus which leads to the formidable hour-glass and contraction ring. In this case there was also a thinned lower segment caused by retraction, the line between this segment and the thickened upper part forming the so-called ring of Bandl or the retraction ring. This thinning of the lower segment added, of course, to the danger and required us to use great care in manipulation for fear of rupture. It might be added that the three cases all made normal recoveries, and it seems to me that with proper antiseptic precautions such results should always be obtained in craniotomies. Statistics recently published have, I believe, borne out this statement, a great contrast to the sepsis so generally expected after craniotomy in former times. It seems to me that the remarks of Dr. Haven on Cæsarean section are very timely.

Dr. Green: I should like the opinion of some of the gentlemen present as to whether we have the right to do a Cæsarean section without the formal consent of the husband. In Dr. Haven's first case the husband was not accessible. Provided three good men think the prognosis is good for the mother, with a reasonable probability of saving the child, would they be justified in performing the operation without the consent of the husband or the next in authority? It is a question we ought to be able to decide, because there generally is not time to wait. If we would succeed with a Cæsarean operation it must be done early, and not after forceps and version have been tried.

Dr. Minot: My own opinion is that if after a formal consultation of the physicians attached to the hospital it was decided that the patient's interest required imperatively any operation, in the event of inability to obtain the consent of the husband or nearest friend, it would be their duty to operate at once.

Dr. Warren: As a rule, I have been in the habit of waiting for some relative in case of an operation at the hospital, but under circumstances somewhat different from those Dr. Green has mentioned. When a patient is brought in in an intoxicated condition or somewhat confused from an accident and is unable to give an intelligent answer, as a rule, I have endeavored to postpone operating until some formal consent of the relatives has been obtained. I can conceive of a case that would come to me as a hospital surgeon where the question of performing laparotomy for intestinal obstruction might arise, and delay be productive of fatal result, where I should feel authorized to operate. I think the cases are quite exceptional, however. I should try very hard in all cases to obtain the consent of some relative or do the operation with a thorough understanding on the part of the patient.

Dr. Green asked whether or not the institution would be liable for suit if its officers were to perform a serious operation like opening the abdomen for any purpose without the formal consent of somebody.

Dr. M. H. Richardson: Last week a surgeon of one of the smaller hospitals near Boston was brought into court to answer to a charge of malpractice. He had amputated a leg it was alleged, in the first place, without the consent of the father; in the second place he had done it unsuccessfully. The case was an emergency case. The evidence showed that the father was in the room at the time of the operation. It was alleged that the operation was done too soon, that no operation should be performed under six hours. The jury brought in a verdict acquitting the physician. I have seen a great many malpractice suits tried. I do not believe that a verdict can be brought against a physician or a hospital for a Cæsarean section, if the physician thought it was necessary, provided the patient was unconscious and no friend was present. I believe it is pretty clear that in a general hospital or lying-in hospital that, if no friends are present at the time, physicians are expected to do the best they can for the patient. I don't believe in this special case myself that a physician would be justified in doing an operation which is not acknowledged by all to be the best thing to do, without consent. I think it is a very important question, and one we have to decide for ourselves in all hospitals. I believe the important point is go ahead and do the best you can for the patient without any idea of suit. I have seen at least two cases in which the surgeons had an idea they might be sued in which that very act was the most potent thing used against them.

Dr. Strong: I don't see why the question proposed by Dr. Green does not apply to what they did do. They operated and used their best judgment. They did craniotomy.

Dr. Haven: I agree most fully with Dr. Green regarding the third case. It was certainly not one where Cæsarean section would have been thought of, everything but the uterus being in a normal condition. The contraction ring was, however, so firm hours of work failed to produce any effect upon it. We worked from ten o'clock p. m. until dawn, and delivered then only after the head had been completely pulled to pieces by the cranioclast.

Dr. H. F. Vickery: The English say that chloroform will relax more completely than ether. I wonder whether chloroform would relax such a ring?

Dr. Haven: I have never used chloroform.

TUMOR OF THE FEMUR.

Dr. Warren: I have here a large tumor of the lower part of the femur of about nine years' standing. The patient was a male, thirty-nine years of age, in general good health. After some blow or strain he felt a swelling above the knee, and the femur grew gradually until it attained an enormous size, which it had when he came to the hospital for operation last Saturday. It was one of those oval-shaped tumors springing from the shaft of the femur and running up the shaft. This one was peculiar from its very dense structure, a bone-like hardness. On amputation it proved to be in the centre a soft sarcoma, and the hard part appeared to Dr. Whitney to be chiefly a calcification rather than ossification of the part. The wound healed throughout by first intention.

Dr. M. H. Richardson reported

TWO CASES OF APPENDICITIS WITH ABSCESS TREATED BY RECTAL PUNCTURE.[3]

Dr. Warren: I saw the second case at the hospital and the convalescence was all that could be desired. It seems to me a desirable method of dealing with certain types of these cases. The fashion now is to make an incision through the abdominal wall, but it is well to remember, too, abdominal abscesses can be treated in other ways.

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[3] See page 263 of the Journal.

Dr. Strong: I should like to ask whether in the first case he could detect any sign of pus by vaginal examination.

Dr. Richardson: No. It was impossible. There was increased resistance in the right.

Dr. Strong: In quite a number of cases that I have seen in the various hospital clinics of long standing suppuration with a sinus leading into the rectum, it has been impossible to get good drainage. I believe thoroughly where you are sure that the abscess cavity is a single one and you can reach it through the vagina, in aspirating and draining that way rather than do a laparotomy, but with regard to opening into the rectum, I think the point is one to be very seriously considered for the reason I stated. I have seen very many very long suppurative cases, the patient wasting away and dying. My remarks relate rather to the remarks at the end of the paper than to the cases.

Dr. Richardson: I have distinctly limited this operation to certain conditions. I have recognized in the paper the disadvantages of the procedure. I do not advocate it except in very rare conditions. I do not think that any surgeon of any judgment whatever would have subjected the second case to any other operation. I am positive as I can be that the anæsthesia of a laparotomy would have killed him. I have seen them die time and again after that operation. I do not mean to say that rectal drainage is not dangerous, and that we do not have these disastrous consequences. I do not believe that rectal drainage is as dangerous as laparotomy where the patient is moribund.

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THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

Meeting of February 11, 1892. Wm. P. Northrup, M.D., Chairman; Floyd M. Crandall, M.D., Secretary.

A CASE OF SPINA BIFIDA.

was presented by Dr. A. Jacobi.

The patient was two months of age, and the tumor, which was present at birth, was growing rapidly. The wall was becoming thin over the central portion, and without operation would soon burst and the child die. There was also talipes valgus, and the sutures and fontanelles were very large.

A demonstration was given by Dr. M. Putnam Jacobi, to prove the fact that when the lung is collapsed, percussion yields tympanitic resonance, but when extremely inflated, exaggerated pulmonary resonance.

DISCUSSION ON DIPHTHERIA.

Dr. Joseph E. Winters read a paper entitled

THE BEST APPARATUS AND BEST DISINFECTANT FOR USE IN MOUTH AND NOSE.

The author assumed that the disease is caused by the Klebs-Lœffler bacillus: that it is primarily a local disease. The microbes elaborating in the membrane exudate a poison which is absorbed and carried into the circulation, the germ itself not being found in the blood or tissue. A point of vast importance in treatment is the fact that the specific germ on a perfectly healthy membrane does not provoke diphtheria. The primary indication, then, is not only to cleanse and disinfect the parts but to destroy the germs *in situ*.

The activity of the Klebs-Lœffler bacillus is impaired by even weak solutions of carbolic or boracic acids. The practical deduction from this is that at the outset we should attack the exudate or culture soil in order to prevent the microbic products from producing constitutional results. It is never safe, however, to employ means that will irritate the surrounding parts, for fresh points of infection are thus made. The only means of successfully disinfecting the throat and preventing sepsis is by irrigation.

For this purpose the child should be placed on the side of the crib and a rubber sheet arranged to catch the drippings, but he should under no circumstances be lifted from the horizontal position. If a Davidson syringe be used the cleansing will be more complete, and will meet with less resistance than with any other apparatus. The irrigating should be done through the nostrils, for they cannot be tightly closed like the mouth, and with the first flow of fluid from the nose into the throat the mouth is opened and everything is discharged through the nostrils and mouth. It is occasionally necessary to syringe through the mouth. In this case the tip should be removed and the tube passed along the inner side of the cheek behind the last molar to the pharynx. In ordinary cases irrigation every two hours is sufficient, in severe cases it must be practised every hour, day and night.

For this irrigation nothing has proved as satisfactory as a ten per cent. solution of peroxide of hydrogen or a saturated solution of boracic acid. The passages must be thoroughly cleansed at each washing, and one-half to one pint of solution will be required.

In the local treatment of diphtheria is included medicated steam from a croup kettle, and the inhalation of sulphurous-acid gas through the burning of sulphur candles. For medicating the water in the croup kettle, add to one pint of water one ounce of spirits of turpentine and two drachms of oil of eucalyptus. In the use of the kettle plenty of rubber tubing is necessary, and a gas stove is the best means of generating the heat.

Dr. H. D. Chapin read a paper on

QUARANTINE AND DISINFECTION IN LIMITED APARTMENTS.

The management of diphtheria in tenement-houses formed the chief subject of consideration. The furniture should be removed as far as possible and the child placed on a cheap cot instead of a bed or sofa. The mother, if she must also attend the rest of the family, should wear a wrapper, which can be removed upon leaving the room. The area of contagion, when ventilation is good, is small, probably but a few feet. If the germs can all be destroyed *in situ*, there will be no contagion. Old cloth or pieces of cheese cloth should be used about the patient and burned as soon as soiled. All articles of bedding should be shaken on the roof and exposed for a considerable time to sunlight and air, the two most powerful antiseptics at our command. The walls should be washed down with a sublimate solution, 1 to 1000, and the same should be used in sinks and closets. Papered walls may be cleaned with stale bread crumbs. The burning of sulphur, while it may not be of great efficacy, is undoubtedly of some value. It leads to thorough subsequent ventilation at least. The throat and nasal passages of the other children of the family should be frequently sprayed with mild antiseptic solutions.

DR. L. EMMETT HOLT read a paper upon,

FEEDING IN DIPHTHERIA: METHODS OF FORCED FEEDING.

In a disease like diphtheria, where the principal cause of death is asthenia or exhaustion, no question can exceed in importance that of nutrition and stimulation. The most common error in this direction is over-feeding and over-stimulation during the first few days. It too often happens that when the critical period arrives the over-burdened stomach refuses to do its work. The subject may be considered under these three heads: (1) Character of food and stimulants, (2) frequency of administration, (3) forced feeding.

As to character of food little need be said except to condemn two articles frequently allowed, ice-cream and jellies, which interfere with taking more valuable food. The main reliance must be upon milk diluted according to the age of the child. Next to milk, beef broth, mutton broth, expressed beef juice, soft boiled eggs, milk toast, wine whey, oat meal or barley gruel. Junket with a little wine added, and kumyss, when the child will take it, are valuable additions to the list.

In regard to the stimulants, brandy is best, but we must be guided by the child's whims and give what he will take best.

Experiments with stomach washing show that the stomach is rarely empty sooner than two hours after a meal. It is a safe rule never to give food requiring digestion oftener than this. Stimulants and pre-digested food may be allowed at shorter intervals. The quantity of food given should be somewhat less than the child would take in health. It is best not to begin stimulants until they are indicated by the pulse or prostration, but they should then be pushed until the desired effect is produced, the only limit, in many cases, being the tolerance of the stomach. Unlike food, they should be given in frequently repeated doses. A careful record of the exact amount of food taken and retained should always be kept that we may know where we stand.

It sometimes happens that the child absolutely refuses all nourishment and stimulants. Coaxing, threats and commands are alike futile. Efforts to compel the child to take milk in teaspoonful doses results in the wasting of an immense amount of strength while little or nothing is accomplished. It is at this juncture that the question of forced feeding arises. Rectal feeding in young children, owing to irritability of the sphincter, is almost impossible. Much more efficacious, and with far less disturbance to the patient, is forced feeding by the mouth or nose. The difficulties are surprisingly small. The ordinary apparatus for stomach washing is all that is required, the method of procedure being the same as in that process. Unless there is much resistance the mouth is to be chosen. Completely peptonized milk is to be preferred. The operation should be repeated once in four hours. In this way a proper amount of nutriment can be introduced with far less worry and resistance than by the spoon method.

The operation was demonstrated upon a child of ten months, a sufficient amount of milk being introduced in about ten seconds.

DR. A. JACOBI spoke upon the subject of

CONSTITUTIONAL TREATMENT IN DIPHTHERIA.

He has been convinced of the value of bichloride of mercury in all forms of the disease, especially the laryngeal. He gives it in large doses; a child of six months will take a quarter of a grain a day with no untoward symptoms. Diarrhœa is rare, and is quickly checked by a few drops of paregoric. Stimulants should not be delayed until signs of heart failure appear, for when that condition has once developed the patient is almost certainly lost. Very large doses are sometimes required, and they should be increased until an effect is produced. The doses of digitalis, camphor and alcohol, as stated in the text-books are no guide whatever. If rejected by the stomach, they should be given hypodermically. One part of camphor dissolved in four parts of sweet almond oil may be given hypodermically with but slight local disturbance.

DR. AUGUST SEIBERT demonstrated his method of

SUBMEMBRANEOUS ANTISEPTIC INJECTIONS.

If the Klebs-Lœffler bacillus generates a poison within and underneath the pseudo-membrane, that is the place to attack it. He has therefore devised an implement consisting of a number of hypodermic points set closely together on a small disc by which an antiseptic may be injected beneath the membrane. As an antiseptic, he employs very strong chlorine water. The method has now been in use eighteen months with strikingly surprising results. It is designed to supplement, not to displace, other local treatment, the injections being made but once a day, one or two, as a rule, being sufficient.

DR. VINEBERG approved of sulphurous-acid gas as it gives marked relief to the patient.

DR. J. LEWIS SMITH used a stronger solution of peroxide of hydrogen than that proposed by Dr. Winters. Stronger solutions can be used in the throat than in the nose.

DR. STOWELL thought that the strength of the solution must be graded to suit the case. Peroxide of hydrogen if too strong will cause irritation.

DR. HOLT said that in a personal trial he had found a ten per cent. solution too strong for comfort.

DR. C. W. ALLEN described a screen of plain glass which he had seen used in Germany. It is held before the patient's face during the examination of the throat. It does not obstruct the view and is an admirable protection to the physician if the patient coughs.

THE CHAIRMAN urged that, inasmuch as we now know the specific germ which causes diphtheria and its habitat, we definitely consider what remedies are for its destruction, and what are for the simple comfort of the patient; that the physician spend his time destroying the germs which are thrown off directly from the patient's mouth, and less to blaming sewer gas and germs constantly floating in the air.

DR. FLETCHER has made a series of examinations in tenement-houses and had found the specific bacillus in the air in a number of instances. In one house four cases developed on different floors along the same line of pipes.

Physician. — You seem to cough this evening with less difficulty.

Patient. — No wonder: I have been practising all day. — *Pharmaceutical Era.*

Recent Literature.

Leprosy. By George Thin, M.D. London: Percival & Co. 1891.

In his preface the author of this book states that one of its chief objects has been to "systematize, for the convenience of the medical profession, the knowledge that has been acquired up to the present time relating to the bacillus lepræ, its relations to the pathological changes peculiar to leprosy, and its important bearings on the etiology of the disease; and at the same time to place clearly before the reader the amount and nature of the evidence which can be adduced to show that leprosy is contagious." These objects have been well fulfilled in the little book before us; and it can be warmly recommended to any one who may wish to acquaint himself, at the least possible expense of time and trouble, with the best modern views of the nature of this disease.

The chapter on "history" bears the marks of careful compilation and much erudition, although it is somewhat longer and more critical than would have been looked for in a work of this kind.

With regard to the great prevalence of leprosy in India, — a subject that has of late aroused much interest in Great Britain, leading to the formation of the leprosy commission, — Dr. Thin says there can be no question, although it is impossible even to approach to accuracy in forming an estimate of the numbers of those affected.

The clinical appearances of the two types of leprosy, tubercular and nerve, are sketched with tolerable clearness, although we miss in these chapters, the vivid, sharply-cut picture that a very few writers on dermatology are able to produce with a few descriptive words.

In discussing the pathology of leprosy, the author records his conviction that the bacilli may be distinguished from those of tuberculosis by their microscopical aspects simply, in that the former are more unequal in breadth than the tubercle bacilli, and have a special and characteristic tendency to become club-shaped at one end and tapering at the other. The tubercle bacilli, on the contrary, have a fairly uniform thickness throughout. These are distinctions that have not hitherto been emphasized by observers, and should be verified with the utmost care. With regard to "giant cells," the author says he has not met with them in leprosy, with the exception of some shown him by Dr. Abraham, which he was convinced were nothing but the altered coat of blood-vessels. Typical Langhans giant cells such as are found in tuberculosis, are not, as a rule, seen in leprosy, but the large "lepra zellen" of Virchow are often referred to as giant cells, and of these Thin makes no especial mention. He ranges himself on the side of most other competent microscopists in declaring the proposition of Unna, that the bacilli are not, as a rule, enclosed in cells, absolutely untenable.

The chapter entitled "Is Leprosy Contagious?" we consider the most important in the book, in view of the reluctance evinced by so many medical men, in accepting what seems to us to need no further proof. Sixty-eight instances collected from various sources, are briefly mentioned, where the evidence of transmission of the disease from one individual to another is either conclusive, or extremely strong.

The chapter on the hereditary hypothesis is also well written, the author concluding that in the absence of proof the hereditary theory must fall, and with the establishment of the contagiousness of the disease, it is no longer necessary even as an hypothesis.

Isolation, in Dr. Thin's opinion, is to be practised with all possible care, although he appreciates the difficulties of carrying this out in a perfect manner. After pointing out the favorable influence of the law passed in Norway in 1885, rendering the segregation of lepers compulsory, he declares his belief that the best hope for India lies in the education of the people to a better understanding of the contagious nature of the disease, and in offering them every facility either for removal to an asylum or for isolation in their homes. We believe that the chief good to be accomplished by the leprosy commission, is an elaboration of the methods by which these aims, so well defined by Dr. Thin, may be attained.

Leprosy and Vaccination. By William Tebb. London: E. W. Allen. 1891.

This little pamphlet, written by a layman who is an opponent of vaccination in general, endeavors to show that compulsory vaccination has been responsible in great measure for the spread of leprosy in recent years. The author accepts the theory that leprosy is a bacterial disease, and considers at some length the evidence that it may be inoculated. He also shows that there is good reason for the belief that it may sometimes be transferred from individual to individual by vaccination — a proposition that would be combated by few possessed of any knowledge of the subject. What he does *not* prove is that vaccination is the chief factor in the spread of the disease, his evidence on this head consisting largely of the general impressions of merchants and medical men in the countries where it is endemic. While no scientific man would agree with the writer that vaccination, as well as all experimentation looking toward the discovery of better methods of treatment of leprosy should be discontinued, it must be conceded that the greatest care in performing the inoculations should be observed; and that the writer, while overstating his case, as is customary with all reformers, has rendered some service by his advocacy of the transmissibility of leprosy from individual to individual.

Botany: A Concise Manual for Students of Medicine and Science. By Alex. Johnstone, F.G.S. Lecturer on Botany, School of Medicine, Edinburgh. With 164 illustrations and a series of floral diagrams. New York: D. Appleton & Co. 1891.

This manual of 250 pages is intended as a textbook for a student who is at the same time taking a university course in Botany. It is not an elementary work and it is too condensed to be in itself interesting reading. It begins with a concise description of the morphology and physiology of plants, and follows with the principal peculiarities of the more important classes and genera, special attention being given to cryptogams. A good glossary and index add much to the value of the book.

Consumption: How to prevent it and how to live with it. By N. S. Davis, Jr., A.M., M.D. Philadelphia and London: F. A. Davis. 1891.

Dr. Davis writes especially for the instruction of consumptive patients. His book is very readable and contains much valuable information in general hygiene, exercise, choice of occupation, climate, etc.

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INTESTINAL DYSPEPSIA.

THERE is a form of dyspepsia which is predominantly intestinal. Chymification may be normally performed in the stomach (as is shown by the syphon), but the work of the stomach is not properly supplemented by those processes in the small intestines which elaborate the chyle and render it fit for absorption. Every physician in general practice has had cases which correspond to the following description: The patient has little or no trouble with the primary or gastric digestion, but some few hours after meals has attacks of flatulence with abdominal pains of greater or less severity, and this may be followed by diarrhœa.

Eructations of gas and the expulsion of flatus do not necessarily indicate faulty intestinal digestion, for the trouble may be purely of gastric origin (type — gastric dilatation, gastric neurasthenia), and it sometimes requires the utmost sagacity of the physician to determine in a given case the parts to be assigned respectively to gastric and intestinal indigestion. Often the flatulent distention can be topographically located in coils of the small intestine or in the colon, while the stomach appears to be empty, or, at least, not distended. Gastrectasis can be differentiated by symptoms of its own; and always the use of the stomach syphon is an aid to accurate diagnosis by the certain information which it furnishes as to the quality of the gastric contents.

A peculiarity of intestinal dyspepsia is that it is principally the starchy and saccharine articles of food that give trouble. This might *a priori* be inferred, for the peptonization of albuminoids is effected chiefly in the stomach, which, in the kind of dyspepsia under consideration, is supposed to be in a relatively normal condition. While then it is quite possible that the ingestion of an excess of albuminoids, over-fatiguing the stomach, may cause intestinal embarrassment (and it is also possible that in rare instances exaggeration of the ordinary peristaltic movements may effect the same result, the ingesta being hurried out of the stomach before the work of chymification is half completed), ordinarily and for all practical purposes the name intestinal dyspepsia may be considered as synonomous with starchy or amylaceous dyspepsia.

Is there a "buccal" or "salivary" dyspepsia due to lack of saliva? The relative part to be assigned to saliva in the conversion of starches has not yet been determined; it is doubtless insignificant as compared with that of the intestinal and pancreatic secretions.

The bile, pancreatic juice and the intestinal juice are the influential factors of intestinal digestion. Deficiency or perversion of any one of these fluids may cause indigestion, and it is probable that atony of the intestinal muscle — as a part of general muscular atony — may in some instances have an important rôle in indigestion.

The influence of bile on the intestinal digestion has long been known. Constipation and flatulence generally accompany deficiency or absence of bile; the rapid emaciation that is seen in individuals or animals with biliary fistula also confirms the traditional physiological notion that the bile is an important agent in the emulsification of fats. Functional or organic derangements of the liver, then, may cause intestinal indigestion.

Deficiency or perversion of the pancreatic secretion will seriously derange chylification. The pancreatic juice possesses ferments which act on all the elements of food; albuminoids, carbo-hydrates and fats; the intestinal juices also transform starches and proteids. These are facts which are sufficiently trite; unfortunately it is difficult, if not often impossible in a given case of dyspepsia, whose seat has been referred to the small intestines, to determine to which of the three factors of the intestinal digestive process the cause belongs, or whether all the glandular secretions may not be about equally at fault. There are, it is true, some symptoms which point clearly enough to intestinal atony by acholia; we have, however, no symptoms which indicate with equal clearness failure of function of the intestinal glands or pancreas. But even if we knew the morbid states productive of the digestive disturbances, we should seldom be able to influence these states directly by remedies; in other words, therapeutics must be symptomatic rather than etiological.

The brief hints which we shall give as to treatment will be comprised under the following heads: (1) Dietetics; (2) antiseptics; (3) eupeptic remedies; (4) purgatives.

(1) As this form of dyspepsia is generally predominantly a dyspepsia of starches, there is a leading indication to abstain from amylaceous and saccharine articles of diet. There should be a maximum of albuminoids — meat, eggs, fish, and a minimum of carbo-hydrates and fats. Brilliant results have been obtained from a diet of raw meat — six, eight, even ten ounces of lean beef or mutton reduced to a pulp and cooked but slightly, if at all; to be eaten well seasoned, with a little bread, but without vegetables.

Thin slices of underdone roast meat, fresh broiled fish, raw oysters and other shell-fish, soft boiled eggs, boiled ham. The latter, with sour-kraut, smoked herring, a little stale cheese, etc., has been recommended as being especially unlikely to undergo putrefactive decomposition.

There is no doubt that patients who have been the greatest sufferers from flatulence and colic, the result of intestinal indigestion, have often been marvellously benefited by this meat *régime.* For drinks, dilute soups, broths, watery solutions of the popular meat-extracts, are always preferable to milk, which is too liable to fermentation. Ales and all other fermented liquids are of course to be eschewed. The same may be said of puddings and gruels. If milk is to be proscribed, milk curds (without sugar) are not always objectionable.

Chronic indigestion is generally the result of flagrant dietetic errors. The individual has at some time indulged his appetite to excess, and done this habitually; the digestive organs have become overburdened, and functional derangements, if not gross organic lesions, have resulted. Or food of a poor quality and indigestible, has overtaxed the apparatus of digestion. Here the main treatment must still be dietetic — the only indication capable of fulfilment being to give rest to the damaged organs till *restitutio ad integrum* takes place. The patient must be compelled to live sparingly, and on the kinds of food (principally azotized) which will digest best, and give the least trouble.

(2) There is no doubt as to the utility of antiseptic remedies (that is, remedies which prevent and counteract morbid fermentations) in intestinal dyspepsia. Combinations of chalk, bismuth, magnesia, salol, salicylate of soda, aromatics, are often beneficial. The patient may take after each meal a powder consisting of five grains each of prepared chalk, magnesia and salol, or five grains each of salicylate of bismuth and naphthol. The addition to these powders of a little powdered nux vomica or columbo is often beneficial, especially where there is an indication to stimulate sluggish contractility. Turpentine is a remedy which some think has quite a wide range of usefulness.

Are there ever instances where exaggerated peristaltic movements are the principal cause, the ingesta being hurried out of the stomach into the intestines before gastric peptonization is half completed? If such cases could be diagnosticated, there would be a clear indication for opiates and other remedies which diminish peristalsis.

(3) Among the "eupeptic" remedies (that is, remedies which favor digestion), must be mentioned, as being of predominant importance in the dyspepsia under consideration, malt-extracts and pancreatin. Malt-extracts contain diastase and are believed to be of benefit in amylaceous dyspepsia; this belief seems to be sanctioned by clinical experience. To be efficacious they should be given with the food.

Pancreatin, or pancreatic extract, has the earnest commendation of Dr. William Roberts in the *British Medical Journal.* He directs the usual dose (a teaspoonful of the extract, or ten to fifteen grains of purified pancreatin) to be given with fifteen grains of bicarbonate of soda two hours after a meal when intestinal digestion might be supposed to have fairly begun. Gubler recommended pancreatin to be given in capsules of wax, with the expectation that they would pass through the stomach unattacked by the gastric juice and deposit their contents in the duodenum after destruction of the waxy coating. There are various pharmaceutical preparations which profess to contain the three ferments, diastase, pepsin and pancreatin. Some physicians claim to have derived benefit from these combinations; others look upon the pretentions of their proprietors as illusory. These substances, being ferments, easily spoil, nor is their stability always ensured by combining them with alcohol, which more or less modifies their properties.

(4) The utility of purgatives in clearing the intestines of putrefying *débris,* of gases, ptomaïnes and microbes is unquestioned, but they are not to be given as a matter of routine, and only when constipation, colic or other symptoms indicate their administration. The relief which often follows a mild cathartic is great. Of course, only the milder laxatives, and such as disturb digestion the least, are to be thought of. Rhubarb, senna, aloes, sulphur, cascara, magnesia are among the best. A favorite combination is equal parts of pulverized rhubarb and cardamon seeds; dose, a teaspoonful. Germain Sée prefers the old formula of sulphur, cream of tartar and magnesia, of each equal parts; Dujardin-Beaumetz, the compound licorice powder. The aloin, strychnia, belladonna, and ipecac pill is an excellent one.

"The remedy," says Dr. G. B. Wood, "which we have found most effectual in the permanent cure of a disposition to the accumulation of flatus in the bowels, is an infusion made with half an ounce of columbo, half an ounce of ginger, a drachm of senna, and a pint of boiling water, and given in the dose of a wineglassful three times a day.

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TREATMENT OF NEURASTHENIA BY TRANSFUSION (HYPODERMIC INJECTION) OF NERVOUS SUBSTANCE.

At a recent meeting of the Paris Academy of Medicine (Session February 16, 1892), Constantin Paul reminded the assembly of the first communication of Brown-Sequard to the Society of Biology on subcutaneous injections of testicular liquid. In a number of instances a profound stimulation, an uplift of all the forces, followed; this lasted a considerable time, and was not followed by a corresponding depression. Constantin Paul compares this effect to what often takes place after injections of nervous substance into the subcutaneous cellular tissue.

The liquid which he used was a ten per cent. solution of the gray matter of a sheep's brain: this was first macerated for twenty-four hours in glycerine water, then filtered through Darsonval's carbonic acid filter, which sterilized it. The resulting liquid was absolutely transparent.

M. Paul first injected one cubic centimetre of this liquid under the skin in the lumbar region, and subsequently increased the quantity to five cubic centimetres every third or fourth day, using all the antiseptic precautions necessary. The injection was perfectly tolerated, producing no local or general reaction. Out of more than two hundred injections practised on eleven patients, he failed in any instance to witness any phlegmon or pustule following the injection.

The patients on whom he performed these injections were classed as follows: Four were victims of tabes; one was a case of permanently slow pulse: three were suffering from ordinary neurasthenia; three were neurasthenic chlorotics. There was in all a general tonic effect characterized by increase of strength, appetite and weight, restoration of spirits and *bien-être*, disappearance of pain, sexual impotence and insomnia.

M. Constantin Paul concludes that "injections of the gray cerebral substance constitute a true tonic for the neuropathic." "The neurasthenic," he adds, "is a patient whose nervous system resembles an accumulator which it is impossible to charge. As long as the disease lasts, the neurasthenic eats to no good purpose, for he cannot transform his food into force. On taking the least exercise, the muscular, nervous and other forces are exhausted.

"The injection of nervous substance promotes the utilization of foods and their assimilation. The nervous system becomes a condenser which can be charged, and the patient acquires a quantum of forces which he can dispose of at his will. But the nervous force is the first to develop, and this leads to the development of the other forces, and the ability to do work of the muscles and brain."

Great expectations may certainly be entertained of this mode of treatment, if one is prepared to believe, as Dr. Paul affirms, that "the injections ameliorate and cure the neurasthenic and enfeebled more rapidly than the ordinary agents of the materia medica, iron, arsenic, phosphates, opium and alcohol," and if "their action is more rapid and more certain than that of hygiene alone, of hypnotic suggestion, and of electricity"!

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MEDICAL NOTES.

Census of New York City.— The returns from the State census for New York city, recently completed, not including inmates of public institutions, gives the city 1,800,891 inhabitants. The Federal census of 1890 showed a population of 1,515,501.

Electrocution in Danger. — The New York State Assembly Committee on Codes has agreed to report favorably the bill amending the capital punishment act of the State. The bill does away with the electrical chair and substitutes hanging.

Typhus Fever in Philadelphia. — Two cases of typhus fever are reported from Philadelphia. The patients are sisters, one of whom had recently arrived from New York, where she was said to have been a nurse in Bellevue Hospital.

University Changes.— The Chair of Obstetrics in the Medico-Chirurgical College of Philadelphia, has become vacant through the resignation of Dr. F. E. Montgomery, who will hereafter devote himself entirely to the Chair of Gynecology. Dr. William G. Anderson, Director of the Brooklyn Normal School of Physical Education, has been appointed physical instructor at Yale.

The International Medical Magazine. — The first number of a new medical monthly with the above title has just appeared. It is edited by Judson Daland, M.D., and published by the J. B. Lippincott Company. Each number is to contain more than a hundred pages, and is to include original contributions, clinical lectures and reviews of recent medical publications. The first issue contains much interesting and valuable reading.

The New York Student Relief Bill. — There appears to be danger that the value of the new law in New York requiring examination in order to obtain a license to practise medicine, may be diminished by a bill which has been introduced to relieve several medical students from the necessity of passing the State medical examination. There appears to be no reason why these students should be exempt; and if it is possible to enact similiar laws yearly, the value of the original law will be very much diminished.

To Examine Russian Emigrants. — The Hamburg-American Packet Company, in conjunction with the Prussian authorities, has arranged that all Russian emigrants intending to come to the United States in the Hamburg-American steamers shall be inspected before entering Prussia. Any of these Russians who are suspected of being infected with typhus fever or other diseases will not be allowed to enter the country. All the emigrants' lodgings in Hamburg will be carefully supervised, and another examination will be made by two physicians under the direction of the United States Consul at Hamburg, before the emigrants are permitted to embark upon the steamers.

Tuberculosis in Buda-Pesth. — Professor Fodor shows that Buda-Pesth has the greatest relative mortality from tuberculosis of any large city in the world. There are about 600 deaths from this cause in each hundred thousand inhabitants yearly, whereas in Vienna there are about 550 and in London less than 200. He considers that the bad pavement and insufficient street-cleaning have much to do with this large mortality.

Vienna General Hospital. — The Austrian Parliament has been considering the advisability of enlarging this already gigantic institution. There is no doubt that most of the buildings now in use are not up to modern standards of hospital construction. It is proposed to add to the institution the military barracks which now adjoin it.

Lectures of the Royal College of Physicians, London. — The series of lectures for the present year are as follows: — *Milroy:* by Dr. Francis Warner, "On the Physical and Mental Condition of School Children." *Goulstonian:* Dr. Sidney Martin, "On the Chemical Pathology of Diphtheria, compared with that of Anthrax, Infective Endocarditis, and Tetanus." *Lumleian*, Dr. Pye-Smith, "On Certain Points in the Etiology of Disease."

Memorial to Sir Morell Mackenzie. — Lord Calthorpe, who has had charge of the fund for the erection of a memorial to the late Sir Morell Mackenzie, has announced that the fund will be devoted to the erection of a permanent addition to the Hospital for Diseases of the Throat, which was founded by Dr. Mackenzie in 1864, and with which he was connected until the time of his death.

Diphtheria in Different Countries. — The Chief of the Bureau of Medical Statistics of Brussels gives the following as the number of deaths from diphtheria in the principal countries of the world, per one thousand inhabitants: England 41, Belgium 44, Holland 53, Switzerland 59, Italy 79, France 80, Germany 100, Scandinavia 110, Spain 112, Austria-Hungary 116, America 140.

The Military Step and its Physical Effects. — A French army surgeon has been making some investigations, says the *Medical Press*, into the physical effects of the military step upon armies on the march. He affirms that the regularity of the step causes the indefinite repetition of a shock to the bones and the brain, infinitely more deleterious than an irregular walk, and to this regular repetition of the shock to the same parts of the body is due the peculiar aches, pains, and sickness among the troops. In a one-day march this shock is repeated 40,000 times, and often the strongest men, who can walk the same distance without difficulty when not in line, succumb to the strain in two or three days. With regard to the remedy, the author suggests the insertion of a rubber heel in all military boots. The heel has been tried at his instance in the French infantry, and the result has been found to afford great relief to the men. The experiments with the rubber heel are still in progress, so that in time we may look for further facts in connection with this subject.

The Health of the Survivors of the War. — In a recent number of the *Forum* Dr. John S. Billings endeavors to show the effect of military service upon the health of the men in the two armies. Although a large number of men were more or less seriously affected by their services in the field, there were undoubtedly some who derived benefit from the life in the open air and regular exercise. The average death-rate since the close of the war has been between thirteen and fourteen per thousand. It would seem that the average death-rate of the survivors of the war for the past twenty years has been a little higher than that of the average population of males of the same age. In the State of Massachusetts, according to available statistics, he finds that the proportion of sick men is at least four times greater among veterans than it is among other males of the same age. It would seem, therefore, from the figures which he used that the health of the veteran, in this State at least, was unfavorably influenced by his service. This conclusion is, however, only provisional, and does not seem to accord with his personal opinion derived from contact with a large number of surviving veterans. Statistics are so meagre that it is impossible to arrive at a definite conclusion on this subject.

BOSTON AND NEW ENGLAND.

The West End Nursery and Infants' Hospital. — The ninth annual report of this institution shows that during the year fifty-four children were cared for in the nursery department and forty in the hospital. Eighteen mothers were admitted.

Births in Boston. — From the tables recently issued by the acting registrar, it appears that in Boston during the year 1891 the total number of births was 14,206, of which 7,292 were males, and 6,914 females. The daily average was 39.05. There were 245 colored births, of which 109 were male and 136 female. There were 142 pairs of twins, and four sets of triplets. There were two Chinese children born, one male and the other female.

A Crematory in Boston. — Arrangements have been completed for the transfer of the control of the Worcester Cremation Society to Boston. The company is duly incorporated under State laws and has a capital of $25,000. It is said that 150 stock subscriptions have been made in Boston, and that a lot will be purchased and a crematory erected. The following are the officers: Clerk, Dr. John Homans, 2nd; treasurer, John Ritchie; directors, Dr. James R. Chadwick, Dr. Henry P. Bowditch, Augustus Hemenway, Russell Sturgis, Jr., and Babson S. Ladd, all of Boston; Stephen Salisbury and Dr. J. O. Marble of Worcester. There are also two women on the directorate.

Massachusetts Legislature. — In the House the cigarette bill was amended so that the manufacture and sale of those cigarettes only is forbidden which are wrapped in paper covers. The prohibition seems now to be reduced so as to apply only to the smoking of paper. The bill was laid over until this week. The Committee on Public Charitable Institutions has reported a resolve to appropriate for the Massachusetts Charitable Eye and Ear Infirmary, and has reported leave to withdraw on the petition for the appointment of a woman on the Board of Public Institutions in Boston.

Marine Hospital on Martha's Vineyard. — The Government has accepted six acres of land at Vineyard Haven as the site of the new Marine Hospital. The tract is situated on the bluff across the harbor from the village of Vineyard Haven.

NEW YORK.

TYPHUS FEVER. — Up to March 10th there were reported 153 cases of typhus fever, among which there were 13 deaths; two of the deaths being among the attendants on the sick in the hospital. At that date there were at North Brother Island 82 typhus patients and about 80 quarantined individuals who had been exposed to the infection of typhus. On the following day there were two additional deaths and three new cases reported. The Board of Health has engaged in an investigation of the hospital at North Brother Island, serious charges having been made as to the manner in which patients were treated there.

BEQUESTS TO INSTITUTIONS.— By the will of Major-General George W. Cullum, recently decreased, $6,000 is left to the Woman's Hospital and $10,000 to the New York Cancer Hospital, which the wife of Gen. Cullum had liberally endowed.

TRAINING SCHOOL FOR MALE NURSES. — The graduating exercises of the Bellevue Hospital Training School for Male Nurses took place on the evening of March 9th. The Training School for Male Nurses was opened for the reception of pupil nurses on December 17, 1888. In 1891 the school graduated eighteen nurses. This year there are seventeen graduates. There have been 698 applications for admission, 166 probations have been accepted, and there are now 56 pupil nurses on the rolls.

Miscellany.

THE PADDOCK BILL FOR PURE FOOD AND DRUGS.

THE Paddock Pure-Food bill as recently passed by the Senate provides for the organization, in the Department of Agriculture, of a section, to be known as the food section of the chemical division, whose duty it shall be to analyze, or cause to be analyzed or examined, samples of food or drugs offered for sale in any State or Territory other than where manufactured, or in any foreign country, provided they be in original and unbroken packages. It prohibits the introduction into any State or Territory, from any other State or Territory or foreign country, of any article of food or drugs that is adulterated or misbranded, and makes the act of doing so a misdemeanor, punishable by a fine not exceeding $200 for the first offence and not exceeding $300 for each subsequent offence, and by imprisonment for one year.

The term "drug," as used in the act, is to include all medicines for internal or external use. The term "food" is to include all articles used for food or drink by man, whether simple, mixed, or compound. Drugs are to be considered adulterated when they differ from the standard of strength, quality, or purity recognized in the United States Pharmacopæia or other standard works, or when in imitation of and sold under the specific name of another article; when mixed, colored, powdered, or stained so as to deceive the purchaser; when poisonous or injurious ingredients are added; when the article consists, in whole or in part, of a diseased, filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food.

Articles of food or drugs that do not contain any poisonous ingredient shall not be deemed to be adulterated in the case of mixture or compounds under distinctive names; or in the case of articles labelled, branded, or tagged so as to indicate plainly that they are mixtures, compounds, combinations, or blends; or when any matter is added so as to fit the article for carriage or consumption and not to increase its bulk fraudulently or to conceal its inferior quality; or where the food or drug is unavoidably mixed with some extraneous matter in the process of collection or preparation.

Every person who manufactures for shipment and delivers for transportation, from any State or Territory to any other State or Territory, any drug or article of food, and every person who exposes such articles for sale, is required to furnish samples to agents of the Secretary of Agriculture. A refusal to do so is punishable by a fine not exceeding $100 and not less than $10, or by imprisonment from 30 to 100 days, or both.

The manufacturer or seller (knowingly) of adulterated, impure, or misbranded articles of food shall, in addition to those penalties, be adjudged to pay all the necessary costs and expenses of inspection and analysis.

The act is not to be construed to interfere with commerce wholly internal in any State or with the exercise of police powers by the States. Adulterated articles transported or being transported from one State to another for sale, and still in unbroken packages, may be proceeded against in the United States District Court by a process of libel for condemnation and may be sold and the proceeds paid into the Treasury.

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THE TREATMENT OF THE CRIMINAL INSANE.

AT a meeting of the New York Medico-Legal Society, March 9th, Mr. J. T. Graham, of Virginia, read a paper entitled, "What should be Done with Criminals who are Acquitted for Crimes on the Charge of Insanity?" He contended that the number of prisoners released on the plea of insanity was increasing at such an alarming rate that the country was being overrun with the impostors who only feigned insanity at their trial, and with persons who were really insane and were dangerous to the community. He proposed that every person who was guilty of murder, but who was adjudged insane, should be compelled to remain in an asylum for at least ten years. If, during the last five years of this term of confinement they should show no signs of insanity, they should be released. If they did, however, display any symptoms of insanity, they should not be allowed their freedom until five years after such symptoms ceased.

After some discussion of the paper by others, Judge A. L. Palmer, of St. John, spoke of the manner in which such persons were treated in the Dominion of Canada. He said that if a criminal were adjudged insane in the courts, he was incarcerated in an asylum, and was kept there until the Governor-General was pleased to release him. If, after some time, the prisoner was considered of sane mind by those in charge of him, the Governor-General appointed a commission of experts to examine into the case, and if it were reported that the prisoner would not be likely to endanger society on account of his mental condition, the Governor-General would, if he saw fit, release him.

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THE WATER-BED AS A MEANS OF AFFECTING THE TEMPERATURE OF THE BODY.

Dr. H. C. Wood[1] calls attention to the water-bed as a means of heating the human body during collapse and cooling it during fever.

In cases of collapse and subnormal temperature occurring during advanced stage of typhoid fever, the severe forms of bronchitis, etc., he has been accustomed to employ an india-rubber water-bed, about half the width of the ordinary mattress. It is placed upon the bed, alongside the patient, partially filled with water at a temperature of 140° to 150° F., and covered with blankets, upon which the patient is laid. The weight of the body carries it down and forces the water up at the sides, so that the person is partially surrounded by the heated water. The mass of the water, and the protection of the blankets, prevent the loss of heat, so that the mattress keeps hot for many hours. When the heat of the body has reached 98.5° F., the patient may be lifted off and laid alongside of the water-bed, which being covered by the same blankets as are over him will keep the temperature up to the normal.

The success in heating the body with this contrivance suggests that the water-bed may also be used instead of the cold bath for reducing temperature. All that would be necessary would be to have the water-bed supplied with two nozzles, instead of the ordinary aperture, and an india-rubber tubing or hose fastened to each nozzle, connecting the one with the spigot, the other with the outlet of the neighboring bathtub or stationary washstand. In this way, without labor or trouble, water of a constant temperature of 40° to 50° F., at least in winter, could be kept in the bed, and it would be very easy to run the water through ice if it were necessary to get further lowering of the temperature.

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BANANA FLOUR.

In the *Scientific American* for October 10th, mention is made of the need of a flour for domestic purposes made from the banana.[2] The author of the article estimates that in Jamaica alone, from whence about one-third of our banana supply comes, the waste in the fruit amounts to several hundreds of thousand bunches per annum, and this, too, with less than one-tenth of the available fruit-producing land under cultivation.

Undersized or undeveloped bunches are rigorously cast out by the buyers, and at many ports these may be had for the asking or at a merely nominal price.

Von Humboldt has estimated that thirty-three pounds of wheat, or ninety-nine pounds of potatoes require as great a space for their production as do 4,000 pounds of bananas; and that three good bananas contain as much nutriment as does a fourteen-ounce loaf of bread.

While this "bread of the tropics" will withstand the amount of handling necessary to transportation to our northern markets, by means of our rapid freight delivery systems, it will not withstand a much longer series of shipments. At present the finest flavored bananas are almost unknown in northern Europe, not because the fruit is unappreciated, but because after transportation to those countries the fruit is in an unmarketable condition. So that from this reason two lines of inventions are sorely needed in the West Indies having to do with banana culture. With these the banana output would soon be doubled, and in time might easily be increased tenfold. These two needed inventions are a dessicating and a flour or meal making process. The former is at present more in demand, so that in those regions the traveller hears the cry continually on every large plantation, "Oh! if some one would only invent and perfect a drying or preserving process that could be depended upon."

The man or men who can put before the banana growers of the West Indies, who annually sent to the United States $4,000,000 worth of the fruit, any system which will do for the banana what is now done for the fig, grape, or the dried currant, or who can succeed in treating the fruit as well as peaches, apricots, or prunellas now are, will be the possessor of a wealth-producing invention. And the same may safely be predicted of the system that will succeed in putting into the meal or flour a fair portion of the marvellous sustaining and nourishing powers which make the banana the king among fruits.

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[1] University Medical Magazine, March.

[2] Sanitarian, February.

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THERAPEUTIC NOTES.

Hydrastinin. — Strassmann[1] presents a paper upon this drug, which is to be distinguished from hydrastin. The dose is: in form of pill, one-half grain; in subcutaneous injection, one to two grains. The results of administration in twenty-seven cases lead him to believe it to be a very valuable remedy in the menorrhagias and metrorrhagias due to various pathological conditions so often met with in gynecological practice. At present, however, the remedy is quite expensive.

Bananas in Chronic Bronchitis. — For chronic bronchitis with scanty expectoration the use of banana-juice has been recommended.[2] The juice is prepared by cutting up the bananas in small pieces, and putting them, with plenty of sugar, in a closed glass jar. The latter is then placed in cold water, which is gradually made to boil. When the boiling point is reached, the process is complete. Of the syrup so made, a teaspoonful every hour is the proper dose.

Acetanilid for the Preservation of Solutions. — Keenan[3] recommends the addition of a small amount of acetanilid to solutions of alkaloids to prevent fungoid growths.

The Administration of Chloroform. — Gisevius[4] describes a method of administering chloroform by the drop-by-drop method which has been used by several surgeons in Europe.[5] This consists of giving the chloroform in drops only, continuing for five or ten minutes until the patient is completely narcotised. The advantages of this method are, absence of the reflexes proceeding from the mucous membranes, the absence of the stage of excitement and the small amount of chloroform necessary. At the Augusta Hospital no case of cardiac syncope or failure of respiration have occurred since the method was introduced.

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[1] Deutsche med. Wochenschrift, 1891, No. 47.

[2] Medical and Surgical Reporter, September 5, 1891.

[3] American Druggist, December.

[4] Medical Press, February 10.

[5] Brandt. Centralbl. f. Chirg., No. 47, 1891.

With regard to the pure chloroform of Pictet, Bardeleben finds that it acts more quickly and in a milder manner than the old, and that less is required. Köite, however, had had a death from the purified drug in a healthy patient. This case strengthened his belief that deaths from chloroform were not, as a rule, due to any impurity in the drug used, but to the individual characteristics of the patient. Hahn gave chloroform by gradual droppings; the anæsthesia was very satisfactory, even in drinkers. He let about sixty drops per minute fall from an ordinary drop bottle upon the mask.

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Correspondence.

LETTER FROM JAPAN.

Yokohama, February 9, 1892.

Mr. Editor: — The Central Board of Health for Japan operates in the capital, Tokyo, under control of the general government. It is composed of physicians, chemists, jurists and other officials. This board is an advisory council for the executive authorities. Its officers go to various parts of the empire for sanitary inspection and supervision. In each of the forty-five Ken (or provinces) of the country, is a local Board of Health of similar construction and functions, with analogous relations to the local government.

There is also a parallel organization known as "The Sanitary Association," which has the approval of the government, but no formal official recognition. Its work supplements that of the Board already mentioned: such voluntary assistance is especially valuable during epidemics. This society publishes a monthly "Journal" in the Japanese language. This publication has about fifty pages (12mo); several articles are accompanied by cuts showing plans of contemplated works, and forms of apparatus. A large number of different subjects more or less directly connected with sanitation are discussed in each issue.

A recent number of the *Sei-i-kai* (Medical Journal) contains some interesting matter republished as follows in the *Japan Mail:* "Dr. J. Sakaki contributes a paper containing the results of experiments carried on by him to determine whether rice in certain conditions has any poisonous properties. These experiments seem to have been suggested by an idea that possibly *kakke*, that disease so serious in Japan, might be due to rice-poisoning. Dr. Sakaki began his investigations in 1888. He tells us very simply that, finding the intervals of his regular work insufficient for the purpose, he resigned his position in the Imperial University, and devoted himself wholly to experimenting. He commenced by examining the fungi found on ears of rice, and then he passed to "red rice," that is to say, rice that had changed its color during cultivation. But the results obtained in these cases were negative. Success attended him, however, on proceeding to examine mouldy rice, commonly called *sawate-mai*. Mouldiness in rice is caused by rain, when it is called *umore-sawate;* or by simple moisture, when it is *fuke-mai;* or by some unexplained local influence, when it is called *mosu-mai*. It appears in the form of yellowish gray spots, and Dr. Sakaki speaks of grains thus marked being mixed with the rice eaten every-day by Japanese. He made various investigations to determine how the spots were produced, but the results are not yet published, though he foresees that they will be of practical value in respect to the storing of grain. There seems to have been considerable difficulty in extracting the supposed alkaloid poison from the rice, 2,500 grammes of mouldy rice giving only 0,299 gramme of the alkaloid, but the tests made with the latter upon frogs and rabbits go to prove very clearly Dr. Sakaki's conclusions, namely, that mouldy rice contains a small quantity of poisonous principles, which act slowly, on the nerve centres for the most part, and the chemical composition of which is as yet unknown.

"Dr. Kusaka's paper, originally published in the *Official Gazette*, discusses that very interesting and often referred-to question, whether flies assist to propagate epidemic diseases. Our readers probably remember the newspaper accounts of a panic caused in an American town last year by the suggestion that mosquitoes could carry poison from a Chinese leper throughout the whole community. Dr. Kusaka's researches go to prove that there was good reason for the scare. His experiments show that cholera bacilli, for example, may find a congenial nutritious fluid in a fly's abdomen, and may thus be transported from an infected place to the food which a healthy person is about to eat. This fact will furnish another argument to persons who maintain the uselessness of quarantine and other means of isolating sufferers from infectious diseases."

The number of cases of small-pox officially reported in Tokyo on the 30th and 31st of January was 102. During last month 1,073 persons were affected, with 272 recoveries and 91 deaths. The disease appears to be abating in Yokohama, the number of new cases reported being about ten daily. 80,000 persons have been vaccinated by the authorities during the prevalence of variola. The population of this city was 139,045, December 31, 1891.

Very respectfully, F. B. Stephenson,
Surgeon, U. S. N.

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A NEW, SAFE AND SURE METHOD OF EXPEDITING DIFFICULT CASES OF LABOR.

Allston, Mass., March 3, 1892.

Mr. Editor: — A correspondent, in your issue of February 25th, refers to my remarks February 4th on "A New, Safe, and Sure Method of Expediting Difficult Cases of Labor." Dr. Playfair, of London, in speaking of this modern oxytocic, says: "I am satisfied we have in it a most valuable addition to our resources, which is as yet not sufficiently appreciated, and which is destined to take a recognized place . . . in every way safer and more manageable than ergot." He also says, "I have never seen anything which led me to think that with due care, it has had any sort of injurious effect."

In the *Illustrated Encyclopædia of the Science and Practice of Obstetrics* (p. 150, ¶ 7), published in 1885, one year after my article was read before the Gynecological Society of Boston, the writer says, referring to this method: "It has the peculiar advantage of closely imitating the natural means of delivery, *and of being absolutely without risk to the child*. Nor is there any reason to think that it is capable of injuring the mother; . . . as its application is always intermittent, there is no time for it to inflict any injury on the uterine tissues." My eighteen years' practice and use of this method proves to me its perfect safety when intelligently used. It would seem, that the above evidence was satisfactory as to the safety of the method.

As to its being new: from time immemorial, by certain wild tribes of men, as in some civilized countries in modern times, assistance has been rendered women in labor in some manner, somehow, by pressure applied by various means, as well as by the hands of the accoucheur directly applied upon the abdomen, but not always safely or in an intelligent manner. The method, as formulated in my article, giving explicit directions how, and when, pressure should be applied, and the precautions relative to its use and application, was certainly new.

I do, most decidedly, take exception to the statement of your correspondent, "but all things were natural," in the patient he alludes to, she having taken ergot in the first stage of labor and been subjected to its physiological action, — a tonic contraction of all the muscles of the uterus until their complete exhaustion, — and there continuing a condition of complete inertia of the womb for twelve hours or more, the child still unborn; for neither the patient nor the child under those conditions could be in a natural condition.

A practitioner giving ergot as above, with such results, would be guilty of the grossest malpractice; for if you induce the physiological action of ergot on the womb, in a case as cited above, and the child is not born within an hour of the commencement of such action (the tonic contraction continuing), you will invariably have a dead child as a result of such a use of ergot. Such a practitioner would not be using the ordinary care or skill in the practice of the obstetric art which the law requires.

I do not believe that it was possible for the intermitting pains of labor, with the pressure applied intermittingly as claimed (without some other attending circumstance) to produce strangulation of the cord and death of the child; certainly not, before it had entered or passed the upper strait.

We very much doubt that the consensus of opinion of obstetricians of to-day would advise venesection, in the average woman in labor under like conditions as in the case cited, to the extent of overcoming the rigidity of the unyielding os, when a few doses of chloral hydrate would speedily and safely overcome the rigidity, leaving the patient in a more natural condition and without the shock and excitement and the anæmia which would be induced by the venesection. Yours very truly.

Marshall L. Brown, M.D.

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"KEEN'S OPERATION" FOR SPASMODIC TORTICOLLIS DUE TO IMPLICATION OF THE POSTERIOR ROTATORS.

35 W. 35th Street,
New York, March 8, 1892.

Mr. Editor: — Your issue for January 7th, current year, contains a stenographer's report of the proceedings of the New York Neurological Society, in which report mention is made of a case of wry-neck operated upon by me. Reference to the complete paper, *New York Medical Journal*, March 5, 1892, will show that full credit for priority in conception, execution and publication of the operation as done by me is, and should be, accorded to Dr. W. W. Keen of Philadelphia. I feel that the procedure is one of much value, — one which will be of use and of necessity in intractable cases of wry-neck due to spasm of the posterior rotators, — and I am sure that you will be glad to place before your readers the credit which is due Dr. Keen for his original and painstaking work.

Very truly yours,
Charles A. Powers, M.D.

METEOROLOGICAL RECORD,

For the week ending March 5, iu Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...28	30.64	17	23	11	81	86	84	N.	N.	21	12	N.	O.	T.
M..29	30.31	28	34	21	88	90	89	N.W.	N.E.	5	7	N.	N.	T.
T.. 1	30.14	33	35	30	81	100	90	N.E.	N.E.	21	33	O.	N.	.07
W. 2	30.25	17	19	15	94	84	89	N.	N.	23	23	N.	N.	.40
T.. 3	29.90	21	27	15	91	76	84	N.	N.	28	20	N.	O.	.48
F.. 4	29.72	33	40	26	77	57	67	N.W.	N.W.	14	18	F.	C.	.01
S.. 5	29.63	35	43	25	57	50	54	W.	W.	20	10	C.	C.	
☞	30.08	26	32	20	81	78	80			19	22			.14

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, March 5, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	921	350	14.85	24.64	4.07	1.10	5.28
Chicago . . .	1,099,850	—	—	—	—	—	—	—
Philadelphia .	1,046,964	514	191	13.68	14.82	3.61	1.33	4.94
Brooklyn . .	806,343	412	130	11.04	23.76	3.12	—	5.76
St. Louis . . .	451,770	167	56	10.80	10.20	1.20	4.80	3.60
Boston . . .	448,477	196	56	11.73	23.97	4.08	1.53	5.10
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	123	43	9.72	10.53	1.62	—	4.86
Cleveland . .	262,000	—	—	—	—	—	—	—
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	93	36	15.12	16.20	2.16	—	5.40
Milwaukee . .	240,000	—	—	—	—	—	—	—
Washington .	230,392	130	37	6.16	26.18	—	1.54	1.54
Nashville . .	76,168	29	11	3.45	27.60	—	—	—
Charleston . .	65,165	38	13	2.63	10.52	—	—	2.63
Portland . . .	36,425	19	1	—	26.30	—	—	—
Worcester . .	84,655	25	6	12.00	8.00	—	4.00	4.00
Lowell . . .	77,696	51	25	11.76	11.76	—	1.96	1.96
Fall River . .	74,398	40	14	10.00	30.00	—	5.00	—
Cambridge . .	70,028	24	10	12.50	16.66	—	4.16	—
Lynn	55,727	15	3	—	6.66	—	—	—
Lawrence . .	44,654	23	15	13.05	8.70	4.35	—	4.35
Springfield . .	44,179	—	—	—	—	—	—	—
New Bedford .	40,733	—	—	—	—	—	—	—
Salem	30,801	12	4	—	8.33	—	—	—
Chelsea . . .	27,909	13	5	23.07	7.69	7.69	—	7.69
Haverhill . .	27,412	6	2	16.66	16.66	—	—	—
Taunton . . .	25,445	16	7	12.50	6.25	—	—	12.50
Gloucester . .	24,651	3	2	—	33.33	—	—	—
Newton . . .	24,379	9	4	—	—	—	—	—
Malden . . .	23,031	5	2	80.00	20.60	20.00	—	40.00
Fitchburg . .	22,037	8	4	—	25.00	—	—	—
Waltham . .	18,707	7	1	—	28.56	—	—	—
Pittsfield . .	17,281	3	0	—	—	—	—	—
Quincy . . .	16,723	6	3	—	16 66	—	—	—
Northampton .	14,990	5	1	60.00	20.00	—	20.00	20.00
Newburyport .	13,947	6	3	—	16.66	—	—	—
Medford . . .	11,079	8	2	25.00	25.00	12.50	—	—
Hyde Park . .	10,193	5	1	—	40.00	—	—	—
Peabody . . .	10,158	5	3	—	20.00	—	—	—

Deaths reported 2,937: under five years of age 1,041; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 364, acute lung diseases 589, consumption 361, diphtheria and croup 137, scarlet fever 87, diarrhœal diseases 36, typhoid fever 32, measles 21, cerebro-spinal meningitis 17, erysipelas 14, whooping-cough 11, malarial fever 4, typhus fever 2, puerperal fever 2, small-pox (New York) 1.

From typhoid fever Philadelphia 14, Pittsburgh 6, New York and Lowell 3 each, Boston, Cincinnati, Washington, Fall River, Lawrence and Haverhill 1 each. From measles New York 14, Brooklyn 3, Philadelphia 2, Pittsburgh and Worcester 1 each. From cerebro-spinal meningitis New York 7, Brooklyn, St. Louis and Washington 2 each, Philadelphia, Nashville, Lowell aud Malden 1 each. From erysipelas New York 8, Cincinnati 3, Brooklyn, Washington and Northampton 1 each. From whooping-cough New York 4, Philadelphia 3, Fall River, Cambridge, Chelsea and Medford 1 each. From malarial fever Brooklyn 3, New York 1. From typhus fever New York 2. From puerperal fever Boston and Cambridge 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending February 27th, the death-rate was 23.4. Deaths reported 4,571: acute diseases of the respiratory organs (London) 461, whooping-cough 155, measles 123, diphtheria 49, diarrhœa 39, scarlet fever 31, small-pox (Liverpool) 1.

The death-rates ranged from 14.2 in Croydon to 34.0 in Burnley; Birmingham 23.6, Bradford 19.7, Hull 18.3, Leeds 21.4, Leicester 21.5, Liverpool 29.6, London 22.4, Manchester 25.0, Nottingham 27.4, Plymouth 23.1, Sheffield 21.7, West Ham 16.6, Wolverhampton 25.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 5, 1892, TO MARCH 11, 1892.

Major Alfred A. Woodhull, surgeon, U. S. A., having completed the duties assigned him by Par. 4, S. O. 303, A. G. O., December 30, 1891, will proceed from New York City, N. Y., to Hot Springs, Arkansas, and take station thereat as surgeon in charge of the Army and Navy General Hospital.

March 9, 1892. By direction of the President, the retirement from active service this date, by operation of law, of Colonel Basil Norris, surgeon, U. S. A., is announced.

First-Lieut. Philip G. Wales, assistant surgeon, U. S. A., is relieved from further duty at Fort Apache, Arizona, and will report in person to the commanding officer, Fort Bowie, Arizona Territory, for duty at that station, relieving First-Lieut. William N. Suter, assistant surgeon, U. S. A.

A board of medical officers to consist of Major David L. Huntington, surgeon; Captain Henry S. Turrill, assistant surgeon; Captain Henry S. Kilbourne, assistant surgeon; Captain Walter W. R. Fisher, assistant surgeon, is constituted to meet in New York City, on the 1st day of April, 1892, or as soon thereafter as practicable, for the examination of candidates for admission to the medical corps of the Army.

Captain Marlborough C. Wyeth, assistant surgeon, U. S. A., is relieved from further duty at Fort McIntosh, Texas, and ordered to Fort Supply, Indian Territory, upon the expiration of his present sick leave of absence.

Captain Jefferson R. Kean, assistant surgeon, U. S. A., is relieved from duty at Fort Robinson, Neb., and ordered to St. Francis Barracks, Mo., for duty, not later than March 25, 1892, relieving Major David L. Huntington, surgeon, U. S. A. Major Huntington, upon being relieved by Captain Kean, will proceed to New York City, for duty in connection with the Army Medical Board.

Captain Marcus E. Taylor, assistant surgeon, U. S. A., granted leave of absence for six months, on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 12, 1892.

F. B. Brathwaite, assistant surgeon, from Marine Hospital, Chelsea, and to the U. S. S. "Fern."

M. F. Gates, assistant surgeon, from the U. S. S. "Fern" and granted two months' leave.

Henry La Motte, assistant surgeon, ordered to the U. S. Receiving-ship "Vermont," at New York.

L. L. Von Wedekind, assistant surgeon, from the U. S. S. "Vermont," and granted three months' leave.

Edw. Kershner, medical inspector, orders to the U. S. S. "San Francisco" revoked.

Wm. K. Van Reypen, medical inspector, detached as assistant to Bureau, Medical and Surgical, and to the U. S. S. "San Francisco."

J. D. Gatewood, passed assistant surgeon, ordered to the U. S S. "Dolphin."

E. R. Stilt, assistant surgeon, ordered to the Naval Hospital, Philadelphia, Pa.

INTERNATIONAL PERIODICAL CONGRESS OF GYNECOLOGY AND OBSTETRICS.

The Belgian Society of Gynecology and Obstetrics, under the patronage of the Belgian Government, has taken the initiative in organizing "The International Periodical Congress of Gynecology and Obstetrics," the first session of which will be held in Brussels, September 14 to 19 inclusive, 1892.

Three leading questions will be offered for discussion: (1) "Pelvic Suppurations"; Referee, Dr. Paul Segond, Paris. (2) "Extra-Uterine Pregnancy"; Referee, Dr. A. Martin, Berlin. (3) "Placenta Prævia"; Referee, Dr. Berry Hart, Edinburgh.

Fees. — Members participating in first session, 30 francs. (This will entitle the holder to a copy of the proceedings of the Congress.) Founders (life-membership), 300 francs.

In connection with the Congress there will be an International Exposition of Instruments and Appliances pertaining to Gynecology and Obstetrics.

All communications pertaining to this Congress should be mailed direct to the American Secretary, who will promptly furnish all information. All notifications to be forwarded should be received by August 1st.

Dr. Jacobs, *Secretary General*,
12 Rue Des Petits-Carmes, Bruxelles.
Dr. F. Henrotin, *American Secretary*,
354 La Salle Ave , Chicago.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS, ROME 1893.

The Tenth International Medical Congress, meeting at Berlin in 1890, appointed, when closing the session, Rome as the seat of the Congress in 1893, and Rudolf Virchow, consigning the standard of the presidentship to Prof. Guido Baccelli, formed his best wishes for the next meeting of so many illustrious men of science.

The presidents of the Medical Faculties, of the Universities and scientifical Institutes, together with the most prominent personalities of the Italian medical body, united in Rome in order to establish the basis of the future *Eleventh International Medical Congress* and proclaimed by acclamation the Hon. Guido Baccelli, President General; Prof. Edoardo Maragliano, clinical physician in Genoa, was elected Secretary General; Comm. Prof. Pagliani, Director General for Public Health in Italy, Treasurer, and Comm. Ferrando, chief of department at the Ministry for Public Instruction, Manager. At the same time were elected by secret scrutiny the directing comities of the fourteen sections, corresponding with the following division of the scientifical works of the Congress: (1) Anatomy; (2) Physiology; (3) Medical Clinic; (4) Ginecology; (5) G.l Pathology and Anatomical Pathology; (6) Pharmacy; (7) Surgery and Orthopedia; (8) Psychiatria and Neuropathology; (9) Oftalmology; (10) Dermosiphilopaty; (11) Legal Medicine; (12) Hygiene; (13) Laringologia and Otologia; (14) Military Medicine and Surgery.

The Central Comity has lately elected the foreign comities for the purpose of inviting every nation in the world to adhere to the scope, so that the Congress may turn out worthy of the former ones and also of Rome, which will have the honour of sheltering it. The time, till now, chosen for the convocation of the Congress, is the month of September, a period, when the capital offers a very fine and splendid climate to all its fascinating attractions.

All preparations proceed with promptness and give assurance of a grand and perfect success.

Prof. E. Maragliano, *Secretary General*, Genoa, Italy.
Prof. Guido Baccelli, *President General*.

RECENT DEATHS.

Samuel Lawrence Moore, M.D., M.M.S.S., died in Boston, March 13, 1892, aged fifty-six years.

BOOKS AND PAMPHLETS RECEIVED.

Ninth Annual Report of the West-End Nursery and Infants' Hospital. Boston. 1892.

Two Addresses upon the late Joseph Leidy, M.D., LL.D. By William Hunt, M.D. 1891.

Fourteenth Annual Report of the Board of Health of the City of Lowell, for the Year 1891.

Fourteenth Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore. 1891.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., assisted by Walter Chrystie, M.D. Volume II. Philadelphia: Lea Brothers & Co. 1892.

Prescribing and Treatment in the Diseases of Infants and Children. By Philip E. Muskett, late Surgeon to the Sydney Hospital. Philadelphia: P. Blakiston, Son & Co. 1891.

A Quarter of a Century's Retrospect of Laryngology. By Lennox Browne, F.R.C.S., Ed., President of the British Laryngological and Rhinological Association. London. Reprint. 1892.

Cure Radicale de la Hernie Sans Etranglement Chez La Femme. Par Le Dr. Just Lucas-Championnière, Chirurgien de l'hôpital Saint-Louis. Paris: Alex. Coccoz, Libraire-Editeur. 1891.

Surgical Diseases of the Ovaries and Fallopian Tubes, including Tubal Pregnancy. Ry J. Bland Sutton, F.R.C.S., assistant surgeon to the Middlesex Hospital, London. Philadelphia: Lea Brothers & Co.

Memorial: Embodying Reasons why the Asylum for Insane Criminals, at Auburn, should not be made a receptacle for the Non-Criminal Insane. By Wm. P. Letchworth, Commissioner of the State Board of Charities Buffalo. 1892.

Diseases of the Throat, Nose and Ear. A Clinical Manual for Students and Practitioners. By P. McBride, M.D., F.R.C.P., Surgeon to the Ear and Throat Department of the Royal Infirmary, Edinburgh. Philadelphia: P. Blakiston, Son & Co. 1892.

The Mediterranean Shores of America: or, The Climate, Physical, and Meteorological Conditions of Southern California. By P O. Remondino, M.D., Member of the State Board of Health of California. Illustrated with forty-five engravings and two double-page maps. Philadelphia: F. A. Davis & Co. 1892.

A Dictionary of Treatment or Therapeutic Index, including Medical and Surgical Therapeutics. By William Whitla, M.D., Professor of Materia Medica and Therapeutics in the Queen's College, Belfast, etc. Revised and adapted to the Pharmacopœia of the United States. Philadelphia: Lea Brothers & Co. 1892.

A Practical Manual of Diseases of the Skin. By George H. Rohe, M.D., formerly Professor of Dermatology in the College of Physicians and Surgeons, Baltimore, etc., assisted by J. Williams Lord, A.B., M.D., Lecturer on Dermatology and Bandaging in the College of Physicians and Surgeons. No. 13 in the Physicians' and Students' Ready-Reference Series. Philadelphia: F. A. Davis & Co. 1892.

Original Articles.

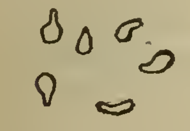
CONDITION OF THE BLOOD IN CERTAIN MENTAL STATES.

BY S. G. WEBBER, M.D., BOSTON.

The following cases of mental depression, of greater or less severity, in which the blood-corpuscles were counted, are of much interest. The patients were treated at the Adams Nervine Asylum. The first two cases were the severest, both were sent away on account of the amount of depression. In them the blood was poor in red corpuscles, which were also deformed, resembling in this respect the blood of pernicious anæmia. The other cases were less serious and the blood was in a more healthy condition, yet not quite up to the normal standard, except in two cases of dyspepsia.

It may be a question as to how much the mental depression affected the blood, or whether the poor blood was one factor in causing the depression. I believe the latter is the correct statement of the sequence of events.

Case I. Miss C. E., age thirty-eight, was at one time melancholic, with suicidal tendency. The family history is bad nervously, there being insanity and eccentricity in the family. The patient has been somewhat depressed for a year, and more or less low-spirited. She had been subject to sick-headaches, less lately than when younger; these continued one or two days with nausea and vomiting. She has had pain in her back and abnormal sensations in her legs. Hands and feet were habitually cold. She had a "thumping and beating" in her head, tinnitus aurium; did not hear voices. She had attacks during which she cried and lay awake nights crying. There were no objective symptoms except a great degree of pallor, lips and tongue as well as skin showing anæmia.



The blood was examined, and there was found a diminution of the red corpuscles, 4,190,000; a very large number were misshaped, being elongated, budded and without concavity.

Valerianate of zinc, iron, and quinine was given, also arsenic; she had massage, and attention was paid to diet and the digestive organs, moderate exercise and as much out-door life as possible.

After five months the patient had gained in flesh, color and spirits. The blood was again examined and showed 4,790,000 red and 10,000 white corpuscles; the deformed corpuscles were very rare, only a few being seen.

The patient was much disturbed by the prospect of leaving, uncertain as to her future, feeling that she ought to take up the duties of life again and yet conscious that she was not able so to do. A visit from a relative, who talked with her on these subjects disturbed her, and she left in a much less cheerful disposition, tearful and despondent.

Case II. Mrs. N. S. R., was forty-four years old when received. She had been ailing many years, had never been strong. She had no living children; one child was born at seven months; had one miscarriage twelve months before entrance. Her physician told her the cause was the low state of her blood. She did not get up well after the miscarriage; the catamenia appeared six weeks after with much more pain than on previous occasions. Five years ago her left leg became weak, and there was pain in that limb if she hit her toes while walking. Two years ago the right leg began to trouble her in the same way. She formerly had sick-headaches, but not for some years lately.

Her parents were subject to sick-headaches. Her father's family were consumptive; of eleven only three lived to be thirty-seven years old. Father's parents had headache and neuralgia.

On admission the patient complains of weakness in the legs, with tingling and prickling, not much pain. Sometimes she has backache. She has a fair appetite; does not sleep well. She is low-spirited and despondent. She is not kept awake at night by pain, but by "thinking to no purpose."

The pupils and eyes acted naturally; the tongue was protruded straight, was fissured and flabby. Sensation was natural and equal in the limbs; motion was not impaired. The patellar tendon reflex was normal; there was no ankle clonus, there was no tremor of the hands; there was a slight degree of tenderness in each groin, rather more on the right, also slight tenderness on each side over the sciatic nerves, the crests of the ilia and the sacro-iliac synchrondrosis. There was no spinal tenderness. Pulse was 76, a faint murmur at the apex with the first sound. The patient was pale, anæmic in appearance, seemed to have little or no spirit nor ambition.

Subsequently the blood-corpuscles were examined. There were found to be 4,625,000 red corpuscles; 15,000 white corpuscles. Some of the red were misshapen, being budded, having an elongated shape without concavity. The number of these deformed corpuscles were much fewer than in the previous case.

Under tonics, generous feeding, rest, she gained in flesh, slept better and improved in many ways; at times she was much less despondent, but the gain in cheerfulness was not permanent.

Case III. Miss F., age forty-two, was never strong; her family history is not good. Her father died insane, her mother is queer, for years she has not seen any one but cousins, and is weak mentally; one brother has an unbalanced mind and is "queer." The patient began to run down when about thirty-three, taking care of her mother. She complained of pain in her legs, abdomen, back and head, sometimes all over. Frequently purpuric spots appear on different parts of the body, especially the legs, during attacks of pain, also on the arms and shoulders.

Mentally the patient is peculiar. She craves attention, is rather inclined to be jealous if others seem to have more attention than herself. At home she taxed the household to wait on her. If she is not humored she lies abed and complains of pain, of weakness. It was a constant contest to get her up and to keep her about after it was evident that she needed to exert herself. She was at times moody, sulky, and had crying spells. She gained much in cheerfulness and in strength, the purpuric spots appeared less frequently, she was evidently much better until it was time for her to go home when she cried much, was less cheerful, had a diarrhœa and sore throat.

The first count of blood was made about a month after entrance, 4,920,000 red, the white at, or just below, the normal. The second count was made about four months later, 4,128,000 red, 20,009 white.

Case IV. Miss B., age twenty-five, was never strong, always nervous; probably overstudied in the high school; was obliged to give up studying. She had insomnia, a disagreeable feeling of heaviness in the back of her neck. She became despondent and lost her interest in things about her. She had no headache, but a sense of weight on the top of her head, she felt like screaming.

She was said to be naturally of a quiet, rather taciturn disposition: while at the asylum she preferred to lie out doors, to be by herself, did not voluntarily take part in conversation, but answered when spoken to; her memory was not good, she was negligent in regard to dress. She ate well; slept poorly, though probably more than she thought she did.

Her blood was not examined till she had been there some weeks. There were 3,880,000 red, 20,000 white corpuscles. A few of the red were crenated, a very few were irregular in shape; there were very many small globules or spheroids.

She improved somewhat and subsequently a trip by water to a warmer climate seemed to be of benefit.

Case V. Mrs. A., age thirty-five, has been ailing for four or five years, had been running down in health for a year when her five children had whooping-cough. For three years or more she has been having nervous feelings, trouble in her head, tinnitus, backache in the lower lumbar region. At times she says she seems to take no pleasure in life, everything seems a burden to her. She is troubled much with low spirits. She has slept poorly. She showed very little of this depression and after three weeks, on account of a child's illness, she left much improved in spirits.

After eighteen months she returned very tired and with many of the old symptoms. In the interval she was much of the time better than previous to her first entrance. Red corpuscles 4,380,000, white corpuscles 10,000.

In two other cases of dyspepsia with much nervous disturbance, but with less depression of spirits than in those just reported, and no other special mental disturbance, a count of the blood gave, in one case, 5,260,000 red and the white below normal, and both red and white rather small in size. The other case gave 5,080,000 red, 30,000 white, a very few of the red showed budded processes. In some cases of simple nervous exhaustion or of headache I have found no change in the condition of the blood as shown by the numbers and shape of the corpuscles.

DR. OSCAR LIEBREICH'S IMPROVED METHOD AND INSTRUMENTS FOR THE EXAMINATION OF THE SKIN, ESPECIALLY IN LUPUS-

BY ARTHUR P. CHADBOURNE, M.D.

A new method for detecting and accurately determining the distribution of the so-called "latent lupus," that is, where the process is covered and hidden by an apparently normal epidermis, — was described by Dr. Liebreich in the *Therapeutische Monatsheft*, for March, 1891. Continued use has proved its accuracy and value, and Dr. Liebreich has most kindly allowed me to describe the method, as now used by him, and to add to it an account of his improved phaneroscope, of which no description has yet been published.

In studying the effects of sodium cantharidinate on lupus of the skin it was often found necessary to wait several weeks before the superficial growth surely showed the results of treatment, for all changes whether good or bad, begin in the hidden peripheral zone. Even after recovery seems complete, isolated latent nodules may persist here and there, and many cases of "cure" have been reported by different observers, in which the subsequent history showed that the so-called "cure" was undoubtedly only a change to a latent condition, that could not be detected by the ordinary methods of examination. Fortunately the translucency of the skin makes it possible to see abnormal changes in these deeper layers when they are properly illuminated. In almost all parts of the body direct lighting from the side opposite the observer is impossible; but even when this can be done, the thickness of the tissues between the abnormal process and the light, deflects the light rays to such a degree that they cross each other in the superficial layers of the skin, blurring and obscuring everything beneath, and preventing the sharp contrast which is absolutely necessary for the easy recognition of the latent growth. To be of practical value, therefore, *the light must be reflected from just beneath the level to be examined*, and must pass through and illuminate it before reaching the eye of the observer.

For this purpose Dr. Liebreich has invented the phaneroscope (to be described farther on) but his method can be illustrated, and fairly good results obtained with an ordinary reading lens of about two inches focus and from two to three inches diameter. If the lens is held so that the rays of light from a lamp are brought to a focus a little beneath the surface of the skin, there will be a central, brilliant point of light, and around it a somewhat opaque pink "halo," the latter caused by the rays reflected from the point of focus, which, in returning, diverge and illuminate a much wider circle of overlying skin. If the normal skin, in the neighborhood of a patch of lupus, is first examined, and the lens then moved along parallel with the surface until it is over the typical lupus growth; there is first a widening of the "halo" on the side nearest the lupus, and at a point where the skin seems perfectly healthy; as the more infiltrated tissue is reached this "halo" steadily grows broader, and when the lens is directly over the typical portion of the growth, has become a much lighter pink, glowing circle, two or three times wider than in the normal skin, and much more brilliantly lighted. By approaching the centre along lines radiating from it, the distribution of the disease can be accurately mapped out, and the area will be considerably larger than that found by simple inspection and touch, owing to the addition of the hidden peripheral zone of latent lupus. In this way small detached "islands" of the latent growth are often found, which will probably develop later into typical patches of the disease. A steady and gradual diminution in the width of the "halo," and a darkening of its pink tint show a decrease in the activity of the process and *vice versa*.

At first Dr. Liebreich used the lens and lamp, but the examination is much more accurate and more easily made with his improved phaneroscope (Fig. 1). In this instrument a small incandescent electric lamp (D) is attached at right angles to a handle (B), through which run wires (C′ C″), connecting the lamp with a battery. On the upper side of the handle is a switch (A), by which the current can be turned off or on. The incandescent burner is covered by a tube (G), which holds an ordinary condensing system of two plano-convex lenses (I J) of forty millimetres focus. A second tube (K), ending in a conical tip, with an opening two millimetres wide at its apex, fits over, and can be moved up or down on the lens tube, thus making the focus of the cone of light-rays project the desired distance beyond the tube. By making the focal point project about one and a half or two millimetres beyond the tube, any change in the normal translucency must cause a corresponding variation in the tint of the part of the skin, which is illuminated by the light reflected from beneath it, and as all unnecessary light is cut off by the tubes (G and K), this variation will be much more easily seen than with the combination of direct and reflected light from an ordinary lens. A very important point is that *only the minimum of light necessary for clear definition* should be used.

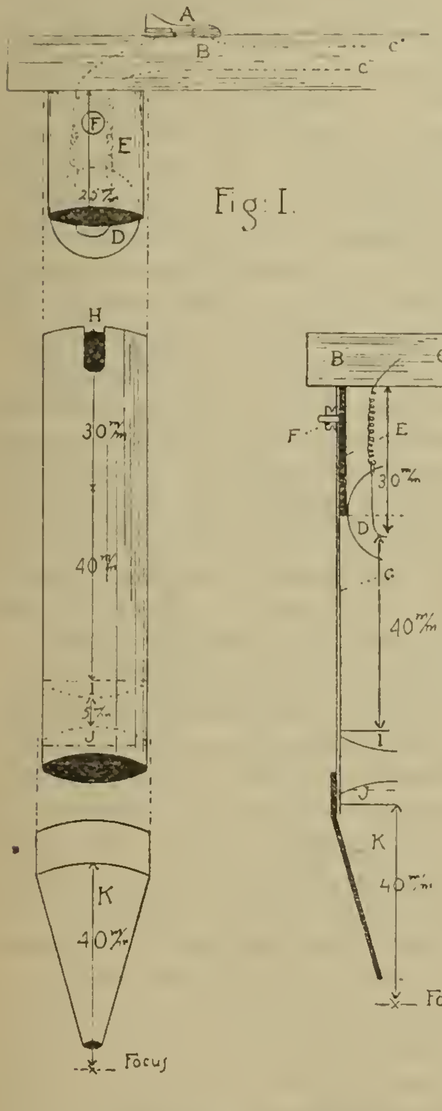


Fig: I.

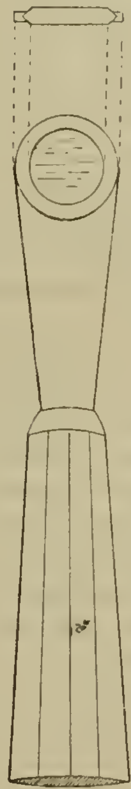


Fig II.

To distinguish hyperæmia from blood which has escaped from the vessels into the surrounding tissues, Dr. Liebreich uses, what he calls, a "glass pressor": a small plate of flat glass held in a light handle (Fig. 2). By looking *through* the glass one can see the changes that take place while the pressure is being made, as it is not necessary to remove the "pressor" to see the skin beneath it.

The value of an examination made in the way just described, is not confined to lupus, but is useful in the diagnosis of all conditions involving hyperæmia, hypertrophy, pigmentation or hæmorrhage of the skin, and has been an especial help in the recognition of erysipelatous tissue.

The cases of lupus treated by Dr. Liebreich with cantharidinate of sodium have all given most satisfactory results; and the improvement, though slow,[1] is a steadily progressive one. The "reaction" is never more than slight, and the injections are almost painless. In only a few instances has there been albuminuria, and this has always disappeared within a few hours, so that the treatment could be continued. When pain, severe subjective symptoms or signs of renal irritation follow the use of sodium cantharidinate, the fault must therefore be in the dose or solution used. Dr. Liebreich usually gives subcutaneously 0.0002 :1, and this is repeated from two to three times each week. In all his cases "the process has been arrested and no nodules have developed, which had not been found in the latent condition before the treatment was begun." During the three months that I have spent in his laboratory, Dr. Liebreich has frequently shown me the patients under treatment. Owing to other work I have not been able to follow them carefully, but in every case the process is decidedly less extensive than when I first saw it, and I can recall no case in which there has been even a temporary relapse. From his experiments on animals he believes "that sodium cantharidinate alone will not be sufficient to completely cure a case of tuberculosis," but he is "now combining the 'serum therapy' with other drugs, so that not serum alone shall be brought in contact with the germs, but a serum which shall carry with it a substance capable of destroying the bacteria. This view is strengthened by Henning's pamphlet on Serum-Therapy,[2] which has just been published."

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ORIGIN OF THE RED BLOOD-CORPUSCLES.[1]

BY CHARLES LOUIS MIX, A.M.

(Concluded from No. 11, page 258.)

III. Erythroblast Theory.

In November, 1868, Neumann[34] and Bizzozero[35] working independently, discovered almost simultaneously in the marrow of bones, certain nucleated hæmoglobin-bearing cells which were of the size of white blood-corpuscles, with relatively large nuclei, and which possessed a protoplasm not a hair's breadth different, as Rindfleisch[36] expresses it, from the protoplasm of a red blood-corpuscle in either color, consistency or refrangibility; and both writers declared them to be transitions between colorless cells and red corpuscles. Since that time the primary colorless cells from which the hæmoglobin-bearing cells originate, have been named "erythroblasts," by Löwit,[37] and the term, being a useful one, has persisted. For convenience, I shall extend Löwit's use of the word to include the hæmoglobin-bearing cells. Using the term

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[1] Read at a physiological conference in the Harvard Medical School, January 4, 1892.

[34] E. Neumann: Ueber die Bedeutung des Knochenmarkes für die Blutbildung; Preliminary notice, Centralbl. f. d. med. Wissen., Oct. 10, 1868; full article, Archiv. d. Heilkunde, Bd. x, 1868, pp. 68–102. In an article entitled "Knochenmark und Blutkörperchen," Archiv. f. mikr. Anat., Bd. xi, p. 793, Neumann lays claim to the whole honor of the discovery, and his claim should doubtless be allowed to some extent.

[35] Bizzozero: Sulla funzione ématopoetica del midollo delle osse. Gazetta medica Italiana-Lombardia, Nov., 1868. See also, Centralbl. f. d. med. Wissen., 1868, p. 885; 1869, p. 149.

[36] Rindfleisch: Archiv. f. mikr. Anat., Bd. xvii, pp. 1, 21.

[37] M. Löwit: Ueber Neubildung und zerfall weisser Blutkörperchen. Sitzungsber. d. kais. Akad. d. Wiss., Bd. 92, iii Abth., pp. 22–141. "Der Kurze halber werde ich diese Zellen, die zur Neubildung rothen Blutkörperchen in innigsten Beziehung stehen, als *Erythroblasten* bezeichen." Page 56 of the above article.

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[1] Improvement is not expected much before the 100th injection.

[2] Henning: Wesen und Werth der Liebreichsche Serum-therapie, Leipzig, 1892.

in its extended sense, erythroblasts have also been found in the spleen and lymphatic system in cases after very severe bleeding.

In order that an erythroblast, after acquiring hæmoglobin, may develop into an ordinary red corpuscle, two things are necessary: (1) it must lose its nucleus, and (2) it must become a biconcave disc. The great question is — "How?"

There have been three theories for the loss of the nucleus, that of Malassez, which for convenience is now given second, being chronologically last.

Neumann [38] supposed that erythroblasts lost their nuclei by absorption preceded by fragmentation. He gave descriptions of the first stages of the process showing the nucleus notched and indented, and also of the final stages, showing a last fragment still remaining in the cell. He took for granted an intermediate series connecting the extremes, but was unable to show any preparations. This absorption theory was an old one advanced by Kölliker [39] to explain how certain embryonic nucleated cells of the blood of the liver became non-nucleated red corpuscles; but he was forced to confess that he could not follow out the process of an entire absorption. It is for lack of histological proofs, therefore, that the Neumann-Kölliker theory failed.

The absorption theory has also been ingeniously disproved in another way by Malassez. He shows that in some cases where the erythroblasts are relatively very much larger than the red corpuscles, that one erythroblast would make a corpuscle from four to twenty times too large, by the simple absorption of its nucleus. In an erythroblast from a kid, the shell of protoplasm surrounding the nucleus varies in thickness from .375 μ. to .750 μ. at any point; and its volume, obtained by finding the total volume of the erythroblast and then subtracting the volume of the nucleus, varies from 25.2 cu. μ. to 127.3 cu. μ. But the volume of a corpuscle from a kid contains only 6.38 cu. μ. Hence one erythroblast would give rise to a corpuscle from four to twenty times too large.

(2) Influenced largely by this calculation, Malassez[40] advanced a new theory, that of budding. He supposed the protoplasm of the erythroblast to give off buds just as do yeast-cells, the buds being constricted off when they have reached the volume of the corpuscle which they are destined to form. They are roughly spherical at first, but become, after separation from the erythroblast, biconcave, by being flattened in the circulating blood by contact with other globules, something as the shingle on a well-washed beach,[41] and also by a slight loss of water. Malassez's chief argument in favor of his theory is that the buds always correspond closely in volume to the red corpuscles, and that their size is never influenced by that of the erythroblast from which they develop. For example, in the kid the erythroblasts are much larger than the corpuscles; hence the buds are relatively small. In the rabbit, however, the erythroblasts are only a little larger than the corpuscles, hence the buds are as large as the erythroblasts themselves. In all cases the bud is a sphere of such a volume that when compressed its diameter will equal that of the biconcave discs.

(3) Rindfleisch,[42] shortly before Malassez's paper appeared, advanced his theory of the extrusion of the nucleus; and in a recent paper Dr. Howell [43] supports him. Rindfleisch gave figures showing that the nucleus is forced out of the cell, and stated that it is extruded, surrounded by a protoplasmic film, leaving a bell-shaped shell of protoplasm behind which develops into a red corpuscle. Dr. Howell has been able to show numerous cases in which the nucleus is extruded, and claims that in no less than three cases he saw in part the actual extrusion take place in living cells. He, however, differs from Rindfleisch in one important point: he says the nucleus is extruded absolutely devoid of protoplasm as far as he could discover, using his highest magnifying powers.

While experimenting upon cats, Dr. Howell came upon an appearance which he thinks corroborates his theory. He observed in the periphery of corpuscles newly-formed after severe bleeding, a fragment of deeply-staining substance which he explains as a fragment of the extruded nucleus left behind, due to the rapid formation of corpuscles brought about by extensive losses during bleeding. Dr. H. P. Bowditch suggested that he use this fact as a means of finding the average term of life of a corpuscle, but unfortunately nothing has as yet come from the suggestion.

In regard to these three theories it may be said in conclusion that the last two are essentially identical; for what is the difference whether a bud of protoplasm be constricted from a nucleus, leaving a film of protoplasm about it according to Malassez, or whether according to Rindfleisch and Howell, a nucleus with its film be constricted from a mass of protoplasm, or, as they say, "extruded?" The result is the same and the process is doubtless the same, though looked at from different standpoints. Though Dr. Howell did not see any protoplasm about the nucleus, it is doubtless present, and has been seen by enough observers to warrant the conclusion that it exists. As far as I know there is no well-authenticated, undisputed case of a free nucleus, even the parablast nuclei or merocytes having been shown to possess protoplasm. It is, therefore, probable that the extruded nuclei are invested by a thin protoplasmic film. This combined theory for the loss of the nucleus seems to be the true one.[44]

The next question is, how do these masses of hæmoglobin-bearing protoplasm become biconcave discs? At present there are two explanations offered. Rindfleisch says that they are flattened by being rolled about in the blood-stream. Malassez agrees with him and says that the process is further aided by a shrinkage caused by a slight loss of water. Dr. Howell's explanation is exceedingly sensible and equally simple. The biconcavity and flattening are produced by the loss of the nucleus from the interior.

How do the biconcave discs when formed get into circulation? Rindfleisch has a simple answer to this question, obtained by careful injection in the marrow of the ribs of a guinea-pig. In 1869, Hoyer [45] showed that the marrow is rich in arterial and venous capillaries, the former having very thin walls, the latter possessing none at all, being hardly more than lacunæ between marrow cells. Ten years later, in a paper already quoted, Rindfleisch was enabled to prove the truth of Hoyer's statements by his injections. Hence it is an easy matter for new corpuscles to get into circulation. Very striking is the fact that, in the nutrient artery, the media is reduced to a single layer, the muscularis, the elastic layer being absent altogether; and that furthermore the adventitia is very thin. This may be explained by the fact that the artery enters the long bone in a direction very oblique to the long axis, the bony walls therefore serving as arterial walls. If, therefore, the latter be so much reduced, it is not surprising that the venous capillaries are without walls; and furthermore, being placed inside the bone, they hardly need them.

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[38] E. Neumann: Ueber die Bedeutung des Knochenmarkes für die Blutbildung. Ein Beitrag zur Entwicklungsgeschichte der Blutkörperchen. Archiv. der Heilkunde, Bd. x, pp. 68–102.

[39] A. Kölliker: Zeitschrift für rationelle Medecin., Bd. iv, p. 112, 1846.

[40] L. Malassez: Sur l'origine et la formation des globules rouges dans la moelle des os. Arch. de Phys. norm. et path., vol. ix, p. 1.

[41] L. Malassez: Arch. de Phys. norm. et path., vol. ix, p. 21. "Il se passe peut-être pour les globules circulant quelque chose d'analogue à ce que l'on constate pour les galets de la mer, qui, attirés par la pesanteur et agités sans cesse par le flux et le reflux, finissent par s'user sur deux de leurs faces opposées, par devenir plats."

[42] Rindfleisch: Archiv. f. mikr. Anat., Bd. xvii, pp. 1, 21.

[43] W. H. Howell: Journal of Morphology, vol. iv., pp. 58–116.

[44] Bizzozero, as quoted by Gibson, confesses that he has seen the buds described by Malassez, but says that they are very rare, being caused chiefly by reagents, especially by osmic acid. Dr. Howell also admits that he has seen the buds, but he regards them as daughter-cells which, by extrusion, have lost their nuclei before they are completely separated from the mother-cells.

[45] Hoyer: Centralbl. f. die med. Wissen., Bd. x, 1869, No. 17.

Neumann contradicts Hoyer and says that with careful injections a thin-walled system of venous capillaries can be demonstrated,[46] although he acknowledges that in some pathological cases it seems to be absent.[47] He says that the erythroblasts, since they are capable of amœboid motion before becoming infiltrated with hæmoglobin, make their way bodily through the walls of the venous capillaries into the enlarged lumen of these vessels where they develop into red corpuscles. In support of Neumann's view, Denys [48] has shown conclusively, that, in the bones of birds, the venous capillaries possess walls and that the erythroblasts lie in cords within the enlarged lumen, the blood-plasma percolating between them. From the condition in Aves it is very natural to conclude *à priori* that the condition in Mammalia is much the same; hence Neumann's explanation of how the blood-corpuscles when formed pass into circulation is more satisfactory than Rindfleisch's.

The last question to be answered is, What is the fate of the extruded nucleus? No one, so far as I have learned has faced this question except Dr. Howell.[49] Rindfleisch,[50] who believed in the absorption of the nucleus, did not need to answer it. Malassez [51] implies that the nucleus of the erythroblast, when stripped of most of its protoplasm by the developing bud, simply acquires more until it is ready to produce another bud. Neumann,[52] Osler,[53] and others describe free nuclei [54] in the marrow of the adult, and in the liver and spleen during fœtal life. Dr. Howell says that these are the extruded nuclei in question, and that they are ultimately dissolved in the blood-plasma. He thinks that they may form the fibrinogen of the blood, for after bleeding, when of course the numbers of free nuclei are greatly increased, due to the rapid formation of new corpuscles, it has been found that the fibrinogen of the blood is increased sometimes one hundred per cent. This is very significant when placed beside an observation of Malassez, although so far as I know no one has put the two facts together. Malassez [55] noticed that in teasing the erythroblasts he often broke into the nuclei, and in all cases they proved to be of a semi-fluid nature containing a stringy, fibrous substance, of which he gives figures. This might lead one to think that he had actually caused the formation of fibrin in the nuclei of these cells by contact with the needles during teasing, and so it becomes a striking confirmation of Howell's suggestion.

What is the *origin* of the erythroblasts? Here we once more enter upon disputed territory, the leading theories being divisible into two classes: those not concerned with the marrow, and those concerned with it. Of the first group the following are the most important:

(1) Erythroblasts arise from each other by ordinary indirect cell-division. This fact, first pointed out by Bizzozero many years ago, has received abundant confirmation since then by almost every writer upon the subject; still, though undoubtedly true, it cannot be received as a satisfactory explanation of the ultimate origin of erythroblasts.

(2) Bizzozero has advanced another theory which has received many supporters; namely, that the erythroblasts have arisen from nucleated embryonic corpuscles which during fœtal life found their way into the marrow where they have since remained. Bizzozero therefore regards the erythroblast as a cell *suo generis*, entirely distinct from marrow-cells.

(3) Neumann in his first paper, as has already been said, advanced the theory that erythroblasts were merely transformed white corpuscles, but lack of histological proofs of such a transformation led to the overthrow of the theory. Neumann's observations were undoubtedly much more correct than his explanations. The series of transitions which he claims to have seen between a leucocyte and a red nucleated cell ready to become a corpuscle by loss of its nucleus, undoubtedly existed; but the cell which began the series was very likely a marrow-cell instead of a leucocyte. Curiously enough Bizzozero in his first paper advanced the theory that leucocytes develop into red corpuscles, passing through the erythroblastic stage; but both he and Neumann revoked their first opinion in consequence of the arguments raised against it.

(4) Erythroblasts have been thought by Pouchet,[56] who has been the author of many theories, to arise by an indirect process from what he calls "hyaline leucocytes," supposed to be derived from pre-existing larger cells. Just as we have fatty or pigmentary degeneration of cells, so we have in "hyaline leucocytes" a hæmoglobic degeneration. As Malassez points out, there is anything but a degeneration in the erythroblasts, they being on the contrary very active in cell-division. Besides, a true leucocyte has never been seen to become impregnated with hæmoglobin, much less to undergo a hæmoglobic degeneration. Pouchet seems to have had scarcely any histological evidence for his hypothesis.

(5) Erythroblasts have been known to occur in the adult spleen, but only after severe hæmorrhages, originating from other indifferent colorless cells. This was first shown by Bizzozero, afterwards experimentally proved by Gibson, and substantiated by Howell.

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[46] E. Neumann: Archiv. der Heilkunde, Bd. x. pp. 68–102.

[47] E. Neumann: Ein Fall von Leukämie mit Erkrankung des Knochenmarkes, Archiv. der Heilkunde, Bd. xi, p. 1.

[48] Denys: La Cellule, vol. iv, p. 203.

[49] W. H. Howell: Journal of Morphology, vol. iv, p. 105.

[50] Rindfleisch: Arch. f. mikr. Anat., Bd. xvii, pp. 1, 21.

[51] L. Malassez: Arch. de Phys., vol. ix, 1882, pp. 1–47.

[52] E. Neumann: Arch der Heilkunde, Bd. xv, pp. 411–476.

[53] Osler: Cartwright Lectures, Medical News, 1886. (Philadelphia.)

[54] Though the nuclei are described as free, they probably possess some protoplasm, however small in amount it may be.

[55] L. Malassez: Arch. de Physiol., vol. ix, 1882, p. 24. When one teases a preparation of marrow, "on y trouve, au milieu d'éléments plus ou moins déformés et déchirés, de très fins filaments. . . . Quand la dissociation a été faite systématiquement, suivant un seul sens, d'avant en arrière, par exemple, presque tous les filaments ont cette même direction. . . . Il me suffira de dire que tout se passe comme si on avait affaire à une substance liquide et filante qui, entrainée de çà et de là par les aiguilles dissociatrices, se serait étirée en fils et par places rassemblée en larmes ou en boules."

[56] Pouchet: De la Degénérescence Hémoglobique de la Moelle des Os, Soc. de. Biol., March 15, 1879; also Gaz. Medic., 1879, p. 184.

Gibson[57] excised the spleens of three dogs and in two cases found an actual decrease in the number of red corpuscles. Bizzozero says that this is to be regarded as the return of the spleen to an embryonic function, occurring only when the demand upon the marrow for corpuscles exceeds the possible supply, as after severe bleeding. Very interesting is the additional fact that when part of the spleen is excised, the newly growing portion develops erythroblasts as it did during its formation in the embryo. Löwit[58] thinks that the spleen and lymphatic glands are constantly preparing colorless erythroblasts, destined to acquire hæmoglobin, and, by the loss of the nucleus, to develop into red corpuscles. No one seems disposed to agree with him in regarding the spleen as normally forming erythroblasts in the adult.

(6) Erythroblasts occur in the lymphatic glands, though where they come from is not known. We are indebted for the knowledge of this fact to Gibson, who ligatured the thoracic duct of a dog thirty-seven days before the animal was killed, it having gained five decagrams in the meantime. Post-mortem examination showed erythroblasts present in the left axillary glands and especially in the abdominal ganglia, there being only a few in the right axilla. A calculation of the numbers of red corpuscles before death showed a loss of thirteen per cent. Furthermore in the marrow-cavity in the shafts of both humerus and femur there had been an extension of the marrow, thus indicating that, since the lymphatic system had been unable to furnish its quotum to the sum total of the blood, due to the ligature about the thoracic duct, the hæmatopoietic function ordinarily performed by the lymphatic ganglia had been imposed upon the marrow. Löwit also regards the lymphatic system as a normal source of erythroblasts.

It is in the marrow, however, in which most to-day agree that erythroblasts normally originate. There are to be found in the marrow in addition to the three elements of the blood, red and white corpuscles and blood-plates, the following sorts of cells:

(1) Certain colorless cells, which possess granular nuclei with no definite nucleoli, and which are exactly like red nucleated corpuscles before they have lost their nuclei in everything except the possession of hæmoglobin. These cells are the erythroblasts of Löwit.

(2) Hæmoglobin-bearing cells, which are just on the point of losing their nuclei by extrusion and which develop immediately into red biconcave discs.

(3) Wandering-cells or leucocytes, numbering nearly one-half the total number of cells found in the young marrow.

(4) Giant-cells, which are of two sorts, one possessing an elongated and nodulated nucleus, described very well by Bizzozero as the cells with the "budding nuclei"; the other possessing a number of nuclei, described by Robin under the name of "myeloplaxes," and participating largely in the destruction of bone during the bone-making process. It is not probable that the first sort ever develops into the second.

(5) Free nuclei, described by Neumann as occurring in the liver, and by Osler and Obrastzow as occurring also in the marrow, regarded by Dr. Howell as the extruded nuclei of erythroblasts.

(6) Ordinary marrow-cells, possessing a slightly granular protoplasm containing an oval or sometimes rounded nucleus, and a nucleolus. Another sort has been described as being coarsely granular, staining deeply with eosine, and possessing a nucleus with one or more nucleoli.

(7) Fat-cells, found in older marrow. From all of these cells, except the fat-cells, it has been supposed that erythroblast may develop, but the weight of evidence seems to be in favor of ordinary marrow-cells as the true source.

Many theories have already been given attempting to show that erythroblasts arise from leucocytes. One of the first was Kölliker's, and it was followed in 1868 by Neumann's and Bizzozero's. None of these writers make use of the term "erythroblasts," yet they have described them as occurring in their series of transitions. Pouchet's theory that certain hyaline leucocytes found in the marrow developed into red corpuscles, after passing through the erythroblastic stage, has been mentioned.

Foa and Salvioli[59] state that the giant-cells with the "budding nuclei" of Bizzozero give rise to colorless erythroblasts by a process of constriction, the erythroblasts then becoming colored with hæmoglobin and forming corpuscles. They call these giant-cells "hæmatoblasts." Rindfleisch[60] believes that the giant-cells by a series of transitional forms pass to the red corpuscles through an erythroblastic stage, although he does not, of course, call it by that name.

Osler[61] and Obrastzow[62] believe that the naked nuclei of the marrow do not dissolve in the blood-plasma as Dr. Howell suggests, and that they are not extruded nuclei of erythroblasts, but that on the contrary they develop into them by first becoming surrounded with protoplasm, which is then infiltrated with hæmoglobin, thus giving rise to red blood-corpuscles by the subsequent loss of the nucleus. The theory is not well supported.

Malassez,[68] Howell[64] and Gibson[65] all unite in believing that erythroblasts develop from ordinary marrow-cells. Until 1890 not all the stages had been satisfactorily shown, but during that year Dr. Howell gave additional evidence of the truth of the theory. Malassez does not give a clear account of the origin of the erythroblasts which he names "protohæmoblasts,"[66] contenting himself by saying simply that the latter arise directly from undifferentiated marrow-cells. According to Dr. Howell the marrow-cell first develops into a cell, which is the exact counterpart of a nucleated red corpuscle, but which possesses no hæmoglobin, thus corresponding to Löwit's erythroblast. This then acquires hæmoglobin, and after passing through an unknown number of generations, during which time there is a gradual change in the nucleus preparing it for the fate awaiting it, the cell becomes fully matured, and loses its nucleus by extrusion, thus developing into a true corpuscle. Of all the theories which have been advanced for the origin of the erythroblast, the last is undoubtedly supported by the best histological evidence.

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[57] J. L. Gibson: The Blood-forming Organs and Blood-formation. An Experimental Research, Journal of Anatomy and Physiology, vol. xx, 1885, pp. 100-113, 324-353, 456-474, 674-691.

[58] M. Löwit: Ueber die Bildung rother und weisser Blutkörperchen, Sitzungsber. d. Kais. Akad. d. Wissen., Bd. 88, iii Abth., pp. 356-399.

[59] Foa and Salvioli: Arch. p. l. Scienz. med., 1880, vol. iv, p. 1.

[60] Rindfleisch: Arch. f. mikr. Anat., Bd. xvii, 1880, p. 21.

[61] Osler: Medical News (Philadelphia), 1886. Cartwright Lectures.

[62] Obrastzow: Arch. f. path. Anat. und Physiol. und für clin. Med. (Virchow), Bd. 84, 1881, p. 359.

[63] L. Malassez: Arch. de Phys., vol. ix, 1882, p. 30.

[64] W. H. Howell: Journal of Morphology, vol. iv, p. 90.

[65] J. L. Gibson: Journal of Anatomy and Physiology, vol. xx, p. 456.

[66] L. Malessez: Op. cit., p. 35.

As the question of the origin of the red corpuscles of the adult now stands, there are only two theories which can claim to be at all established, Schäfer's Vasoformative theory and the Erythroblast theory. Unfortunately the former is active only a short time after birth, so that it cannot be given as a sufficient explanation. The erythroblast theory rests on excellent evidence, is a sufficient explanation, but unfortunately exists in so many variations that many are disposed to doubt its truthfulness altogether. Whoever will undertake, however, to run over all the many theories from Neumann's time to the present day, can hardly fail to see that, although stated in so many forms, they yet reduce to one, which in brief seems to be as follows: An indifferent marrow-cell with its granular protoplasm, nucleus and one or more nucleoli, by a series of cell-divisions, develops into a nucleated colorless cell, which by an amœboid motion makes its way into the lumen of a venous capillary. Here it acquires hæmoglobin, and passes through a series of changes fitting it for the loss of its nucleus which takes place by extrusion. After the loss of the nucleus, the plastid, no longer a true cell, collapses, and is transformed into a biconcave disc or red blood-corpuscle, which passes out of the marrow-cavity into general circulation.

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Clinical Department.

A CASE OF IMPERFORATE RECTUM.

BY W. M. CONANT, M.D.

When making the visit Sunday, May 31, 1891, at the Massachusetts General Hospital, for Dr. Homans, I found a male babe, three days old, that had passed no fæces since birth. The child had vomited frequently. The urine was passed freely, clear, and not tinged with meconium. Temperature at time of entrance 100°, pulse 100.

Examination showed the child to be much jaundiced. General condition fair, with pulse of good strength. Abdomen much distended, so that the veins could easily be seen. No anus present, not even a dimple to mark the accustomed spot. A doubtful impulse was felt in region of anus on pressure upon the abdomen.

The child was seen in consultation by Drs. Beach and Mixter, and it was decided best to operate.

Operation, under ether. Drs. Beach, Mixter and A. Coolidge, Jr., present. An incision was made from the middle of the perineum to tip of coccyx, and was carried to the depth of one and a half inches. Even then there was no impulse to be felt either by Dr. Beach or myself. A small trocar was plunged into the region of the rectum, but nothing was obtained. It was decided that it was not wise to deepen the incision, and on consultation it was thought best to do a laparotomy.

An incision two and a half inches long was made in the left linea semilunaris. Some ascitic fluid was found on opening the abdominal cavity. On inserting the finger the distended bowel was detected, extending toward the perineal incision. It seemed to be about a quarter of an inch from the perineal incision, and separated from it by a diaphragmatic membrane which shut off the abdominal from the pelvic cavity. Then it occurred to me that it might be possible to pass a trocar through the perineal wound into the gut. This I was able to do by using one finger in the abdominal cavity as a guide. The point of the trocar held in the other hand was directed as far back as possible and then entered the bowel from behind without opening the peritoneal cavity. A good-sized trocar was passed into the gut, and five ounces of meconium passed through the canula. The abdominal wound was closed with silk sutures. The canula was left in perineal wound, being fastened in with adhesive plaster. The child stood the operation well, and slept in the afternoon. He took and retained milk and water when awake. Fæces passed readily through the canula, and the child was very comfortable in the evening.

Through the kindness of Drs. Homans and Cabot, I was permitted to have the subsequent care of the case.

June 4th, three days after the operation, the canula was removed and a rubber tube fastened into the wound.

June 15th, two weeks after the operation, the child had gained a pound in weight, now weighs seven pounds. Abdominal wound healed.

June 30th. Several times in last two weeks the anus has been dilated, and to day a fresh tube was inserted. Weighs seven pounds. The abdomen bulges a little at cicatrix, due to the thinning of the entire abdominal wall.

July 15th, six weeks after the operation, child still weighs seven pounds. Food does not agree with him at this time.

July 31st. Anus stretched and a mass of fæcal impaction dug out. Has lost one pound in weight. Several different foods were tried, and it was found that half barley-water and milk agreed best with the child.

The child remained in this condition, sometimes losing, sometimes gaining, in weight, until the last of August, and then, during a few days of extreme heat, he had an attack of entero-colitis, and died.

The entire subject cannot be covered in a paper of this character, but a consideration of the more important points may be of value.

In the embryo a cloaca exists until after the fifth week, and the genital eminence makes its appearance in the course of the sixth week in front of, and within, the cloaca. In the seventh week this is divided into two parts, just how this takes place is not known. The process is connected with the formation of the urogenital cord as an independent structure, and results in the division of the cloaca into a dorsal or anal, and a ventral part. In the tenth week a transverse integumental band completes the division. Of the two openings the dorsal one or anus is of small size and is surrounded by a small, circular, integumental ridge.

It follows, therefore, that there may be several different forms of imperforate rectum or anus, namely:

(1) The anus may be partially closed.

(2) The anus may be completely closed.

(3) The anus is closed, but there is an opening into bladder, urethra or vagina.

(4) Anus and rectum imperforate.

(5) Anus in natural position, but rectum wanting for a short or long distance.

The anatomy of the rectum of the infant has been but little studied judging from the small amount of literature on the subject. I have measured a few babes at term at the Harvard Medical School, and have found the antero-posterior and lateral diameter, from the tip of the coccyx to symphysis on each, about an inch. The distance from the anus to the brim of the true pelvis is a little less than two inches. One interesting thing that I noticed was that about two inches up the rectal wall there was a sharp falciform edge felt as if the rectum was flexed at that point. This I have also felt on several babes a few months old. How much weight, if any, ought to be attached to this point I am unable to state.

The prognosis of these cases, except the simplest forms, is very unfavorable.

Cripps has tabulated one hundred cases of Littré's operation with five recoveries.

Holmes claims not to have met with an account of any permanently successful cases since the publication of Rochard's paper.

Geraldes, after thirty trials, had one successful case, and that died at two and a half months.

Guersant opened the colon in the groin eleven times and once in the loin, without saving a single patient.

Inflammation, visceral complications, dilatation of the bowel above with retained ingesta, insufficient assimilation and pain render a favorable result very improbable.

Treatment. — All operators agree that the indications are to establish an opening as near the natural position of the anus as possible.

The first two forms, where the anus is partially or completely closed, are easily treated by breaking down the membrane and keeping the gut patent by occasionally inserting the finger.

In the third form, where there is a fistula, several things have to be considered. Where there is a recto-vaginal fistula, the size of the child and the urgency of the case have to be considered. Most operators advise waiting until the child is several years old. When the fistula empties into the urethra or bladder, the amount of rectum wanting and the height of the communication are important points. Where there is bulging at the anus the communication is probably recto-urethral, and an attempt may be made to find the bowel. If the bowel cannot be found, Littré's operation is advised by most operators.

In the fourth and fifth forms, where, with anus perforate or imperforate, the rectum is deficient, we have the most difficult problems to solve. In these cases Jacobson mentions four points that should be remembered: (1) Rectum may end at brim of pelvis. (2) If the rectum ends lower down, it may be floating with a long meso-rectum. (3) Though the rectum may end within reach, the peritoneum may, and not unfrequently does, extend low down on the bowel. (4) Even if the rectum is successfully opened high up without opening the peritoneum, fatal cellulitis may be set up by the escaping fæces, or by the attempts to keep the bowels patent.

Nearly all operators advise an exploratory incision in the site of the anus, and some advise carrying this to the depth of two inches; this is the extreme limit. The majority advise an inch or an inch and a half. At this depth a small trocar or aspirating needle is advised to be inserted well toward the back: failing in this, they advise Verneuil's operation, namely, excising the coccyx, inguinal colotomy, lumbar colotomy, Littré's operation.

Verneuil's operation has been performed but seldom, but in certain cases it seems of promise. Lumbar colotomy is not often done at present as inguinal colotomy or Littré's operation is preferred.

After having found the gut by Littré's operation, it is an interesting question to decide whether an opening should be made through the perineum. The authorities differ, but the consensus of opinion is against doing so, because it is not certainly known where the gut is or whether it is covered with peritoneum. This may be true in the usual methods of operating, but in the case just reported the end of the gut could have been found wherever it was; and the ability to direct the trocar toward the back of the pelvis was very marked. Certainly, this method enables one to know just what one is doing.

This is the first case, as far as I can learn, that has had a laparotomy performed, and then had a connection made between the gut and the perineal wound without opening the intestines from above. Certainly one case does not prove anything, but the unfavorable condition of the child before the operation, and the great relief and slight shock from the operation, has led me to report this method of operating in severe cases of imperforate rectum and anus.

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Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Continued from No. 11, page 266.)

PIGMENTATION OF MUCOUS MEMBRANES IN "VAGABOND'S DISEASE."[4]

Pigmented spots of the mucous membrane are generally considered a characteristic and even pathognomonic sign of Addison's disease. In a case of generalized pigmentation their absence is almost enough to warrant us in eliminating Addison's disease. While these diagnostic deductions are true in the immense majority of instances, the two cases reported by Thibierge, show that some modification in our statement of them is necessary. The first case was that of a man fifty-nine years old, who had fallen from a respectable position, into habits of confirmed vagabondage. A discoloration of the skin had appeared a year before, and of late there had been great pruritus of the whole body. When examined his clothing was found to be infested with pediculi, and his skin bore the marks of having been exposed to the attacks of these parasites for a long time. The upper part of the back, and the parts which were brought most closely into contact with the clothing, were covered with the characteristic linear excoriations, mingled with ecthymatous pustules. Almost the whole surface of the skin was covered with a marked pigmentation, more pronounced about the waist in front, and in the scapular and sacral regions behind. The scrotum was pigmented, but not to the degree common in Addison's disease. The mucous membrane of the mouth was the seat of numerous brown patches, irregularly distributed and sharply defined. The glans penis also showed some dark brown spots, as well as the mucous surface of the prepuce.

The second case was that of a former coachman, seventy years of age, who had led a miserable existence for two years, in great poverty. The body was pretty generally pigmented, with the addition of the other characteristic lesions of pediculi vestimentorum, excoriations, pustules and furuncular lesions. The face slightly pigmented; the mucous membrane of the mouth, as in the preceding case, covered with pigment spots, and the border of the lower lip with dark brown patches. Pigmentation also upon the glans.

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[4] Bulletins et mémoires de la Société des Hôpitaux de Paris, December 18, 1891.

These two cases represent well the pathological condition of the skin, to which the name "vagabond's disease" has been given, where the skin, in subjects who have been living in great misery and without sufficient nourishment, takes on a deep brown tint, resembling that seen in Addison's disease, on account of long-continued irritation from pediculi vestimentorum. In vagabond's disease, however, we have been accustomed to regard the mucous membranes as not affected, a marked distinction from Addison's disease. In the two cases cited, however, there was no evidence of the latter disease, and as two similar cases have been reported, one by Greenhow and the other by Besnier, Thibierge concludes that the pathognomonic value of pigmentation of the mucous membranes in Addison's disease may well be doubted.

CHRONIC RINGWORM IN AN INSTITUTION.

Dr. Duhring's experience in the treatment of chronic ringworm in an institution,[5] illustrates once more the obstinacy of this affection, and offers valuable suggestions for its management. Ringworm had been prevalent in the institution for a number of years, and was steadily spreading in spite of the care of physicians and attendants. Forty-eight subjects, boys whose age varied from eight to twelve years, were found to be affected with ringworm of the scalp, as proved by microscopical examination. The affection was, in most instances, chronic, having existed from six months to three years, the average duration being about a year. All lived in the infirmary and had been isolated from their fellows. No reason could be found for the persistent spread of the disease, as the institution was clean, and the management and attendance most satisfactory. The nutrition of the subjects was, on an average, somewhat below par, although some few were even robust. Thirty-two of the forty-eight cases are described as bad ones with regard to their extent and chronicity. Some had been considered cured and had left the infirmary, only to return sooner or later with a recurrence of the affection. In some cases the whole scalp was more or less affected. The hairs were mostly broken off near the scalp, giving the appearance of dark or light points. The epidermis was very slightly affected, as a rule; no cases were seen where anything suggestive of alopecia areata was present.

The treatment, with which the paper especially deals, was conducted systematically and thoroughly. The hair was cut short about once a week on an average. Epilation was found to be very difficult to enforce, although its advantages are conceded by the writer. In choosing the remedies, the age, complexion and general nutrition of the patient were considered. The boys of dark complexion were able to bear much stronger preparations than those with light hair.

Carbolic acid proved disappointing, although used in a large number of cases in the form of ointment, or as a mixture with olive oil and glycerine, and the writer, from his experience in these cases, is inclined to allot it a low rank in the list of parasiticides. It could be used in full strength without causing much cutaneous disturbance. Tar was used chiefly in combination with carbolic acid or sulphur, but with no favorable results.

Iodine also, used as a tincture, or in combination with tar, was unsatisfactory in the chronic cases. Its failure to act is attributed to the fact that it is a discutient and while the epidermis is being thrown off, there is no remedy in contact with the scalp.

The oleate of copper, and the mercurials were thoroughly tested, without giving marked results. Corrosive sublimate was not deemed a safe drug to use, in view of the large extent occupied by the disease in most of the cases.

Croton oil did good service by its inflammatory action, being prescribed with olive oil one part to three, and in this strength proved safe and effective. After pustulation had been in this way established, mild sulphur or calomel ointments were used to control it. No unfavorable results from the oil were noted, and in general, although extensive and severe local inflammation was produced by many of the remedies tried, no case of eczema developed.

The best results were obtained from sulphur and from chrysarobin, especially from the latter. Sulphur was used as an ointment, in strength varying from one to three drachms to the ounce. It was found also to be very serviceable as a weak ointment after the stronger remedies had been applied. Various combinations of sulphur with soap, with tar ointment, and with carbolic acid were prescribed, but it was considered to be more effective when used alone.

Chrysarobin proved to be the most efficacious parasiticide employed. It was at one time or another employed upon the greater number of patients, and is spoken of with great praise. Twenty-nine cases were treated with this drug, in only seven of which was any irritation of the scalp produced. It was used in strengths varying from fifteen grains to two drachms to the ounce of ointment, the usual strength being one drachm to the ounce. In one instance it caused œdema of the whole face, and in one it was applied to the whole scalp without causing excessive inflammation. Pain in the head was complained of in but one instance, while in several, the whole scalp was somewhat inflamed without causing heat or pain. In some instances the forehead and sides of the face became stained without affecting the eyes. The desquamation following the inflammation was of a peculiar nature, consisting of large, thick, papery scales. The writer concludes from his experience with these cases — which were all chronic and had been previously treated with strong remedies — that there does not seem to be much danger from chrysarobin if applied under the physician's own supervision, and if the application is sparingly made, the face avoided, and the strength gradually increased. Its exhibition always requires caution. Its efficacy is attributed to its power of destroying the fungus by penetrating the follicles. It should be used in very small quantity, and rubbed in with a small bit of cloth or a mop.

ENGLISH VIEWS OF LUPUS.[6]

The discussion on lupus, held in the Section of Medicine at the annual meeting of the British Medical Association in Bournemouth, July, 1891, is interesting chiefly on account of the almost unanimous consensus of opinion in favor of the tuberculous nature of lupus.

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[5] American Journal of the Medical Sciences, February, 1892.

[6] British Medical Journal, October 10, 1891.

The discussion was opened by Dr. Payne, whose conclusions may be quoted at length. "Lupus may be regarded as a very slow and chronic form of the tuberculous process, remaining for the most part local. It differs from other forms of tuberculous disease chiefly in its slowness, its feeble infectivity, and the paucity of tubercle bacilli. Probably for these reasons it remains commonly confined to the organ (skin) in which it originates, and often to one part of it. It is a plausible hypothesis that these differences depend on the production of a weakened virus, or on the bacillus growing in unfavorable circumstances, as compared with the conditions present in internal parts. Now the most striking difference between the skin and the internal viscera is that of temperature. The temperature of most internal organs is probably about 100° F., while a surface thermometer applied to the skin is with difficulty brought up to near 90°, and in exposed parts with free radiation the temperature of the skin is probably on an average not much over 80°. This difference will be greater if the cutaneous circulation is sluggish, and also where there is much subcutaneous fat, one function of which tissue appears to be to allow the skin to have a temperature different from that of internal organs. Furthermore, internal tuberculous lesions always give rise to some fever, which is not the case with tuberculosis of the skin, and this further heightens the contrast, so that the temperature of an external tuberculous lesion may very well be 20° lower than that of a visceral lesion. The temperature and conditions of tuberculous disease of joints would, I should imagine, be about intermediate between the two. It is known that the 'optimum' temperature for the growth of the tubercle bacillus is about 100°, and, though it has been lately shown that it will grow at lower temperatures than has been supposed, the growth, under such circumstances, appears to be slow. It has not been ascertained, so far as I know, whether cultures grown at a low temperature are actually less virulent, nor whether the ptomaïnes, or other chemical substances they produce, are different, but while the bacillus grows so slowly, it seems certainly probable that there would be a difference in these respects also. I conclude, then, that the skin is a poor soil for the growth of the tubercle bacillus, and that though it may persist there, its condition is not flourishing.

"Looking at the question all round, it would seem, too, as if the bacillus were not easily made to take root in the skin. Inoculated tubercle, as I have said, seems very often to die out, without penetrating further. The bacillary growth of scrofulous glands or subcutaneous nodes, when it reaches the surface, mostly dies off, only exceptionally extending along the skin and producing lupus. Lupus on the surface of the extremities, as Mr. Hutchinson remarks, and as I can affirm, often dies off spontaneously, probably from the low temperature. The face is a more favorable soil, on account of the congestions and disturbances which are caused by the special blood-supply of that region; but anywhere it seems as if the bacillus had a difficulty in establishing itself, and when it does, it passes into a slowly vegetating form of slight virulence. When lupus is inveterate, as I before remarked, it seems to have almost lost its infective power, rarely producing new patches, and in such a case we have a bacillus that has been cultivated for many years at a low temperature, and would, therefore, be presumably less virulent."

With regard to the mode of infection, Dr. Payne considers first the probability of a direct inoculation of the skin through a wound or otherwise, and although in most instances this mode cannot be established, he does not doubt that instances of inoculation will be multiplied in the future. The other hypothesis is that of direct inheritance. He considers that the occurrence of absolutely congenital tuberculosis in bovine animals is clearly proved, and that there are one or two cases of the same kind in the human infant. Baumgarten is regarded as having drawn his theory much too far, especially in minimizing or even denying the possibility of infection with tubercle bacilli through the breath or otherwise, and there is a difficulty also in assuming such a long period of latency as is required to explain many cases of tuberculous disease on this theory. Direct inheritance of tubercle, if established, would explain very well the origin of many cases of lupus.

Mr. Calcott Fox, who followed, declared that the identity of what has been known as scrofula of the bones, joints, glands and skin with true tuberculosis must be admitted. True lupus (as distinguished clinically from scrofuloderma) could undoubtedly arise from these scrofulous lesions. His statistics, comprising eighty hospital cases of true lupus, entirely confirmed the facts: first, that scrofulous or tuberculous lesions of the skin, bones, glands and joints frequently complicated lupus cases; and secondly, that a family history of tuberculosis was especially frequent in lupus cases.

Dr. Radcliffe Crocker said that he admitted the bacillary origin of lupus vulgaris. He had seen lupus even in infancy, and thought that it commenced much more frequently in adult life than was generally supposed, and that adult lupus was almost always of the nodular form. Mr. Clement Lucas related several cases of direct inoculation. One of these was that of an attendant or companion to a lady, who for years had suffered and eventually died from the ravages of lupus. As she dressed her mistress's sores and was constantly with her, it was highly probable that the lupus patch which she exhibited on her nose was contracted from her mistress. Another case in which lupus spread from a wound was that of a policeman, twenty-three years of age. He had received a wound on the knuckle from striking a man in the mouth with his fist, and from this an indurated, crusting, lupus patch spread over the back of his hand. Another man, rather past the middle period of life, injured his forefinger in some machinery, and afterward neglected the wound. Lupus spread all down the forefinger, and gradually over the back of his hand.

A Bullock was recently received in England from New South Wales, which some time ago having had one of its hind legs broken at the joint, was provided with a substitute made after the style of the ordinary wooden leg. The bullock has since been able to walk about and to eat comfortably, and has been passed by a veterinary surgeon as being free from pain.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

In Memoriam.

DAVID HUMPHREYS STORER.

Born March 27, 1804. Died September 10, 1891.

GEORGE HINCKLEY LYMAN.

Born July 17, 1819. Died August 19, 1891.

Meeting of January 20, 1892.

In the hall were hung the portrait of Dr. Storer, by Vinton, presented to the Medical Library Association three years ago by his friends in the profession, and a portrait of Dr. Lyman recently presented to the Library Association by his widow.

Dr. Storer.

Dr. S. L. Abbot: It is my grateful duty at this time, Mr. Chairman, in response to your call to say a few words in commemoration of the great worth of our departed friend and associate, Dr. David Humphreys Storer. It is eminently proper that this Society should pay its tribute of respect and affection to one who was so highly honored in this community. Secluded as he was for so many of the last years of his life by bodily infirmities, from free communication with his professional brethren, a whole generation of young physicians, members of this Society, has come into active professional life without any personal knowledge of him. It is due to them, if to no others, that the story should be told of his admirable traits and his honorable, useful career.

My acquaintance with Dr. Storer dates back to the very commencement of my professional studies, when I entered as a pupil the Tremont Street Medical School in the early days of that admirable institution. The impression which he gave me at that time remained with me to the end of his life, — that of a warm-hearted, high-toned, conscientious man. There was a cordiality in the grasp of his hand which made you feel at once that he was of a sincere, sympathetic nature. No one realized this more fully than those who were so fortunate as to come under his professional care. He was a skilful, judicious physician, as I early learned from personal experience. In his relations with men he was no respector of persons; the poor and the rich were both alike to him, and in his large practice all felt that they had the devoted care of a personal friend. He had a high sense of honor and nothing stirred his indignation more quickly than any story of meanness or dishonor. As is common with those of such an ardent temperament his impulsive nature sometimes put him in uncomfortable positions which a man of cooler temper would have avoided. I well remember one instance of this which resulted from his action at a meeting of the Counsellors of the Massachusetts Medical Society, years ago, which had much to do with the expulsion of an unworthy member from the Society. At that meeting, when the conduct of the offender was under discussion, Dr. Storer took so active a part, that after the expulsion of the member, he was promptly notified that an action for damages to the amount of $10,000 would be brought against him for defamation of character. But the doctor was not obliged to face the storm alone. The Society at once took up the case and made itself fully responsible for any pecuniary loss which might come to Dr. Storer in consequence. The suit, I believe, was never brought to trial.

Dr. Storer was always a warm friend to young physicians, and personally I was under great obligations to him in my early professional life. It was through his suggestion and influence that I obtained the position of Admitting Physician to the Massachusetts General Hospital. By the gradual expansion of the duties of that office while I held it, the Department of Out-patients grew up, which has developed into such an important addition to the charities of that noble institution, and which was followed in after years by organizations of a similar nature in other hospitals here.

Dr. Storer was a hard worker. He entered into everything which he undertook, with the greatest earnestness. Notwithstanding the pressing demands of a growing practice he found time, as a member of the Biological Commission of Massachusetts, to prepare one of its most valuable contributions to the natural history of the State in his Report on the Fishes. He prosecuted this work with the greatest enthusiasm. The field of study was at that time almost an unexplored one. I well remember the happiness which the acquisition of a hitherto undescribed species brought to him and his eagerness to exhibit it and point out its special features at a meeting of the Boston Society of Natural History. As the result of his labors, besides making a valuable contribution to the science of Ichthyology, he brought together a large amount of material relating to the economic value of our fisheries which makes his report, as a whole, unique, and still keeps it in the front rank of works of its class at the present day.

In conclusion, it is but feeble justice to the memory of Dr. Storer to say that he was a high-toned, honorable man, true to every position of trust and responsibility in which he was placed, and beloved in this community as a warm-hearted, faithful, conscientious physician.

Dr. G. J. Townsend, of South Natick, who was not able to be present, sent the following letter:

An uninterrupted friendship of fifty years with Dr. Storer, impels me to offer my tribute to those great qualities of mind and heart, which have endeared him to thousands of friends and patients, have commanded the respect and regard of his brethren in our profession, and have rendered him a power for good in the community, rarely equalled.

My first acquaintance with him was as his pupil, ever earnest and steadfast in the pursuit of knowledge himself, devoting himself unweariedly not only to the study of medicine, but to the collateral sciences, he was ever ready to impart his knowledge to the student, who might thus profit by the practical results of so much time and labor. Dr. Storer was by nature a teacher and to him belongs the credit of originating the Tremont Street Medical School, which, as the germ of the present curriculum of Harvard, has borne such valuable fruit. To his students he was always particularly kind, and I shall never forget his attention to me, when striken down in the midst of my studies, by disease of the lungs.

Of Dr. Storer's middle life, others are better qualified to speak than myself, as I saw him only occasionally in consultation, etc., living as I have, a secluded life in the country. But his wise precepts firmly engrafted on my mind, have served me in good stead in many a rugged case of midwifery, in regions remote from all available aid, for competent physicians were rare in the early days of my country life. Patience and expectancy up to the proper time for interference, prompt and fearless action when that time came, were his constant instructions. My nurses sometimes tell me that I work over my obstetric cases more than many physicians. Dr. Storer always taught that the very presence of the medical attendant inspires the patient in a lingering case with courage and confidence, thus often enabling nature to terminate a case, without instrumental interference.

His elevation to the chair of obstetrics was a source of great gratification to him, coming, as he has told me, most unexpectedly, — for with characteristic modesty, he had made but little personal effort to obtain it. How successful his teachings in his enlarged sphere were, the well-filled seats in his lecture-room abundantly testified.

In Dr. Storer's declining years our relations became more intimate. Passing the summer in my immediate vicinity, it was my good fortune to minister to him and his through many a trying illness. I say good fortune because he was always satisfied with any attention, showed so much confidence in my advice, and was gratified at any little service, out of all manner of proportion it often seemed to me, to its real worth.

A vesical calculus was the final cause of his death. For, though it was crushed and removed by the late Dr. Bigelow, he never entirely recovered from the subsequent cystitis. Very rarely would a word of complaint come from his lips, amidst all his sufferings, and they were many and severe. Once in a while, when in special distress, he would say, "it is confounded hard, Townsend," and I felt that it was hard, that one who had done so much to relieve the sufferings of others, should be so distressed himself.

After the death of his wife to whom he was devotedly attached, life seemed to have lost much of its attraction, but he was always cheerful and most genial to his friends. Full of years and honors, with intellect unclouded to the last, he has passed on the path that none can turn, soothed and enlivened by the devoted care and attention of his children, and hosts of friends. He has left a rare example of faithful work, devotion to duty, and of affectionate regard for his friends, of priceless value. May we all profit by it.

Dr. George C. Shattuck wrote as follows:

Yours of the 22d, inviting me to be present at the meeting of the Suffolk District Medical Society, is at hand. My medical adviser says that it is better for me not to accept your kind invitation. My own inclination is to go, for I would gladly bear testimony to the worth and accomplishments of Dr. Storer. I knew him very well, having been his associate for many years in the Massachusetts General Hospital and in the Medical School. He, certainly, was very successful, both as a medical practitioner and as a professor. He had been diligent as a student of medicine and soon acquired a large practice. He had a love of his profession, a zeal and enthusiasm which stood him in stead, as a practitioner and a teacher. He gained and maintained the respect and confidence of all to whom he ministered. He lived many years in retirement, but maintained his interest in his profession, and had a good and pleasant word to say to all who called on him. He has left an example of conscientious discharge of duty to all who survive him.

Dr. O. W. Holmes sent the following tribute:

I am very sorry that it will not be in my power to attend the meeting at which the memory of our professional brothers, Dr. Storer and Dr. Lyman are to be tenderly and respectfully recalled by those who best knew and who best appreciated their character and their services.

Of these two gentlemen, Dr. Storer was the one with whom I was most closely and longest associated. Soon after I established myself in Boston, an organization known as "The Tremont Medical School" was formed by the association of Dr. Jacob Bigelow, Dr. Edward Reynolds, Dr. David Humphreys Storer and myself. We were not all young, but we were all enthusiastic, sanguine, light-hearted, confident of success. Certainly I had every reason to think myself sure of doing well in connection with such colleagues as these three gentlemen — Dr. Bigelow, a leading practitioner, a man of exceptional ability and acquirements, sagacious, prudent, eminently practical in all his ways, the central figure of the group; Dr. Reynolds, full of good-nature, ready to join in every forward movement, producing in the little band of teachers much the same benignant sense of happy companionship that President Kirkland carried with him into the larger meetings of the University Instructors; and Dr. Storer, whose contagious enthusiasm never admitted for a moment that the Tremont Medical School could be anything but a success, which it eminently proved itself. It was a nursery of professors, all its teachers becoming, sooner or later, members of the Medical Faculty of the University.

In my very brief note to the Natural History Society, I mentioned the peculiar personal interest which Dr. Storer took in the students. He, more than any of his colleagues, carried out the old idea of the Hippocratic oath, which made the relation of medical teacher and pupil almost like that of father and son. The warm cordiality of his manner and the impulsive heartiness with which he entered into their plans and their feelings, kept him in nearer intimacy with the younger scholars than any of us could claim.

Of Dr. Storer's eminence in the specialty to which he was largely devoted, his fellow-practitioners can speak with authority and bear ample testimony. Of his accomplishments as a student of natural history, his accuracy as an observer, his faithful work in ichthyology he has left abundant record. He lived a long, busy, useful and honored life, and to many whom he leaves behind him the world seems colder since his warm heart ceased beating.

Dr. A. D. Sinclair spoke feelingly as follows:

We have assembled this evening to commemorate the life of the late David Humphreys Storer. I have come hither to lay a stone on the cairn to his memory. It is but a feeble expression of the regard in which I held the deceased and now cherish his memory. He was one of my earliest, most respected and beloved masters in medicine; and for a period extending over thirty-seven years, my affection for him remained unchanged. His memory is sweet to me. Dr.

Storer was trusted, honored and beloved by his own profession and the community among which he lived and worked. His patients respected and loved him and for more than half a century his was the prominent name in obstetrics in Massachusetts. Dr. Storer was, moreover, a student of natural science. His contributions to the natural history of Massachusetts will remain a monument to his memory for their accurate and lucid observations. His relations to the world were always transparent and upright. He was a hater of sham and subterfuge; an honest man, one who adorned his profession by his skill, personal dignity, manliness and worth.

Dr. G. G. Tarbell said: Since I received an invitation to speak here this evening, I have sought in vain to find adequate words in which to express the feelings of esteem and affection in which I have always held Dr. David Humphreys Storer. Still less has it been possible for me to draw such a picture of his character as to convey to a stranger any idea of the man.

When, in 1862, I was taken by a friend to his house to be introduced, I approached him with that reverence, almost awe, which the newly matriculated medical student always has for the professor and practitioner, then in the very zenith of a successful career. I had heard much about him. I was prepared to respect him, but the straightforwardness of his manner made a great impression upon me, and his frank and genial ways, without a suspicion of affectation, entirely and immediately won me to him. The feeling of respect soon grew to be one of affection, which strengthened from that day until his death. At another Society in this city some description has been given of his scientific attainments. The gentlemen who have preceded me this evening, and the letters from his cotemporaries which have been read, do not exaggerate the position which he held in the community. I will leave it still for others to describe many of his strongly marked characteristics. I will attempt no eulogy, nor will I attempt even a sketch, but will occupy the few moments allotted to me in brief mention of one only of the many strong points in his strong character. I refer to his robust, straightforward honesty — his sincerity and singleness of purpose — his absolute and unswerving regard for the truth. His ways were not devious. He went straight for his object, without subterfuge, and he asked the same frankness in others. For errors, for differences of opinion, and for mistakes of judgment, he had the utmost charity. For ignorance, and incompetence, even, he had only pity; but for a wilful misrepresentation, for a concealment of fact, for a partial though plausible statement of a case, he had both anger and withering contempt. And he had the courage of his convictions too. He called a spade a spade. He did not mince matters in his denunciation of untruth, or of the man who knowingly departed by ever so little from the strictest verity. This characteristic brought him occasionally into unfortunate conflict with a professional brother, to his own great grief, but it was with him a matter in which there was no compromise. The other must yield or forfeit his esteem. Yet he was a model consulting physician, giving his opinion boldly, — giving the patient the benefit of the skill on account of which he had been called, — yet doing it in such a way as to bring no discredit upon his younger brother. I know whereof I speak, for I often had occasion to invoke his aid in my younger professional days.

"Faithfully yours" was his usual phrase in signing his letters, — and fully did he keep faith with every one to whom his word was given. Sincerity of purpose was his own high ideal, and by that standard he tried all men. He was unerring in his detection of cant and hypocrisy. Codes of ethics he said were made for thieves, not for an honorable profession; and his own life, not only in its relation to his professional brothers, but with the whole world, was held up to the standard of that earliest and simplest code, "What ye would that men should do to you, do ye even so to them."

Dr. A. T. Cabot: Dr. Storer's professional activity ceased before most of us here began the study of medicine. I can only speak from hearsay of his excellent qualities as a teacher, whose enthusiasm inspired his hearers.

You have heard of his professional life from those who were his personal friends during that time, but his scientific interest was not confined within the narrow limits of his profession.

Besides his activity in medicine he was a hard student of natural history, and served as curator and later as vice-president of the Boston Natural History Society. Of the quality of his scientific work you may form some idea if I quote to you the opinion of Mr. Samuel Gorman on Dr. Storer's most important ichthyological publication. Mr. Gorman, who is the assistant in charge of the department of fishes and reptiles at the Museum of Comparative Zoölogy in Cambridge, says: "The history of the fishes of Massachusetts is a classic in North American ichthyology that must serve as a basis for the future histories of New England fishes." This is high praise and gives us some idea of the untiring zeal of this busy practitioner who thus occupied and enriched his leisure moments.

Leaving now his achievements and coming to the man; it gives me pleasure to recall the genial, kindly presence of my old friend and to speak of those qualities that endeared him to all. He was one of the most sympathetic men I ever knew, and had a genius for cordiality that made a meeting with him an unfailing pleasure. These characteristics were mingled with such courtesy of manner and good feeling that it was easy to see whence came the love and devotion felt for Dr. Storer by his friends and old patients.

Although for many years out of practice he never lost his interest in medical matters, and was keenly alive to every advance. Many interesting talks have I had with him over the progress of abdominal surgery, and he was as much excited over the hopes and fears that ran through the medical community when Koch's material was being tried, as any student could be.

In order that his memory may remain with us I wish to offer the following resolution to be entered in our records:

Whereas, Dr. David Humphreys Storer, distinguished for professional and scientific attainments, and endeared to us by kindly, generous qualities of heart and mind has gone from our midst:

Resolved, that while his death has filled us with a sense of personal loss and lasting regret, still we feel that we have reason to be grateful that he was so long spared to live among us, retaining the zeal and enthusiasm of youth to a good old age, and acting as a delightful link between us and the older generations. Realizing the loss to his family and friends we extend them our truest sympathy and share their sorrow.

DR. E. G. CUTLER said: Before the Section takes action on the resolution presented by Dr. Cabot I would like to pay my last tribute of respect to the memory of my medical sponsor Dr. Storer, a genial, kindly, fatherly man for whom I had an affection equal to that of kinship.

His whole scientific and medical life has been most aptly and faithfully portrayed by a distinguished member of our Section before another Society: while the words of those of his fellow-workers and pupils who have preceded me are still echoing in your ears.

As one of the last of the many admitted to his friendship I can only speak of the few last years of his well-rounded life, when at the age of seventy-five, a time when most men say the race for them is run, I found him in the full possession of his faculties and ready to take his share of work as it might come. His interest in and his mastery of the recent medical advances, as already alluded to by Dr. Cabot, were a source of astonishment on first acquaintance and were maintained as long as any strength remained.

A marvel always of punctuality, he frequently told me that during all the long years of his professorship when he was in the midst of a large practice he was never absent from his post of duty once and was only tardy three times.

Dr. Storer was the first Medical Examiner appointed in Boston of the Mutual Benefit Life Insurance Company of New Jersey, and he remained its chief examiner and medical referee for over thirty-five years, and so regular was he in his attendance that he was seated in his accustomed chair daily as the clock ceased striking the hour of twelve.

He was idolized by his many patients and no surer way to their attention was to be obtained than to claim him as an intimate friend.

Ardent, emphatic, outspoken, free of speech, it was a constant wonder that he bore his afflictions so calmly and so patiently to the last.

In his death the young physician has lost his best friend, the profession its most loyal supporter and all of us a most noble example of what the true physician should be.

(*The report of that part of the meeting relating to Dr. Lyman will appear in our next issue.*)

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

REGULAR Meeting, Monday, January 4, 1892, DR. S. G. WEBBER in the chair.

DR. WM. M. CONANT read a paper on

IMPERFORATE RECTUM.[1]

DR. M. H. RICHARDSON: My experience in cases of imperforate rectum or anus has been limited to three or four. In all the cases there has been, at the usual seat of the anus, at least a dimple, and in most a distinct depression. In most of the cases it has been possible to feel the bulging of the intestine above. In cases of this kind it is of course imperative, in order to save the life of the child, to give exit to the intestinal contents. We all do an operation for this purpose as a matter of routine. In my experience, however, the immediate mortality is very great, and if any considerable portion of the rectum is obliterated I believe the prognosis for the future life of the child is unfavorable. I do not think that life is worth living which is dependent upon constant dilatation of a congenital stricture of the rectum. It is quite different, however, in those cases where the orifice is closed by a thin layer of skin and mucous membrane. In such it is quite practicable to stitch the mucous membrane of the rectum to the skin and to have no after-trouble from the congenital deformity. In those rare forms of congenital malformation where it is necessary to open the intestine in the groin or in the back, after the method of Littré, or by the classical operation of lumbar colotomy, recovery is even less desirable.

Dr. Conant's very brilliant case has interested me greatly, and his method in the emergency seems to me a distinct contribution to the literature of the subject. At birth, few children have the strength to survive the combined operations of laparotomy and attempts at restoring the canal from below. We get by this method, nevertheless, a most excellent idea of the congenital condition, and we are enabled thereby to operate understandingly where otherwise we should be groping about in great obscurity. I have felt the uncertainty of establishing communication between the distended rectum and the anus even in simple cases. My method has been to put in an aspirating needle of considerable size until meconium escapes, then to dilate this opening, after enlarging with the straight, probe-pointed bistoury. Once having got the finger into the rectum, the subsequent manipulations are quite simple. Where the obstruction is up more than an inch or two, it seems to me impracticable and unwise to attempt a union of the mucous membrane with the skin. Yet if this is not done, we must anticipate a chronic stricture which will require constant dilatation. Two or three such cases in my experience have proved fatal, and as I could not have an autopsy I have been unable to tell exactly the cause of death. It has occurred to me that in some cases there may have been an extravasation of meconium, possibly through a diverticulum of peritoneum, where the needle had gone through the recto-vesical pouch, and there has been extravasation. It is impossible to say, however, that this has been the case. It is much more probable that the child died from the combined shock of the congenital condition and the surgical efforts to relieve it.

An unusual form of congenital malformation came under my observation this summer in a girl six or eight months of age, who was born with a communication between the vagina and the rectum. I examined the case very carefully, and had it under observation for some weeks. There was a dimple at the place where the anus should be. Just inside the ostium vaginæ there was an opening about a quarter of an inch in diameter from which the fæces escaped from time to time. The case seemed a very simple one previous to the exploration, for it was very evident, apparently, that it consisted simply of a communication between the rectum and the vagina. After etherization and exploration I found that there was apparently no uterus, that the communication led into a blind pouch somewhere in the region of the margin of the pelvis on the left. On dilating the vaginal opening sufficiently to explore, I found that the rectum or the sigmoid flexure communicated with the vagina about opposite the opening of this cul-de-sac. The condition of things could be ascertained only approximately, but there seemed to be apparently a double bowel, the one toward the left ending in a blind pouch and the other toward the right being the ordinary sigmoid flexure. The opening was found to be near the fundus of the vagina, where the os uteri should be. No uterus could be felt, nor was there any sign of a cervix or os. The rectum was obliterated from the utero-rectal fold to the anus. It was obvious that nothing could be done to relieve this condition and that the child's vagina would always have to be a part of the rectum. After dilating the vaginal opening, the child was sent home, to remain under the observation of her physician with directions to keep the opening patent by occasional dilatation.

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[1] See page 287 of the Journal.

Dr. C. W. Townsend said he had seen several cases of imperforate rectum in the Clinic of the Boston Lying-in Hospital, and he had found seven cases in the records of the hospital out of 5,500 cases, a proportion of a little over one-tenth of one per cent. Another case is recorded among the out-patients. Five of these cases were operated on, all at the Massachusetts General Hospital, with one recovery; two died without operation, and one was still-born. Three of these cases were operated on on the second day, including the one that recovered; two were operated on on the third day. In one case the lower end of the gut was sutured to the blind rectal pouch and the partition between the two was then incised and dilated. In all the other cases including the one case that recovered the operation consisted simply in passing a trocar and dilating.

Dr. Townsend remembered especially a case operated on by Dr. Cabot in 1886. There was a normal anus with a blind anal pouch nearly an inch deep. The lower end of the gut above could be felt through the anal pouch, and a trocar was passed giving vent to meconium. The opening was then dilated, but no more meconium appeared, and the patient died in four days. The reasons for this were clearly shown at the autopsy made by Dr. Townsend. The inner end of the anal pouch was separated from the rest of the gut by a slight fibrous cord about an inch in length. The gut above being distended, pushed down on the anal pouch so that the trocar easily pierced it. As soon as some of the meconium was evacuated the gut returned to its normal position, an inch distant from the end of the anal pouch, on which alone was the force of dilatation expended, leaving the gut above unrelieved except by a trocar puncture through which meconium escaped into the surrounding tissues.

A ninth case occurred in the obstetrical department of the Boston Dispensary. Here, when the baby was nearly moribund, Dr. Reynolds did Littré's operation, but death soon occurred.

In speaking of a projecting fold or valve in the rectum, the reader called to mind a case seen by Dr. Townsend only after death on the third day. An out-patient of the Lying-in Hospital, where all the symptoms of imperforate rectum had been present, namely, non-passage of meconium, distension and tympanites, and vomiting; on making the autopsy nothing could be found in the way of intussusception or congenital occlusion of the bowels, but a distinct valve-like fold existed about two inches from the anus, which allowed easy passage of the finger up from below but which had apparently effectually blocked the passage of fæces from above.

The kindred subject of imperforate urethra he would like to mention here merely to say he had never seen a case and none are recorded in the books of the Boston Lying-in Hospital. The externes of the hospital frequently think they have such cases, and report that no urine has been passed for twenty-four hours since birth. Of course, the observation may be defective in many of these cases, but Dr. Townsend believes that it is not a very rare thing for infants to pass water unnoticed during birth and then not to empty their bladders for twenty-four hours. He had seen cases where the meatus of the male child appeared to be lacking, having his attention called by the anxious externe, and found that the lips of the meatus were simply stuck together, not sufficiently so, however, to prevent micturition.

Dr. Townsend had within a few days seen a young woman of twenty-one years in the Massachusetts General Hospital Out-patient Clinic, where the rectum opened out, inside the posterior commissure of the vulva, an anomaly unrecognized by the owner thereof.

Dr. M. H. Richardson showed some

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and reported briefly a case in which they were removed from the common duct.

Recent Literature.

Denmark: Its Medical Organization, Hygiene, and Demography, pp. 473. Copenhagen, 1891.

At the Second International Congress of Hygiene, which was held at Brussels in 1876, a series of papers was presented in the French language, upon the same subject as the present volume. This new volume (published in English) treats more completely of the sanitary progress of that country during the past fifteen years. It was prepared by a large corps of editors, many of whom are officers of the Danish government, or of the city of Copenhagen, and submitted to the recent Congress of Hygiene at London.

The first sixty pages are devoted to the medical organization of the country, civil, military and naval; forensic medicine, medical education, dentistry, pharmacy, midwifery and veterinary practice, each is treated in a brief chapter.

The chief portion of the volume is devoted to public hygiene, and the principal topics treated in this section are, general sanitary measures, such as water-supply, house ventilation and heating, lighting, sewerage, disposal of the dead (a crematory was built in 1886, but this process of disposal was soon declared illegal by the government).

Other chapters relate to food inspection, house inspection, and the hygiene of schools, factories, prisons and hospitals, poor-laws, first aid in cases of accident or sickness, nursing, quarantine and the control of infectious diseases, public baths and the abuse of alcohol.

The section upon the dwellings of the working-classes shows that much attention has been paid to this subject. The Classen Trust Fund was created at the close of the war of 1864, to give homes to people from the provinces who had taken refuge in Copenhagen. It provides 380 small tenements, one-third having single rooms and kitchen, and two-thirds having two rooms and kitchen. The rents are very low, and the returns hardly one per cent. per annum.

Several working-men's building societies are also in successful operation, furnishing homes of two to four rooms each, both in Copenhagen and in the smaller cities. The Danish Society for the aid of the crippled and deformed is a well-organized society, established by a philanthropic clergyman in 1872. It maintains a polyclinic and a manual training-school, in which many ingenious devices are introduced to aid paralytics, single-handed persons and others in pursuing industrial employments.

The last section of the book is devoted to statistical information, including the usual matters pertaining to registration, the census of the blind, deaf and dumb, insane and imbeciles. The population of the kingdom, including that of Iceland, Greenland, and the Danish West Indies is at present nearly identical in numbers with that of Massachusetts. The increase since 1840 has been about one per cent. annually. The death-rate (1880–90) was 18.7.

Surgical Anatomy for Students. By A. Marmaduke Sheild, M.B. Cantab., F.R.C.S., Senior Assistant Surgeon, Aural Surgeon, and Teacher of Operative Surgery, Charing Cross Hospital. New York: D. Appleton & Company. 1891.

This book is intended for students to use with the living model, and is the substance of a series of demonstrations delivered by the author to students in course of preparation for examinations. It does not pretend to be a complete work on surgical anatomy; but considers the various anatomical regions, such as the head and face, the neck, abdomen, etc. It is reliable, and is more readable than "Holden's Landmarks." Though the book is addressed to students, it can be read with benefit by all operating surgeons. The book is filled with practical suggestions in the application of anatomy to surgical work.

Practical Intestinal Surgery. By Fred B. Robinson, B.S., M.D., Professor of Anatomy and Clinical Surgery, Toledo Medical College, Toledo, O. In two volumes. The Physicians' Leisure Library, Detroit, Mich.: George S. Davis. 1891.

To any one engaged in abdominal surgery the experiments recorded in these two little volumes will be of interest. They are not written in an attractive style, but are faithful presentations of much interesting work.

Hospitals and Asylums of the World: Their Origin, History, Construction, Administration, Management and Legislation. With plans of the chief medical institutions accurately drawn to a uniform scale, in addition to those of all the hospitals of London in the Jubilee year of Queen Victoria's reign. By Henry C. Burdett. In four volumes and portfolio. Vols. I and II: Asylums — History and Administration. London: J. & A. Churchill. 1891.

The author of this handsome and elaborate work has been engaged for twenty-five years in the administration of hospitals and kindred institutions, and during the earlier part of that period gained practical experience in every department of the work by active participation, first as a paid official, and subsequently as governor and hospital-manager. During these years his interest in the subject of hospitals has been constantly growing.

For the purpose of visiting hospitals and kindred institutions and comparing their merits and defects, he has travelled on the continent of Europe, in this country and in the British Colonies. He was here a short time ago, not for the first time, in the interest of a national pension fund for nurses. He is known in connection with the organization of pay hospitals for the well-to-do in London and other large cities. He is the author of a number of books on hospitals and subjects connected directly or indirectly with hospital administration.

He has spent nearly twelve years in the preparation of these volumes, four in number, the first two of which — the only ones as yet received by us — deal with asylums for the insane: their history, administration and construction. The third and fourth volumes will deal with hospitals for the sick and similar institutions established for the treatment of acute diseases and accidents. The supplementary portfolio will contain many hundred plans of the principal hospitals throughout the world.

A book of this sort, undertaken largely as a labor of love by an intelligent and experienced enthusiast who has devoted so many years of work to his task, cannot fail, notwithstanding the many difficulties the subject presents, to be of great value as a standard authority upon the subjects treated. The publication of the book has been somewhat delayed in order to obtain the figures of the last United States census in regard to the insane population of this country. These figures, however, were not available when the book was sent to press, and a longer delay was deemed unadvisable as the returns from other countries were losing thereby in accuracy.

The author expresses the belief that intercommunication and co-operation amongst all those engaged in the administration of asylums and hospitals, and in the treatment of the inmates of such establishments thoroughout the world, would result in immeasurable benefit to all concerned. He offers his book as a contribution to this desirable end.

The press-work is admirable, reflecting the liberality of the author and the care and taste of the publishers.

Stricture of the Rectum: A Study of One Hundred and Thirty-eight Cases. Second Edition, Enlarged; pp. 48; illustrated. By Chas. B. Kelsey, M.D. New York. 1892.

This monograph opens with a complete classification of the possible forms of this disease, and seems to be satisfactory and complete. The symptoms of the affection are concisely reviewed. The next seven pages are devoted to "diagnosis" including "physical examination." The greater part of the brochure (35 pages) is devoted to "treatment," and the work. concludes with a tabulated list of the author's operations and results. He discusses in this connection the methods of dilatation, incision; partial destruction, (that is, electrolysis, raclage, cauterization, etc.,) excision, extirpation. He describes his method of operating, that of Kraske, colotomy, and ends with a few remarks on general treatment.

The book is exceedingly interesting, is well written, and is a thoroughly modern work. The author quotes somewhat extensively from Cripps and Allingham; and, with the exception of the subject of colotomy, the description of operative technique is at times somewhat abbreviated. The results shown by his tabulated cases are excellent.

THE BOSTON

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WORD-BLINDNESS.

Facts are accumulating which prove the validity of the doctrine of partial memories connected with certain centres of the cerebrum. Each special sense is believed to register its own impressions as the condition of their being remembered, and the permanence of the memories depends on the integrity of the nervous substraction. Visual images have their seat in the occipito-angular region, auditory, in the first temporo-sphenoidal convolution. Doubtless, the memories associated with smell, taste and touch, have a similar localization in some part of the cortex.

Words, which are visual and audible signs, have a double registration, in the cortical centres, both of sight and hearing, and the recognition of an object depends on the calling into consciousness of its image in one or the other of those respective centres, that is, by the sight of the object, or by its written or spoken signs. Disease of the registering centre may destroy sets of memories connected therewith, and the written or spoken word fails to elicit recognition; we have what is called word-blindness or word-deafness.

Word-blindness is defined as the abolition more or less complete of the memory of figured signs. The subject is unable to read letters, syllables and words, the divers figured signs placed before his eyes, while he may be able perfectly to distinguish their form, outline, and general position.[1] "To read is to translate writing into words, to interpret an image. In word-blindness, this translation, this interpretation are impossible by the intermediation of the sight."

Kussmaui in 1877 was the first to describe word-blindness as a distinct entity. Wernicke had a few years before treated in a very lucid manner of word-deafness under the name of "sensorial aphasia." Guenean de Mussy in 1879, published in Galezowski's *Journal Ophthalmologique*, a remarkable paper on "asemiognosie optique" or "aphasic amblyopia," in which he records a typical case of his own, and gives a clear description of the malady (reprinted in the fourth volume of his *Clinique Médicale*). The patient of Guenean de Mussy was able to read by retracing with an instrument or simply with the finger the letters which composed the words, "the muscular sense supplying the visual."

In 1881 Nadine Skwortzoff published a memoir in which fourteen cases — some typical and some incomplete — were published; while about the same time, Dejerine communicated to the *Societé de Biologie*, of Paris, the first case which had been observed in France connected with a careful autopsy. Two cases followed by an autopsy were shortly afterward published by Chauffard and another. These were the only cases *with autopsy* which Charcot had before him, when in 1883, he delivered his lectures on aphasia, which form the substance of Bernard's book.

Of late years facts have been multiplying; the symptoms and pathological anatomy of sensorial aphasia are now tolerably well known. (See articles by Bastian, Ferrand, and M. Allen Starr, also Seguin's and Gray's valuable summaries in *Sajous's Annual.*) Dr. Starr, in *Brain*, July, 1890, analyzed fifty cases of sensory aphasia, in which Brocas's centre was not diseased, and found that in all, the lesion lay in the lower posterior third of the cerebrum. This writer says: "If the lesion be extensive enough to involve the cuneus, or deep enough to reach the visual tract to the cuneus as it passes beneath the angular gyrus and convexity of the occipital lobe, it will produce hemianopsia; if not, actual blindness may not accompany psychical blindness. In either case, it is found, that when things are not recognized, they cannot be named when seen." When limited in extent and strictly cortical, the lesion was found in five cases in the angular gyrus and in the inferior parietal lobule. It is here, therefore, that the visual memory pictures lie, according to this writer, and he states that in all the cases in this collection in which the lesion involved this area and in which reading was tested, there was word-blindness.[2]

The most recent contributions to our knowledge of the subject of psychical blindness have been made to the Paris Biological Society. At the session February 13, 1892, Dr. Charles Richet presented a dog which had been mutilated by ablation of the cortex of the *pli courbe* (angular gyrus); there was permanent abolition of the mental representation of objects. This dog, when placed in an apartment, distinguished the furniture and avoided hitting objects, but these objects awakened in him no idea, no image; as proof of this, if a rabbit were placed in the room, the dog passed to one side without paying any attention to the animal. In order that the rabbit should be recognized it was necessary that the recognition should take place by other senses than the sight, as olfaction. Thus, when the rabbit was placed under the dog's nose, the dog snapped at it. M. Richet claimed that the facts showed that in this animal, if visual perceptions persisted, the mental representations which these perceptions awaken in the normal state were completely abolished.

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[1] Bernard.

[2] Sajous's Annual, 1890.

At the session held January 16, 1892, an interesting case of word-blindness with agraphia, followed by an autopsy, was reported by Dr. P. Serieux. The patient was a woman, aged sixty-five years. Vision was intact, there was no hemianopsia, but the patient could not read either written or printed words. Writing under dictation, and after copy, were also as impossible as spontaneous writing. There was neither motor aphasia nor word-deafness. At the autopsy, a recent ventricular hæmorrhage was found as the immediate cause of death, but the sole lesion to which could be referred the alexia and the agraphia, was an old focus of softening as large as a five-franc piece, occupying the whole of the inferior parietal lobule. The second and third frontal, the lobule of the insula, the Rolandic convolutions were intact. Serieux defines this as "a case of graphic visual amnesia, not to be confounded with agraphia from loss of the memory of the movements necessary for writing, an agraphia dependent on a lesion of the foot of the second frontal convolution."

At the same meeting, Dejerine remarked that the case of M. Serieux was just like an observation which he reported last year relative to a case of word-blindness with total agraphia due to a lesion exactly localized in the *pli courbe.* In both cases, the agraphia resulted from destruction of the optical images of letters, and the centre of these images, M. Dejerine believes to be the angular gyrus.

At the meeting of the *Société de Biologie*, February 27, 1892, the subject was continued, and Dejerine spoke "of the localization of word-blindness with integrity of the faculty of spontaneous writing and writing under dictation." The substance of his remarks was as follows: We are now able clinically to distinguish two forms of word-blindness. In the one, the word-blindness is accompanied with total agraphia. In the other, writing, spontaneous and under dictation, is conserved, while the act of copying is performed in a defective manner. The first of these forms has been designated by Wernicke under the name of cortical alexia, and the second under the name of sub-cortical alexia. The anatomical localization of the first of these forms is the angular gyrus of the left side, and the patients cannot read because their centre of the optical images of letters is destroyed.

The form of word-blindness in which spontaneous writing and writing under dictation are conserved, has not yet been anatomically localized. The clinical and psychological analysis of this form, however, tends to show that it is due, not to destruction of the optic centre of letters (the *pli courbe*), but to a lesion separating the *pli courbe* from the cortical centres of common visual memory (the occipital lobes).

Dejerine's patient was a man aged sixty-eight years, intelligent and cultivated. One day (in 1887) this man found that he no longer understood anything that he read. Dejerine, when consulted, noted the existence of complete word-blindness with right lateral homonymous hemianopsia and hemiachromatopsia. There was also complete musical blindness, for the man, though a good musician, could not read a note of music. Spontaneous writing and writing under dictation were perfect, and as normal as in the physiological state; the act of copying, however, was very defective; the patient copied letters and words, but slowly and painfully, and on condition of having the copy incessantly before his eyes, as the outlines of the letters were all strange to him. Though afflicted with verbal and musical blindness, he could read figures and make calculations, both mentally and by writing. There was no word-deafness, no disturbance of speech, no hemiplegia, or hemianæsthesia. It was quite easy in this patient to awaken in his interior vision the optical image of letters which he could no longer comprehend in the act of reading by making him trace in the air these letters with the finger.

These symptoms continued for four years, while this patient was under observation. The word-blindness did not improve. This man, who went out every day, could never read the name of the street, the signs on the shops, an advertisement, a journal, not even the letters which he himself wrote, and which were corrected by others. He continued to transact his business, till December 31, 1891, when he was attacked suddenly, and without hemiplegia, with "pronounced paraphasia and total agraphia." He had no "shock," or loss of consciousness, and preserved his comprehension of spoken language till his death, which took place suddenly January 10, 1892.

At the autopsy, two lesions were found in the left hemisphere, one old, the other recent. The recent lesion consisted in a patch of red softening occupying the inferior parietal lobule and the angular gyrus. The old lesions — yellow patches of atrophy — occupied the point of the occipital lobe, the base of the cuneus, the lingual and fusiform lobules. All these parts were diminished in volume, yellow, hard, and the optic radiations of Gratiolet appeared, under Flechsig's section, extremely atrophied. The right hemisphere was intact.

It will be seen that this is one of the most typical examples of word-blindness yet published. The old lesions affected only the posterior regions of the left hemisphere, in the cortical optic zone. These lesions explain the hemianopsia and hemiachromatopsia noted during life, and to understand the word-blindness, we must admit that the fibres connecting the centres of optical memory of the two hemispheres with the angular gyrus were altered. This man could not read because the continuity between the central terminations of the optic nerve and the angular gyrus, centre of the optical images of letters, was interrupted. Spontaneous writing and writing under dictation were normal, for the angular gyrus being intact the patient could evoke mentally the visual image of the word which he wished to write, just as in writing under dictation, the auditory centre of words could waken in the corresponding angular gyrus the visual image of the word. On the other hand, the day when the angular gyrus became the seat of destructive lesion, ten days before death, the patient became suddenly and totally agraphic. After having been for four years affected with word-blindness with integrity of the faculty of spontaneous writing and writing under dictation, he became agraphic on the day when his angular gyrus was altered. This man then presented the one after the other, the two clinical forms known under the name of word-blindness, both depending on a different localization of the lesion.

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EVOLUTION AND HEREDITY.

The Cartwright Lectures for this year were delivered by Henry Fairfield Osborne, Sc.D., Professor of Biology in Columbia College, who took for his subject "Present Problems in Evolution and Heredity."[1]

In the first lecture on "The Contemporary Evolution of Man," many anomalies are mentioned in connection with their possible or probable bearing upon the history of the human race. The lecture is interesting for those who have some knowledge of biology, especially in connection with the evolution of different species. The author says at the start that for the present purpose we must suppress our sentiment at the outset, and state plainly that the one interpretation of our bodily structure lies in the theory of our descent from some early member of the primate race, which may have given rise also to the living anthropoidea. From the mammalian standpoint, man is a degenerate animal. His senses are inferior in acuteness, his upright position, while giving a superior aspect, entails many disadvantages, his feet are not superior to those of many lower eocene plantigrades, his teeth are mechanically far inferior to those of the domestic cat.

If an unbiassed comparative anatomist should reach this planet from Mars, he could only pass favorable comment upon the perfection of the hand and massive brain. Holding these trumps, man has been, and now is, discarding many formerly useful structures. By virtue of the hand and brain he is nevertheless the best adapted and most cosmopolitan vertebrate.

It is probable that none of our organs are absolutely static, and that the apparent halt in the development of some is merely relative. Upon proper investigation it is very difficult in many cases to determine whether an organ is actually developing or degenerating at the present time.

Variability of an organ or tendency to present individual anomalies, indicates that some change is in progress. It is a fixed principle that a part degenerating by disuse in individuals will also be found degenerating in the race. Degeneration is an extremely slow process. Both in the muscular and skeletal systems we find organs so far on the down-grade that they are mere pensioners of the body. One symptom of decline is variability, in which the organ seems to be demonstrating its own uselessness by occasional absence. This long struggle of the destructive power of degeneration, which is essentially an adaptive factor against the protective power of heredity, is the most striking feature of the law of repetition. A careful study of our developing, degenerating, rudimental and reversional organs amply demonstrates that man is now in a state of evolution hardly less rapid, the author believes, than that which has produced the modern horse from his small five-toed ancestor.

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MEDICAL NOTES.

Regulating Prescription Blanks. — A curious bill has been introduced in the New York Legislature, which proposes to make it compulsory for physicians to use for their prescriptions, blank forms to be supplied by the Board of Health. There seems to be very little danger that this bill will become a law.

Yellow Fever in Rio Janeiro. — During the first two weeks of March there were 775 deaths from yellow fever in Rio Janeiro. The crews of many vessels in port have been attacked with the disease. Cases have also been reported from Buenos Ayres.

Cholera in Asia Minor During the Past Year. — The outbreak of cholera was first noticed near Aleppo on June 9th, and remained until November 9th, during which time 1,659 persons died. In Damascus, between October 15th and the 7th of January, 801 died. In the Hedjaz, 3,176 persons, or over two per cent. of the population, died in six weeks, in the middle of the summer. In Mecca, the mortality was three per cent. Between July and January there were probably about 10,000 deaths from cholera in Asiatic Turkey.

A Plea for Mrs. Osborne. — The *British Medical Journal* presents a plea for Mrs. Osborne, who has recently been sentenced to a term of nine months' imprisonment for stealing Mrs. Hargreaves's jewels. Letters have been written by various medical men showing that she is chronically subject to hystero-epilepsy and of a highly neurotic temperament, to such an extent that she could hardly be considered as morally responsible.

The Cuban Degree of M.D. — The Spanish Minister of Foreign Affairs has proposed to take away the power of the University in Havana to grant the degree of M.D., thus reducing it to the position occupied by other Spanish Provincial Faculties which can only grant a license. A large petition has been sent begging that the Government will reconsider the proposal.

Meetings of Congresses in Europe. — The sixth meeting of the French Congress of Surgery will be held in Paris on April 18th. The German Surgical Society will hold its Twenty-first Congress at Berlin, from June 8th to 11th. The question of "The

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[1] Medical Record, February 20th.

Surgical Significance of the New Firearms" will be discussed, and there will be a debate on anæsthetics. The Congress of Criminal Anthropology will hold its third meeting at Brussels on August 28th. The International Congress of Experimental Psychology will meet in London on August 1st.

Antiseptic Tablets. — Attention has been called in England to the danger of putting up poisonous antiseptics in tablets of the same shape as those commonly used for internal medication. A good suggestion is made that such tablets should not only be colored, but that they should be made of a peculiar shape.

The Koch Institute. — Dr. Pfeiffer has published an account of the first year's work of this Institute. Almost all of the infective diseases have received more or less attention. There are two directors of departments and four assistants beside a number of volunteer workers. In the scientific department there is accommodation for twenty-five, all of whom receive appliances and attendance free of cost. All who work at the Institute are required to sign an agreement that any work which they may do shall be considered the property of the Institute, and that all discoveries shall be communicated to the directors; their notes also are the property of the institution. A weekly conference is held, in which all work of any importance is discussed. The connection between the hospital and the scientific department is a very intimate one.

The Next German War. — At a recent meeting of the Reichstag, with reference to Billroth's lecture upon modern firearms, Major Gaede said that there was no doubt that in the next war, the number of wounded would be greater than heretofore, but the wounds would be of a less serious character. In the war of 1870 the number of wounded was about fifteen per cent. of the total number in the field, of whom a little more than two per cent. died at once. The present calculation of the next war is that twenty per cent. will be wounded, five-sixths of which number will come under surgical care. Each surgeon would have charge of about twelve seriously wounded men and twenty-six with slighter wounds. Professor Virchow said that although twenty per cent. would represent the average loss, the losses in many of the engagements would be much above the general average of the campaign. He recommended that the government should not rely entirely upon its military surgeons, but that it should establish some system by which civilian aid could be used.

BOSTON AND NEW ENGLAND.

Boston Society for Protection from Cruelty to Children. — The annual report of this society shows that during the past year 4,700 children have come under its notice. The work of the society is much impeded by lack of necessary funds.

Deaths in Boston During the Week. — The number of deaths reported during the past week was 223 against 170 the corresponding week of last year, making the death-rate for the week 25.2. The deaths due to consumption were 26, pneumonia 35. The number of persons over sixty years of age, 49. Two deaths were reported as due to influenza.

Sea-shore Home for Infants. — This institution, which for several summers has done very successful work in the care of infants suffering from gastro-intestinal catarrh, in Winthrop, was a year ago not allowed to open, by vote of the Winthrop town meeting. The officers have now purchased thirteen acres of land on Weymouth Fore River, in Quincy, and will soon begin to erect buildings upon it. The new situation is decidedly better than the old one, and can be very easily reached by the Old Colony Railroad. It will probably be in working order before the continued hot weather of next summer.

Typhoid Fever at Bradford Academy. — On account of the appearance of four cases of typhoid fever at the Bradford Academy for girls, near Haverhill, the regular spring vacation has been begun a week earlier than usual.

Massachusetts Legislature. — The anti-cigarette bill was discussed and finally rejected by a large majority. The Judiciary Committee reported a bill regulating the use of embalming fluid in cases where persons were supposed to have come to their death by violence. A Committee on Public Reservations and Lands has listened to petitioners, that certain places in the State be set apart as public parks, and also for the establishment of a Metropolitan Park Commission. The Committee on Public Charitable Institutions has listened to the subject of the regulations of "baby farms." The same committee has reported reference to the next General Court on the report of the Commission on a State Institution for Epileptics. The Committee on Public Health reported a bill providing that every town in the State, of more than 2,000 inhabitants, shall elect a board of health by ballot at the annual town meeting or at a special meeting called for the purpose. The board is to consist of three members, for one, two, and three years respectively. Smaller towns "may" elect such a board, and if they do not, the selectmen shall act as such a board. The same committee reported inexpedient on the order allowing a town to impose the duties of a local board of health on the selectmen, so that it shall be permissive only in smaller towns.

Railroad Accidents in Massachusetts. — According to the reports submitted to the railroad commissioners for the year ending September 30, 1891, the total number of accidents on the West End Street Railway was 204, of which 122 were by horse cars, and 82 by electric cars; 121 passengers were injured in getting off and on to cars, 45 persons on the street, and 38 by collisions with vehicles. The number fatally injured was 14, ten by horse cars and four by electric cars. Two accidents demonstrated that the wooden bar on electric cars, four inches above the rail, may crawl up over and crush a person lying on the track, and cannot be considered a fender. Efforts are being made to provide suitable fenders for these cars. Accidents to passengers averaged one to 985,000 passengers carried, whereas in steam railroads they averaged one to 634,000. The percentage of horse cars in the total mileage of the company is 73 per cent, whereas the percentage of persons injured in getting on and off the horse cars was 58 per cent., of persons on the street, 67 per cent., and by collisions with vehicles, 58 per cent. The total number of passengers killed and injured by the steam railroads of the State was 134; employees injured 408, travellers at grade crossings and at stations 84, and tresspassers 200. Of these accidents 269 were fatal.

NEW YORK.

The Weekly Mortality. — The deaths reported in this city during the week ending March 12th, were 919, a decrease of two as compared with the preceding week, but 47 in excess of the mortality of the average of the corresponding week in the past five years. This represents an annual death-rate of 27.94 per 1,000 of the estimated population, against 26.51 for the average of the corresponding week for the past five years. Pneumonia caused 151 deaths, against 185 in the preceding week, and 120 for the average of the corresponding week of the past five years. Two hundred and thirty-three cases of scarlet fever, with 34 deaths, were reported against 224 cases and 37 deaths in the preceding week. There were 331 cases of measles, with 18 deaths, against 366 cases and 14 deaths in the preceding week. There were 107 cases of diphtheria, with 31 deaths, against 114 cases and 35 deaths in the preceding week. There were no deaths from small-pox, and only one new case reported, while in the previous week there was one death and nine new cases. For the first time during the present year there was no death from typhoid fever. During this week there were reported 941 births, against 1,043 in the preceding week.

Typhus Fever.— There were eight deaths against two in the preceding week; but only 12 new cases were reported, while in the week previous the number was 30. Since March 12th only two or three new cases of typhus have occurred, and these have been exclusively among the attendants at the fever hospital on North Brother Island: so that it may be said that the *Massilia* outbreak is virtually at an end. On March 13th a newspaper reporter who contracted the disease while visiting the infected houses where the *Massilia* passengers were lodged, died of typhus; and on March 18th a policeman, who was on duty at the Reception Hospital, also died of it.

The Pasteur Institute. — Since the Pasteur Institute was opened, something over two years ago, Dr. Gibier has had about 1,500 patients, of whom about 300 have been inoculated by him. Although the building occupied, a small house in West 10th Street, is very poorly adapted for its purpose, the expenses of conducting the institution have been very considerable, and as many of the patients treated were entirely unable to pay for the services rendered, it has been thought of late that the undertaking would have to be abandoned. It is now stated, however, that a large firm of contractors have expressed their willingness to erect a commodious building for this purpose near Central Park, and it is thought that with the improved facilities thus afforded the Institute may in time become self-supporting.

New York Cancer Hospital. — The last annual report of the New York Cancer Hospital covers the fourth year of active work since the opening of the hospital. During the year 453 new patients were admitted, and there were performed 307 operations, one-third of which were capital. The two noteworthy incidents of the year were the completion of the Astor Pavilion for male patients and the opening of the Chapel of St. Elizabeth of Hungary, erected in memory of Mrs. Elizabeth H. Cullum, from the property left by her to the hospital. The buildings of the hospital are therefore now all completed. During the year $25,000 each was received from the estates of John T. Farish, Daniel B. Fayerweather and Mrs. Robert L. Stuart, and $5,000 each from Mrs. Wm. Astor and Miss Mary Edson, for the endowment of beds.

PHILADELPHIA.

Chief to Bureau of Medicine and Surgery in the Navy.— Dr. A. L. Gihon, Medical Director United States Navy, stands next in line for promotion to the position of Chief of Bureau of Medicine and Surgery in the Navy Department at Washington. The term of the present incumbent expires at the end of this month, and it appears very probable that Dr. Gihon will receive the appointment, which will be a compliment to this city since Dr. Gihon is a native of Philadelphia, and for a period before the war held a professorship in a Medical College here. After entering the Navy as Assistant Surgeon, he did duty on board receiving-ship "Union," at the Philadelphia Navy Yard in 1850, and since then was continuously in active service until 1879, when he was commissioned Medical Director. Since 1888 he has been in charge of the Naval Hospital at Brooklyn, N. Y.

A Japanese Leper, in the last stages of the disease, has been admitted into the Philadelphia Hospital, where he is said to be in a dying condition. Much excitement has followed the discovery that he has been living for four or five years in this city, and that lately he has been working at a hotel in the capacity of assistant cook, making bread and pastry, dressing poultry and otherwise preparing food with hands disfigured and mutilated by the disease and in the ulcerating stage. The proprietor of the hotel was arrested and fined for not reporting a case of contagious disease, and will be further proceeded against for maintaining a nuisance. City councils have just authorized the erection of an isolated building of wood for the accommodation of leper patients, of which there are two at present under treatment.

The Trolley System. — The Philadelphia County Medical Society held a special meeting on the 12th inst., to protest against the proposed introduction of the trolley system for the propulsion of street cars in this city. In spite of the opposition, which has been aroused against the overhead wires carrying heavy currents in our streets, the railway committee reported favorably upon the ordinance by an overwhelming majority, and councils will probably pass the bill which the Mayor may veto.

An Endowment for a New Museum. — The University of Pennsylvania has recently received a gift of nearly three-quarters of a million of dollars for the erection of a biological and anatomical museum to cost nearly $200,000, and a yearly endowment of $30,000 for its maintenance. The donor desired that his name should not be published until all the designs had been completed and the "Wistar Institute of Anatomy" founded; but it has transpired that the generous donor is General Isaac J. Wistar, of Philadelphia, whose uncle, Dr. Casper Wistar, was at one time professor in the medical department of the University, for whom the proposed building is intended as a memorial.

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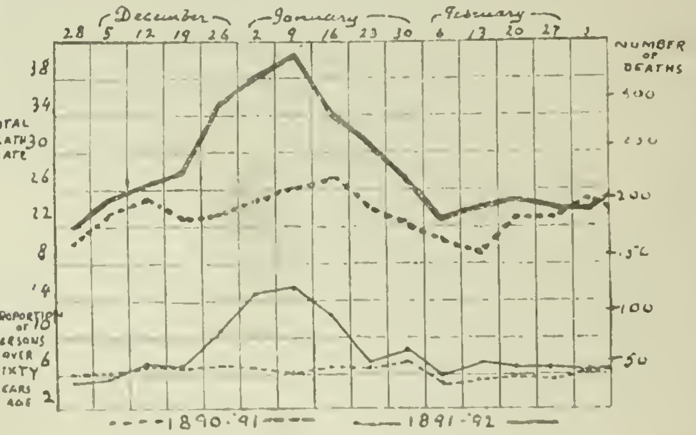
Miscellany.

THE RECENT EPIDEMIC OF INFLUENZA IN BOSTON.

The following chart shows the total death-rate, from all causes in Boston, by weeks, from the week ending November 28, 1891 to that ending March 5, 1892. For comparison, the death-rate of the previous year is also shown, in dotted lines. The lower lines show the proportion to the total death-rate of those persons who died over sixty years of age. The death-rate, on the left, is calculated in the usual way, on the basis of the annual death-rate per thousand inhabitants. The number of deaths is shown on the right. During the week ending January 9, 1892, the total number of deaths was 339, as against an average of about two hundred; while during the same week the number of persons of sixty years of age who died was 116, whereas the average is a little over forty.



The Boston City Board of Health have recently issued a set of tables classifying the deaths reported as due wholly or in part to influenza from December 12, 1891 to February 29, 1892. From these tables the following figures are taken:

Deaths Due to Influenza, Complicated and Uncomplicated.

	Males.	Females.
Influenza, non-complicated	31	41
Complicated with Phthisis Pulmonalis	2	6
" " Bronchitis	8	19
" " Heart Disease	4	10
" " Meningitis	1	2
" " Pneumonia	25	33
" " Old Age	3	10
" " Other Diseases	3	7
Total	77	128

Deaths Arranged by Age.

	Males.	Females.
Under 5 years	9	7
From 5 to 10 years	0	0
" 10 " 20 "	2	1
" 20 " 30 "	5	7
" 30 " 40 "	4	13
" 40 " 50 "	6	15
" 50 " 60 "	9	12
" 60 " 70 "	16	19
" 70 " 80 "	16	32
" 80 " 90 "	9	16
" 90 " 100 "	1	6

Deaths Arranged by Nativity and Parentage.

	Nativity.	Parentage.
United States	97	60
Ireland	77	88
England	8	9
Scotland	0	1
Germany	4	4
British Provinces	15	9
Italy	1	2
Other Countries and Unknown	3	32

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A SURGEON'S IMPRESSIONS OF AMERICA.

Dr. Rutherford Morison, of Newcastle-on-Tyne, describes a visit of eighteen days in America, during which time he saw seven hospitals and met several American surgeons. He describes his visit somewhat at length in the *Edinburgh Medical Journal.* As a preliminary, he says that the American surgeon is a good fellow and it will be a Britisher's own fault if he cannot get along with him.

He seemed to be surprised that ether was always given and that chloroform is mostly regarded as unsafe. In connection with the Johns Hopkins Hospital, the technique of the common surgical proceedings is described. American surgeons claim that their hospitals and nurses are better than the English. The first claim he does not deny, he also acknowledges that the lectures at the training schools for nurses is an advantage which the English nurse does not have. Concerning the hospitals in Boston he says, everything including hospital staff, nurses and all else is decidedly English.

He expresses great surprise at the choice of the point of election, rather than for a lower operation in amputations of the leg. In conclusion, he gives his general impressions of American surgeons and instruments, as follows:

American much more resembles German than Enlish surgery. Germans have an indescribable way of taking possession of an anæsthetized patient, giving the impression that he is entirely their own, and that they mean to do just what they like with him. German instruments are much larger, forceps like tongs, scissors like sheep shears, retractors like garden rakes.

The German surgeon is seldom in doubt, and has an excellent embryological, bacteriological and pathological explanation of all his cases and results; if there is a mistake, something is to blame, not the surgeon. Then there are other German specialties, such as, metal-handled knives, the invariable introduction of needles by a holder, the wearing of special operating apparel, and the selection of only such operations as can be performed with deliberation and in open daylight; all have more or less influenced American surgery. Results are after all the test, and on these a judgment must be formed; and from this standpoint, his belief is that if English surgeons do not wish to be overtaken, they must put their best foot foremost.

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IN MEMORIAM. DR. JAMES AYER.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

In taking official notice of the death of Dr. James Ayer, the Society desires to record its high estimate of one of its oldest members.

By his constant attendance at the meetings of the Society, and by the high standard of his professonal and his private character, he earned the respect and esteem of the Society, as well as of the community.

The Society respectfully tenders to the family of Dr. Ayer its sympathy with them in their bereavement.

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THERAPEUTIC NOTES.

Lysol.[1] — Starting with Fränkel's view that the antiseptic properties of creolin depend upon some higher homologues of phenol, it was believed that the cresols in soluble form would be more active as disinfectants than in emulsion. The result of this study was the production of lysol, which contains fifty per cent. of cresols, is miscible with water, and forms clear solutions with alcohol, petroleum or benzene, chloroform, carbon bisulphide, and glycerine. Gerlach and others have found it active and prompt in arresting the development of microörganisms. Fürbringer believes that after cleansing the nails with a one-half to one per cent. solution, the hands being immersed two or three minutes, using a brush, other disinfection is unnecessary. This process does not attack the hands. For sterilization of instruments, one-fourth of one per cent. solution is sufficient. Cramer and Wehmer believe that it is five times stronger than carbolic acid, and one-eighth as poisonous; considering the weak solutions necessary, it is relatively cheap.

Extract of a Sheep's Thyroid for Myxœdema. — Murray[2] reports a case treated by injections of an extract from the thyroid of a sheep in which excellent results were obtained, and a second successful case is reported by Wallace Beatty, M.D.[3] The lobe of the thyroid gland is taken from a newly-killed sheep. It is cut up into small pieces and placed in a test-tube, with 1 cubic centimetre of pure glycerine and 1 c.cm. of .05 solution of carbolic acid. The tube is plugged with wool and allowed to stand for twenty-four hours. After this the mixture is pressed through muslin, and about fifty minims of a turbid pink liquid are obtained, which may be injected by means of a hypodermic syringe in two doses during the course of a week. All the steps of the preparation of this mixture are carried out with due precautions to ensure that the liquid is thoroughly sterilized as well as all the instruments employed.

Correspondence.

A POSSIBLE SOURCE OF ERROR IN USING THE FEVER THERMOMETER.

PEPPERELL, MASS., March 21, 1892.

MR. EDITOR: — About two months ago, after having my fever thermometer, a Hicks, seven minutes in the axilla of a man sitting in his chair, the bulb well up in the axilla, the stem down, I found the temperature indicated, 110.2° F. A second trial gave 109.4° F. Not believing the temperature to be so high, and examining the index carefully, I found that it had left the point where the mercury separates in the stem, and would run from the bulb or towards it just as it was placed higher or lower than the stem. Since that time I have had four similar experiences, and now if the temperature indicated is 104° F., or more, I do not feel sure that it is correct unless I find the mercury in the stem touching the point where it usually separates. How general this fault is with thermometers whose indexes are formed of a long column of mercury, or otherwise, I cannot say.

S. W. FLETCHER, M.D.

[It is safer to keep the stem up. — ED.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 12, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	919	357	15.73	22.44	3.74	.99	6.05
Chicago . . .	1,099,850	—	—	—	—	—	—	—
Philadelphia .	1,046,964	519	185	15.01	12.35	3.04	1.14	7.79
Brooklyn . .	806,343	384	134	13.26	21.32	4.42	1.04	5.72
St. Louis . . .	451,770	160	52	10.71	9.45	1.85	2.52	1.89
Boston . . .	448,477	216	68	12.42	16.02	3.22	1.38	3.68
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	113	39	14.24	14.33	—	.89	8.90
Cleveland . .	262,000	97	44	16.48	15.45	1.03	3.09	6.18
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	—	—	—	—	—	—	—
Milwaukee . .	240,000	77	32	15.60	16.90	5.20	—	7.80
Washington .	230,392	118	32	7.65	24.65	1.70	1.70	—
Nashville . .	76,168	27	10	7.40	25.90	—	—	—
Charleston . .	65,165	39	13	—	—	—	—	—
Portland . . .	36,425	16	5	6.25	25.00	—	6.25	—
Worcester . .	84,655	22	5	9.10	4.55	4.55	—	4.55
Lowell . . .	77,696	44	16	15.89	18.16	—	2.27	2.27
Fall River . .	74,398	38	14	5.26	26.30	—	—	2.63
Cambridge . .	70,028	27	11	11.11	18.50	—	—	11.11
Lynn	55,727	18	4	22.22	16.66	—	—	11.11
Lawrence . .	44,654	—	—	—	—	—	—	—
Springfield . .	44,179	21	10	9.52	33.33	4.76	—	—
New Bedford .	40,733	21	7	4.76	4.76	—	4.76	—
Salem	30,801	10	5	—	10.00	—	—	—
Chelsea . . .	27,909	7	4	14.28	14.28	—	—	14.28
Haverhill . .	27,412	9	2	—	—	—	—	—
Taunton . . .	25,445	9	3	11.11	—	—	—	11.11
Gloucester . .	24,651	8	1	—	—	—	—	—
Newton . . .	24,379	4	1	—	50.00	—	—	—
Malden . . .	23,031	6	0	—	16.66	—	—	—
Fitchburg . .	22,037	5	1	—	—	—	—	—
Waltham . .	18,707	7	1	14.28	—	14.28	—	—
Pittsfield . .	17,281	3	3	66.66	33.33	33.33	—	33.23
Quincy . . .	16,723	1	1	—	—	—	—	—
Northampton .	14,990	5	0	20.00	20.00	—	—	20.00
Newburyport .	13,947	8	2	12.50	12.50	12.50	—	—
Medford . . .	11,079	2	1	—	—	—	—	—
Hyde Park . .	10,193	3	0	—	—	—	—	—
Peabody . . .	10,158	2	0	—	—	—	—	—

Deaths reported 2,965: under five years of age 1,062; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 401, acute lung diseases 530, consumption 346, diphtheria and croup 163, scarlet fever 89, diarrhœal diseases 35, typhoid fever 25, measles 24, whooping-cough 22, erysipelas 18, cerebro-spinal meningitis 12, typhus fever 8, malarial fever 3, puerperal fever 2.

From typhoid fever Philadelphia 7, Boston, Cincinnati and Lowell 3 each, St. Louis, Cleveland and Washington 2 each,

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[1] Medical Press, No. 5, 1892.
[2] British Medical Journal, October 10, 1891.
[3] *Ibid*, March 12, 1892.

Brooklyn, Milwaukee and Springfield 1 each. From measles New York 18, Brooklyn 3, Philadelphia, St. Louis and Boston 1 each. From whooping-cough New York 8, Philadelphia 4, Boston, Cincinnati and Washington 2 each, Brooklyn, Cleveland, Lowell and Fall River 1 each. From erysipelas New York 8, Philadelphia and Boston 2 each, Brooklyn, St. Louis, Cleveland, Washington, Nashville and Lynn 1 each. From cerebrospinal meningitis New York and St. Louis 3 each, Philadelphia, Brooklyn, Cleveland, Nashville, Lowell and Lynn 1 each. From typhus fever New York 8. From malarial fever Philadelphia, Brooklyn and Cleveland 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending March 5th, the death-rate was 20.5. Deaths reported 4,013: acute diseases of the respiratory organs (London) 379, whooping-cough 158, measles 105, diarrhœa 45, diphtheria 41, scarlet fever 28, fever 13.

The death-rates ranged from 15.3 in Portsmouth to 32.5 in Preston; Birmingham 20.7, Bradford 19.0, Cardiff 20.3, Huddersfield 26.4, Hull 20.9, Leeds 18.9, Liecester 21.2, Liverpool 27.8, London 18.9, Manchester 26.2, Nottingham 16.7, Sheffield 22.9, Sunderland 19.2, Swansea 28.8, West Ham 19.5, Wolverhampton 25.6.

METEOROLOGICAL RECORD,

For the week ending March 12, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 6	29.65	36	43	29	51	57	54	W.	N.W.	19	16	C.	C.	
M.. 7	29.81	41	51	31	63	53	58	W.	W.	12	7	C.	C.	
T.. 8	29.59	37	40	34	77	100	88	N.W.	N.E.	2	20	C.	R.	.55
W. 9	29.38	42	50	34	96	70	83	N.W.	W.	8	11	O.	O.	.06
T ..10	29.99	46	56	35	68	78	73	W.	S.E.	6	12	F.	R.	.06
F ..11	29.44	30	34	25	61	57	59	S.W.	W.	22	38	O.	O.	.29
S..12	29.70	28	36	20	44	72	58	W.	W.	20	17	F.	C.	T.
☞	29.65	37	44	30	66	70	68			13	17			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 12, 1892, TO MARCH 18, 1892.

Lieut.-Colonel Francis L. Town, surgeon, U. S. A., while on duty at Headquarters, Department of California, in charge of the office of the medical director, will, in addition to said duty, examine recruits at the rendezvous in San Francisco, California.

First-Lieut. William N. Suter, assistant surgeon, U. S. A., granted leave of absence for four months, from March 22, 1892.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 19, 1892.

E. H. Marsteller, passed assistant surgeon, ordered to duty at the Naval Academy.

W. F. Arnold, passed assistant surgeon, from the "Vermont" and to the "Richmond."

C. H. T. Lowndes, assistant surgeon, from the "Richmond" and to the "Vermont."

D. Dickinson, surgeon, from the Navy Yard, Mare Island, and two months' leave.

A. M. Moore, surgeon, from Naval Hospital, Mare Island, and to Navy Yard, Mare Island.

E. Norfleet, surgeon, from the U. S. S. "Monocacy" and granted three months' sick leave.

G. T. Smith, assistant surgeon, from the U. S. S. "Mohican" and to the C. S. S. "Hassler."

L. L. Young, assistant surgeon, from the "Independence" and to the "Mohican."

W. K. Scofield, medical director, granted one year's leave of absence with permission to leave the U. S.

SECTIONS OF THE AMERICAN MEDICAL ASSOCIATION.

The Committee appointed at the last meeting of the American Medical Association to consider the best means for promoting the prosperity of the sections of the Association will hold an adjourned meeting in the Hotel Cadillæ, Detroit, Mich., June 6th, at 3 P. M.

Members of the Committee are requested to notify the Chairman of their intention to be present at this meeting.

The Committee would esteem it a favor if each member of the Association would communicate in writing his or her views concerning the best measures for promoting the development of the sections Such communications may be sent to the Chairman of the Committee.

John S. Marshall, M.D., *Chairman*,
9 Jackson Street, Chicago.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, March 28, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. F. B. Harrington, "A Case of Disseminated Fat Necrosis."

Dr. J. T. Bowen, "The Present Position of Electrolysis in the Treatment of Cutaneous Affections."

G. G. Sears, M.D., *Secretary.*

Sixth Annual State Sanitary Convention of Pennsylvania, Preliminary Announcement. — It is the intention of the State Board of Health of Pennsylvania to hold the Sixth Annual State Sanitary Convention in the city of Erie. The Board, as well as the local committee in charge, extend a hearty invitation to all persons in any way interested in sanitary matters to visit Erie upon this occasion. The convention will be held March 29, 30, 31, 1892. Arrangements have been made for a programme which will possess not only interest, but permanent value.

A full programme will be issued within a week of the convention meeting.

All boards of health and municipal councils are urged to send delegates.

Geo. Groff, M.D.,
Pemberton Dudley, M.D.,
Benj. Lee, M.D., *Secretary*, } *Committee of Arrangements.*

RECENT DEATHS.

D. Hayes Agnew, M.D., died in Philadelphia, March 22d, aged seventy-three years. Dr. Agnew was born in Lancaster County, Pa , in 1818, and received the degree of M.D. from the University of Pennsylvania in 1838. In 1868 he became demonstrator of anatomy and assistant lecturer on clinical surgery at the University, in 1870, professor of operative surgery, and the following year, professor of the principles and practise of surgery. He was also professor of clinical surgery at the University Hospital, and surgeon in the Wills Ophthalmic, the Pennsylvania and the Orthopedic Hospitals. During the war he was consulting surgeon in the great Mower Army Hospital at Chestnut Hill, a position which entailed the supervision of an enormous amount of surgery. When President Garfield was shot, Dr. Agnew was made consulting surgeon, and later was the chief medical adviser of the president, until his death. Dr. Agnew was the author of many papers and works on medical subjects, the principal one being a Treatise on Operative Surgery.

George Montgomery, M.D., M.M.S.S., of Newburyport, died in New York, March 17th, aged fifty-seven. He graduated at Bowdoin in 1854, and practised medicine in New Hampshire until 1873, when he removed to Newburyport. During the war he was surgeon of a New Hampshire regiment.

Joseph Draper, M D., M.M.S S. (non-res.), died in Brattleboro, Vt., March 17th, aged fifty-eight. He graduated from Jefferson Medical College in 1858, and in 1872 became superintendent of the Vermont Asylum for the Insane, which position he has since held.

Albert Thomas Stahl, M.D. (Bowd. 1875), M.M.S.S., died in Boston, March 16, 1892, aged forty-five years.

Henry Hamilton Sproat, M.D. (Harv. 1865), M.M.S.S., died at Freetown, Mass., March 15th, aged fifty years.

James Ross, M.D., LL.D., F.R.C.P., Professor of Medicine, Victoria University, Manchester, England; the author of several works on Diseases of the Nervous System, died February 25th, aged fifty-five.

H. Hubert de Change, M.D., Inspector-General of the Medical Department of the Belgian Army, inventor of different surgical instruments, died early in March.

Original Articles.

REFLEXES IN HIP-DISEASE.[1]

BY E. G. BRACKETT, M.D.

In the examination of a hip-joint which is suspected of being the seat of disease, many of the signs upon which we must rely are what might be regarded as indirect, or caused by reflected action; and because the joint is so deeply placed, and not accessible to direct examination, these signs become the main source of evidence, not only as to the existence of disease, but also in a great measure to its character, activity, etc.; as, for instance, the most valuable symptom, that of muscular spasm, which is purely involuntary in character, and is one of the most unfailing of signs in all stages. The mechanism of this is not satisfactorily explained, at least on good physiological grounds; but it must occur in some way through the intervention of the nervous system, and may be from either a condition of unusual irritability of the nerve-centres, or simply the result of over-stimulation. We have rather fewer reasons for considering it the latter, and yet the former is not proven. One condition, which must bear a close relationship in the method of its occurrence to this one of spasm, but which seems to have been in a great measure neglected, is that of reflex activity.

We may consider a physiological relation between the joint and the muscles governing it; and therefore the constant irritation of the diseased part results by cumulative action in a condition of hyper-excitability of nerve elements. It has been found by Iodowsky, that prolonged peripheral irritation results in an increased functional activity of the nerve cells, and the continued irritation from the diseased joint may thus find expression in unusual response to stimulus, as, for instance, in muscular spasm. Theoretically we may expect under certain conditions to find the reflexes rather more active than usual, such being those in which we have a sensitive condition of the joint, and which finds expression in the spasm of the muscles which guard the affected joint. Such alone would perhaps not be of special value, but of corroborative evidence — one of several symptoms which point to a diseased articulation. If, however, we could find that this excess of irritability was definitely localized, it would assume greater importance. For instance, if in a disease of one hip we may look to find them exaggerated on the affected side, it becomes a sign of value, and also for distinction from those cases of low spinal caries, which in their early stages closely simulate hip-joint disease.

In these observations from which the results are obtained, the tendon reflex was taken in the usual way, by tapping the patella tendon with the leg flexed. In those cases in which the knee could not be flexed, the attempt was made to elicit it by Gower's method of downward pressure on the patella by the forefinger, and tapping while this pressure is being made. Its response to this method is a sign of excess, but whenever it was not obtained, and the other could not be employed, the case was not used, as such failure could hardly be considered as evidence of its condition.

The cases are divided into those which were in a quiet state, as shown by the absence of all subjective signs, and those in an irritable condition, as shown by the presence of pain, sensitiveness, etc., and each of those in turn according to whether there was present muscular spasm.

Hip-Disease (47 Cases).

Quiet Cases, without spasm,	16	Reflexes equal 15, unequal 1. Normal 11, increased 5.
" with "	19	Reflexes equal 3, unequal 16. Normal 6, increased 13.
Irritable Cases, with spasm,	12	Reflexes equal 3, unequal 9. Normal 2, increased 10.

Spinal Caries (21 Cases).

Quiet Cases, without spasm,	6	Reflexes equal 6, unequal 0. Normal 5, increased 1.
" with "	14	Reflexes equal 14, unequal 0. Normal 12, increased 2.
Irritable Cases, with spasm,	1	Reflexes equal 1, unequal 0. Normal 1, increased 0.

The table in this series of cases shows an almost constant relation between the spasm and the increased condition of the reflexes, and granting a value to one we must give the same to the other. The indications are that it is an evidence of an irritable condition of the joint, rather than of a sensitive condition, and would apparently be of value in determining the amount of freedom to be allowed to the diseased joint.

It will be noticed that in the "irritable" class, in which we should expect the amount of peripheral irritation to be much greater, the proportion of unequal reflexes is much less. This seems to be in corroboration of the theory, as we may suppose the irritation, being much greater, to have passed out of the reflex arc — which action is recognized to occur — and to have become more general, and we see its evidence in the greater activity of the knee-jerk on the other side.

This condition would be of no value as a diagnostic sign unless localized, that is, confined to its reflex arc, and not caused by the presence of disease. To prove this are given the results in cases of spinal caries, which are placed in the same table.

The inference which we have to draw is that the condition of the reflexes must depend on the same general causes as the muscular spasm; that in those cases which may be considered as quiescent and without muscular spasm, the reflexes are not altered from normal. When, however, the joint is in an irritable state, we may expect to find them increased on the side of the disease. The presence of subjective symptoms does not apparently affect the phenomenon. The value of this is two-fold. It becomes an indication of the irritability of the joint, in the absence of subjective symptoms, in the same way as does the involuntary muscular spasm, and also of diagnostic value in the early stages in the absence of other indications. In this it can be used as one of the evidences in distinguishing between early hip and low lumbar caries, for a marked difference is shown in the cases of spinal caries in this matter of reflexes, as these show an almost constant uniformity, and are not only equal, but much less likely to be exaggerated even with the presence of other disease.

To obtain satisfactory opinions of the condition of the reflexes in children is frequently difficult, for the results do not always seem to be uniform, but the average of many trials will be found to be in the rule accurate. It is doubtful, however, if this symptom is of any value in cases of old disease, with very marked atrophy, for in these the reflexes are much more active than normal. The condition cannot be regarded as an infallible sign, but as one of the several of value, which are to be used in determining the existence of disease, and the condition of the joint.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

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THE OPERATIVE TREATMENT OF SPASTIC PARALYSIS.[1]

BY CHARLES L. SCUDDER, M.D., BOSTON,
Out-patient Surgeon at the Massachusetts General Hospital, Assistant in Clinical Surgery in Harvard University.

Little's disease, spastic paralysis, congenital muscular rigidity — these terms, from an etiological point of view, probably are synonymous. It is an affection of childhood, noticed at birth or soon after. It is characterized by a rigidity of certain groups of muscles, without wasting or loss of electrical reaction to faradism; by a peculiarly awkward gait, due to a loss of co-ordination in the muscles of the lower limbs; by an increase in the superficial and deep reflexes and by the presence of more or less mental impairment, which may be absent. Usually the adductors of the thighs, or the flexors of the arms or legs are involved, giving rise to a most distressing deformity.

Pathologically, as far as is at present known, the causative lesion is located in the motor tract of the central nervous system.

Spastic paralysis has been mistaken for certain conditions found in hip-disease, infantile paralysis, and the paraplegia of Pott's disease. But if care be exercised, the differentiation is easy.

Relief is sought for the progressive deformity which is the result of the rigidly contracted and shortened muscles.

Treatment by drugs and electricity has failed.

Surgically, an attempt has been made to improve the muscular conditions, by attacking the cerebral lesion, but without success. Bullard and Bradford have reported such an attempt. As Bradford has suggested, when the surgery of the brain has become more advanced it may be possible in a few of these cases, to attack the central nerve lesion successfully.

At times progression is absolutely impossible, and at best it is much impeded. The deformity depends, of course, upon the groups of muscles concerned: if the adductors be involved, the child will stand with the thighs flexed and adducted. If the hamstrings be implicated, the feet are flexed, and, in walking, the child balances on the toes, dragging the feet close to the floor with a clinging gait and rubbing the knees together.

To relieve the deformity, apparatus has been used, but no matter how well fitted and carefully managed, it accomplishes nothing permanent, the deformity recurs immediately upon its removal. Forcible correction, with or without ether, and immobilization in plaster are of no service.

Rupprecht,[2] apparently recognizing this deficiency in mechanical measures, calls attention to the good results obtained by tenotomy of the tendon of the gastrocnemius.

Bradford [3] has added still further to the advantages to be derived from this procedure, by demonstrating the utility of an open and thorough division of all resisting structures, whether presenting at the groin or ham. In spastically contracted limbs, uniform success has attended thorough tenotomy and myotomy of resisting tendons and muscles complicated with immediate fixation. This success is, at present, an unexplained clinical fact. After tenotomy the muscles increase in size and strength.[4]

To the few reported cases of successful operation for spastic contraction of the lower limbs, let me add one more.

This case is made unique by the presence of a hydrocephalus, the existence of spina bifida, a rotary, lateral spinal curvature, and because mental impairment is absent.

The patient is twelve years old, a bright and intelligent girl, with a good family history. At birth, a soft spot, gradually increasing in size, was noticed in the middle of the back, becoming firmer, until, at present, in the lower lumbar region in the median line is a tumor the size of a flattened orange. The skin over this tumor is not thin, and fluctuation is distinct. There is no variation in the size of the tumor either upon pressure, manipulation, or forcible expiration. The base is broad.

While the patient was a baby this tumor was aspirated, and after "weeping" a clear fluid for some time, the opening spontaneously closed. When two weeks old the child's head was noticed to be increasing rapidly in size. In the second year of life the anterior fontanelle was closed. At present the head is large. The circumference is twenty inches plus. There have been no convulsions at any time. The spine presents a marked dorso-lumbar, lateral rotary curvature, which has developed gradually, and, at present, is rather poorly held by a steel waist-band, with crutches.

When two and a half years old the child walked. When eight years old the heel cords "began to grow tight," causing a talipes equinus. A little later the knees began to strike in walking, and permanent adduction occurred; then the knees began to flex, and remained permanently so. The gait gradually changed, and now the child walks on the toes with the feet inverted, the knees forcibly adducted, the thighs flexed on the trunk, a moderate lordosis in the lumbar region, and in the dorsal region, a marked rotary lateral curvature to the right.

Two years ago tenotomy was done on both ankles, with temporary benefit. At present the condition of the spastically contracted muscles is as follows:

The foot on the right side can be flexed beyond a right angle, that on the left to a right angle. Extension of the right ankle is possible to a little beyond ninety degrees. In the left ankle extension is practically normal. Abduction of the thigh is possible to a greater extent on the right than on the left. The right knee is flexed to about ten degrees, and the left to about twelve degrees. The muscular power of both thighs and legs is good. Ankle-clonus is present, and the knee-jerk is exaggerated on the right side. The ankle-clonus is absent from the left leg, and the knee-jerk is exaggerated very slightly. Both arms, and all other parts of the body, are in normal condition. The head has ceased to enlarge, so far as can be determined by external measurement.

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[1] Read at the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

[2] Volkmann's Klin. Vorträge, 172.

[3] Transactions, American Orthopedic Association, vol. iii, p. 7.

[4] Adams: Lancet, September 27, 1890.

The child, etherized, was placed prone. A shallow V-shaped incision across the ham exposed the popliteal fascia, which, with the hamstring tendons, was divided; the semi-membranosus, biceps and semi-tendinosus were severed partly in the tendinous, and partly in the muscular part. The tendo Achillis and the plantar fascia were divided on the right side, and the tendon of the adductor longus on the left. Both lower extremities were brought into normal position and immobilized in plaster-of-Paris from the tips of the toes to the groin. After a week the patient was allowed to be up and about with crutches, and retentive apparatus, consisting of an upright on either side of the leg, fastened to the shoe below and thigh-band above, a leather pad over the knee preventing flexion.

After about seven months she was allowed, a portion of the time, to go without the splints, and now, ten months after the operation, wears no apparatus. There has been no recontraction. She is learning to use her legs well, stands straighter, and walks with slight assistance without the use of crutches.

Mentally the child is brighter than children of her own age, and is enjoying the greater freedom of movement which she now possesses.

These cases of spastic contraction, being at present, incurable, are entitled to all the benefit that can be afforded by so safe an operation as above described. The spina-bifida having remained for several years quiet has demanded no interference, and considering the general good health of the child, operation of any sort is not justifiable. The spina-bifida is protected by a hard rubber pad.

In the *Boston Medical and Surgical Journal* for January 17, 1889, p. 61, Cabot has called attention to the necessity of dividing the tendons, where it is possible, near enough to the muscular belly to maintain a connection between the severed tendon and its muscle, thus preventing a matting together of the tendons in their sheaths, as happens when the division is lower. The same rule applies to the tendons of the ham. The division should be an open one, and through the tendons within the limits of muscular insertion.

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SPASTIC PARAPLEGIA.[1]

With Remarks on a Case Reported by Dr. C. L. Scudder.[2]

BY WILLIAM N. BULLARD, M.D., BOSTON.

The case previously reported by Dr. Scudder, I saw in consultation with him. Cases of spastic paraplegia in combination with spina bifida are very unusual. The origin of this form of paralysis in such a case is not at first sight plain, and it may be worth while to consider this subject shortly.

Before entering, however, into discussion of this special case, I should like to say a few words in regard to spastic paraplegia in general. By the term spastic paraplegia we designate a condition of the lower extremities in which their movements are more or less impeded by an increased tonicity or rigidity of the muscles, causing a greater or less fixation of the limbs, and a resistance thereof to both active and passive motion. This condition is in such cases always connected with some paresis of the extremities, and it may precede or follow such paresis, but in the large majority of cases the rigidity and paresis coexist. When the rigidity of the muscles continues unrelieved for a considerable time, permanent contractures are often formed, and these are well known to every surgeon. The contractures due to spastic paraplegia must be carefully distinguished from those due to other causes. They are totally different from the contractures found in old cases of anterior poliomyelitis, the so-called paralytic contractures, and are not to be confused with the conditions existing in congenital varus and club-foot, which are usually due to wholly different causes.

Spastic paraplegia, when permanent, is always due to an affection of the lateral columns of the spinal cord. This affection may be primary or secondary.

Organic spastic paraplegiæ are of various forms. They may be of spinal or cerebral origin; they may be primary or secondary.

Spinal spastic paraplegia occurs in various affections of the spinal cord, but the contractures produced are rarely so great as to require or suggest operation.

In children — and it is of them only that I shall speak here — only one form of spinal spastic paraplegia is of ordinary occurrence. This is that occurring in transverse myelitis, the "pressure" myelitis of caries of the spine. It may be caused by any form of pressure on the spinal cord.

The form of spastic paraplegia due to transverse myelitis is readily differentiated from that due to cerebral affections, both by the presence of affection of sensation in the former cases, and by the greater predominance of the paralysis over the spasticity.

CEREBRAL SPASTIC PARAPLEGIA.

This form is very frequent, and nearly all spastic cases suitable for operation are of this class. This is both because the contractures in this form of paraplegia are more severe and more permanent and less amenable to treatment than those due to caries of the spine, and also because of the marked tendency to spontaneous cure in the latter cases.

(The term spastic paraplegia is sometimes used synonymously with cerebral spastic paraplegia. When used, as it sometimes is, improperly to designate a disease rather than a symptom, it assumes this signification. This involves, among other things, the error of assuming that all cases of cerebral spastic paraplegia are due to the same pathological condition.)

In children, in my opinion, practically all cases of spastic paraplegia not due to transverse myelitis (pressure paralysis) are of cerebral origin. (Primary lateral sclerosis is almost unknown in children, and hæmorrhage into the spinal cord, producing this affection, seems to be very rare. The vast majority of cases of spastic paraplegia, not due to caries of the spine, present the characteristics of a cerebral and not of the spinal form.)

I shall not enter here into the causation of cerebral spastic paraplegia in children. It may be due pathologically to any destruction or lasting inhibition of the functions of certain portions of the cortical area, or of the fibres which pass from them through the internal capsule and pyramidal tract into the lateral columns in any part of their course. It is commonly the result of intra-cranial hæmorrhage, usually meningeal, or of atrophy of the brain from whatever cause.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

[2] See page 306 of the Journal.

To return to the special case under consideration. To what in this case is the spastic condition due? Is it an exception to the general rule, and may a spina bifida so act upon the lateral columns by pressure or otherwise as to produce a spastic paraplegia, or is it due to some other cause?

In regard to the possibility that a spina bifida should cause a permanent spastic contracture in the lower extremities, I should not wish to express an absolute opinion, but in any case it is very rare. It is true that paralyses of the lower extremities are not uncommon in spina bifida, occurring according to the statistics of the Committee of the Clinical Society of London in about one-fifth of the cases — 53 out of 244 — and this percentage is probably much too small. But these paralyses are not spastic in character, and do not lead to spastic contractures.

(Certain cases have been reported in new-born children where with spina bifida the lower extremities were held in a position of flexion, the thighs flexed on the abdomen, and the legs on the thighs; but in these there does not appear to have been any true spastic contracture. Dollinger reports a case of temporary spastic contraction of the muscles of the lower extremities, which disappeared when the sac was emptied, and reappeared as it refilled. The sac was in the lumbar region.)

I have thus far been unable to find any account of spastic contractures occurring in uncomplicated spina bifida. In our case, moreover, several special reasons combine to render the hypothesis of its direct origin from the spina bifida improbable. In the first place, the paraplegia is of what we may call the pure type — that is, uncomplicated by symptoms referable to other portions of the cord than the lateral columns. This in children is practically always cerebral (primary lateral sclerosis in them being almost unknown); secondly, it is difficult to understand how a spina bifida in the lumbar region could cause an affection of both lateral columns of the cord without more evidence of the affection of other portions.

But if the spina bifida is not the cause of these contractures, to what then are they due? In this and in all similar cases I believe these spastic paraplegiæ to be cerebral, and to be the result of the accompanying hydrocephalus. Spastic contractures in connection with secondary hydrocephalus are very common, but may, perhaps, more fairly be considered in many cases as the result of the primary lesion. In hydrocephalus, however, which appears idiopathic and primary, they are less common, but more frequent than is sometimes supposed.

Hydrocephalus connected only with spina bifida, as in our case, and not due to cerebral disease, must be considered primary. In connection with the late development of the contractures in our case that of Anton may be mentioned, where, in a case of congenital hydrocephalus, spastic contractions appeared in the previously unaffected extremities at the age of nine. This late appearance in primary hydrocephalus is probably not uncommon.

In this case, and in similar ones, therefore, I am inclined to believe that the spastic paraplegia is not directly due to any effect on the cord occasioned by the spina bifida, but is the indirect result of the accompanying hydrocephalus. The exact steps by which this result is produced are not yet wholly proved, but the numerous investigations now going on, on this and analogous subjects, render it not improbable that we may before long obtain a more exact knowledge of them.

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Clinical Department.

A CASE OF THE PHELPS OPERATION FOR TALIPES EQUINO-VARUS: RESULTS.[1]

BY H. W. CUSHING, M.D.
Assistant Surgeon to the Children's Hospital.

THE accompanying illustrations represent some casts of the foot of an otherwise well-developed patient, age eight years, which I thought might be of interest in connection with the "Phelps" operation. The first (Fig. 1) shows a congenital talipes equino-varus of the more severe type. A foot which was unyielding to any attempt at manual *redressement.* The patient walked, as the callus shows, almost on the dorsum of the foot. The toes point inward ninety degrees from the normal position, and are elevated. You can thus appreciate the amount of bony distortion and contraction of soft parts which must have attended such a deformity.

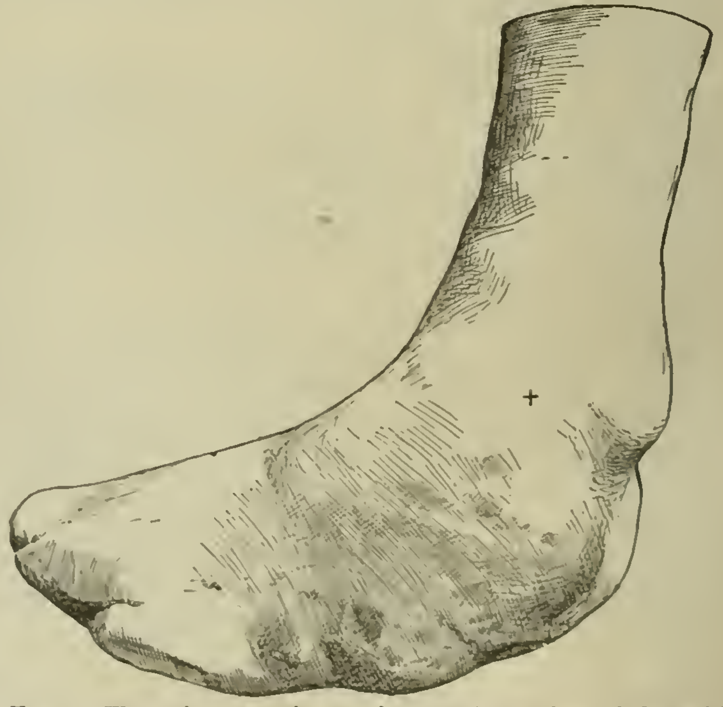

FIG. 1. The x is at a point on the anterior surface of the ankle-joint, midway between the malleoli.

This foot I treated by the "Phelps" method. An unsuccessful attempt at *redressement* under ether. Then a tenotomy of the tendo Achilles and plantar fascia. Then through the vertical incision, which Phillipson has so well described, a division successively of the tibialis posticus, abductor pollicis, flexor longus digitorum, flexor longus pollicis, deltoid ligament, the inner half of the flexor brevis digitorum and flexor accessorius.

After division of each, an attempt was made to correct the deformity. Sometimes the foot yielded; at others no gain was attained. At length, as I was about to attack the astragalus, a final effort caused something to yield in the mid-tarsus, and the foot came easily into good position, leaving a wedge-shaped defect one inch wide at its cutaneous surface and extending from the centre of the sole to the level of the internal malleolus. During these manipulations the internal plantar vessels, which were unusually small and had been dissected free with great difficulty, were ruptured.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

The wound healed in the usual manner, by the Schéde method (without complication), and was practically closed at the first dressing, twenty-one days after the operation. The complete organization of the clot and the final removal of all dressing was about the fortieth day.

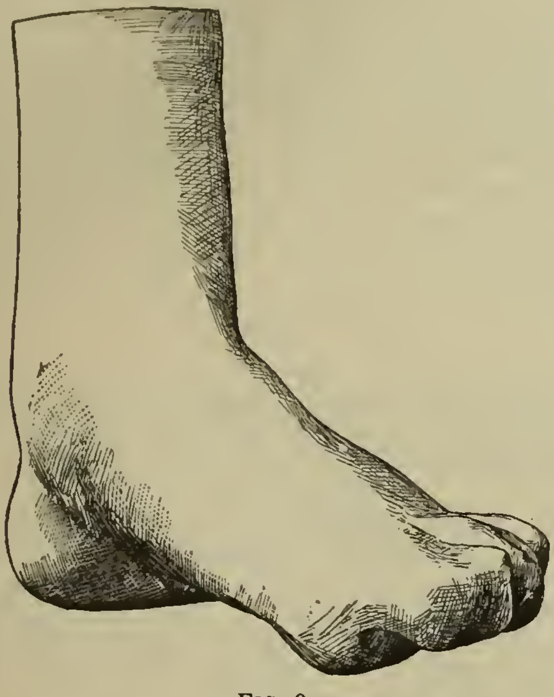

Fig. 2.

Three and one-half months after the operation this cast (Fig. 2) was taken. During this time the patient wore a Taylor club-foot shoe. At this date all apparatus was omitted. The foot is perfectly straight, especially the anterior part so often seen still somewhat inverted after operative treatment. The sole is in its normal position. There is no equinus. The patient can flex the ankle beyond a right angle, and walks without a limp.

The points of interest in this case have been:

(1) The completeness of the reduction of the deformity.

(2) The small cicatrix, that is, small when the original gaping wound replaced by it is recalled.

(3) The amount of pain immediately following the operation. Quite marked for twenty-four hours. Then gradually diminishing, and finally ceasing at the end of the third day.

(4) The tendency at present of the foot to assume a position of valgus apparently from a lack of support of its inner edge. This happens at times in cases treated by torsion and other operative methods, and can be controlled in this case if it shows a tendency to increase. It may disappear as the cicatrix becomes firmer. It is now noticed only when the foot has to support the weight of the body as in standing, walking or similar attitudes.

I contribute this record as a proof of the efficiency of Dr. Phelps's method, and to show the result which may be attained by it.

The Long Island (N. Y.) College Hospital. — The Thirty-third Annual Commencement was held on March 23d. The graduating class numbered 64.

A CASE OF DOUBLE CONGENITAL CLUB-FOOT IN THE ADULT.[1]

BY A. THORNDIKE, M.D.

I have always regarded it as a curious and significant fact that many of the severe and neglected forms of club-foot, those which defy the ordinary and more gradual methods of correction by mechanical appliances, can be cured and serviceable limbs obtained without any cutting or removing of bone; and I have ventured to present this report of a single case in order to illustrate this fact and see what deductions, if any, could be drawn from it for our guidance in treating club-feet of this so-called resistant class.

S. C., single, twenty-eight years old, was referred to me last June, by Dr. George Haven, and admitted to the House of the Good Samaritan, June 29th. She was the oldest of five children, who, with the parents, were all, excepting her, free from malformations; maternal impressions were not considered to have influenced her condition, and she was not otherwise deformed. She complained of pain and tenderness in her feet, and said that this was so troublesome that after doing a little housework on one day she usually was obliged to spend the next two on a lounge or in bed.

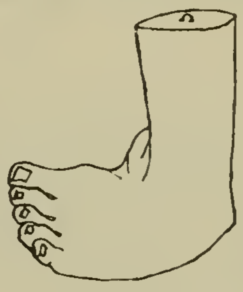

Fig. 1.

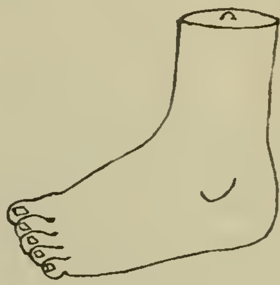

Fig. 2.

She was thin, poorly developed, and very short; she walked with a waddling gait, rolling considerably, and bore her weight on the outer sides of her boots; the toes were turned in, so as to point directly at each other. The feet were kept widely apart in stepping, and she required assistance to keep her balance. The deformity was precisely alike on both sides, and is best seen by referring to the cut, Fig. 1, drawn from a plaster cast of the left foot taken at entrance. Figure 2 is from a cast of the same foot made January 10, 1892. The heel was lifted posteriorly, and was twisted in, so that in standing the plantar surface of the heel was turned inward and backward, while the anterior sole was drawn in by the contracted plantar fascia, so that it lay in a plane facing directly backwards. The tarsus was very prominent, and the metatarsal bones and toes, instead of lying alongside of each other as in a normal foot, were rotated so as to lie vertically one above the other; the toes also pointed a little upwards as well as inwards. The outer maleolus nearly touched the ground in standing, and its outline was lost in a large tender callous which surrounded it and extended along the outer border of the foot. It was an equino-varus of a severe type. The deformity did not yield much to pressure with the hand; but very little force could be used without causing pain. Under ether, it was evident that her weight was borne chiefly on the anterior surface of the calcaneus and a part of the cuboid.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

On June 30th she was etherized, and tenotomy done on the right tibialis anticus, and on both tibiales postici and both plantar faciæ. Dr. Bradford's modified club-foot lever, which is figured below, was applied, and by intermittent twistings (using considerable force) the malposition was so far reduced that the skin on the inside of the sole was beginning to split. Dr. E. G. Brackett and Dr. J. E. Goldthwait were present, and we all agreed to stop before actually splitting the skin, preferring to leave the completion for another time rather than incur the complication of an open wound and a scar which might be tender and painful and interfere with locomotion. The feet were accordingly enveloped in small baked-gauze dressings, and plaster-of-Paris bandages applied from the tips of the toes to six inches above the bent knees. Six weeks later she was again etherized and the feet easily over-corrected by the lever applied as before; similar dressings and plaster bandages were used; for a day or two immediately after the first operation there was some pain, none afterwards.

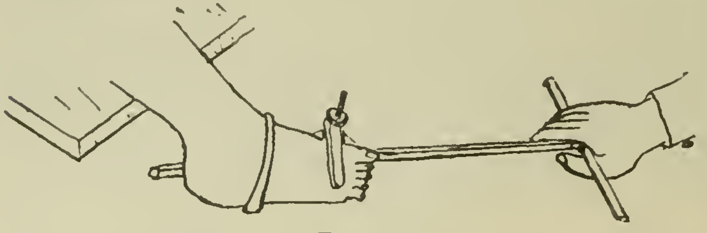

Fig. 3.

The subsequent history after removing the plaster bandages shows that she did toe-in a little with both feet at first, and there was also some œdema and tenderness, otherwise everything progressed uniformly well. She wore a pair of Taylor club-foot shoes, with long outside uprights and a short posterior arm at the waist to evert the feet; after three months the long uprights were shortened to the usual size, and the Taylor shoes worn all day except for one hour, when she walked about in her stockings in order to gain suppleness and pliability. There has been no trouble from toeing-in since.

The improvement in the gait was quite rapid. Two weeks after the apparatus was applied she went down two flights of stairs and up again. It is now more than six months since the operation, and she returned for observation ten days ago. The cast (Fig. 2) taken at that time show the position of the feet; both feet could be raised beyond a right angle with the leg, and the motion of the right ankle-joint was fully normal, while the left was somewhat restricted. She had still further improved in walking, although she yet rolled a little from side to side. There was no sensitiveness except over a small area under the arch of the right foot.

In conclusion, it seems to me that many cases of severe resistant club foot, even in the adult, can be forcibly corrected, and should be so treated in preference to methods which mutilate the foot by the removal or division of bone. Dr. Bradford has alluded this evening to two adult cases of his own, one an unpublished case, the other to be found in the "Transactions of the American Orthopedic Association," 1889, Vol. 1; they were thirty-five and eighteen years of age respectively, and the final results in both were excellent. The method was essentially similar to the one I employed, and it is justifiable to infer from the consideration of these three cases that the severer operations should be restricted to resistant club-feet which have failed to yield to this procedure, forcible correction supplemented, if necessary, by tenotomies; in other words, that this method should always be tried first before resorting to harsher and more radical measures. For I believe that congenital club-foot is to be regarded as a congenital dislocation of the mid-tarsal joint; that it should therefore be our aim to reduce the deformity if possible like a simple dislocation, and to hold it there by suitable apparatus until all danger of relapse is past. This risk, in adults at any rate, is not a great one provided the dislocation has been thoroughly and completely reduced. But if by the use of simple force and tenotomies a thorough and complete reduction cannot be accomplished, then, and then only, are those procedures in order which convert the simple dislocation into a compound one; namely, deep incisions into the joints, osteotomies, and excision of the astragalus. This appears to be a perfectly fair deduction to make, and I have ventured to call attention to it because the text-books say very little on this subject.

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FAULTY POSITION OF THE HEAD AND NECK DUE TO THE EYES. AND CORRECTED BY TENOTOMY OF THE EYE MUSCLES.

BY E. E. JACK, M.D.
Ophthalmic Surgeon to Out-Patients, Boston City Hospital; Physician to Eye Department, Boston Dispensary.

I have hesitated to report this case, for although the object in view has been attained, yet the eyes need further operation. As, however, the patient is getting along well, I shall do nothing more until he is able to bear operation without ether.

On February 10, 1890, the patient, a boy, nine years old, was referred to me by Dr. Bullard at the Dispensary. The history was of pain over the eyes, especially the right, every spring, lasting three or four weeks. Attention was soon called from this to the position of his head, which was constantly held bent to the right and slightly twisted on a vertical axis in the same direction. Dr. Bullard's examination of the neck and back was negative, I remember, though the records are missing. The left side of the face was slightly more prominent than the right. The end of the nose deviated a little to the right, and the mouth was drawn up a trifle in the same direction. The right side of the head behind was fuller than the left. The only history obtained from the parents was that the head had been held sideways from babyhood. Vision of each eye was 0.9 —, hypermetropia about 1.50 D., and some astigmatism, axes oblique. Fundus normal.

The boy was seen at short intervals for over a month and the following observations were made, there being but slight variation from time to time. There was habitual binocular single vision. He had the power of voluntarily producing vertical diplopia of about eight inches at eighteen feet. Could not unite in the stereoscope. There was a left hyperphoria or tendency of the left visual axis above the right, of 20°. This was the average result in all the testings. There seemed to be no eso- or exo-phoria tendency inward or outward. With the revolving prism over the left eye the test of the muscles was, base up, 3°, in, 6°, out, 10°, down, 15 to 20°.

On March 16, 1890, after several ineffectual attempts without an anæsthetic, ether was given and the left superior rectus tendon cut. When tested two days later no change from his former condition was noted. Judging from this experience and that of others the next step was taken. On April 18th ether was again given and the inferior rectus tendon of the right eye was cut completely off, Dr. Burr and Dr. Bullard assisting. For two weeks after this there was a constant vertical diplopia, which lasted in the early morning for a week or so more.

The last of May he had begun to hold his head perceptibly straighter. The eyes troubled him a little in the morning and in the evening if he sat up after eight o'clock. In September, his head had become perfectly straight, and has continued so until now. A recent examination of the eyes showed a condition about the same as the original, but reversed. He gets along perfectly well and has no trouble at school except that if he looks up suddenly the right eye deviates upward. This he easily overcomes.

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A CASE OF TORTICOLLIS DUE TO HÆMATOMA OF THE STERNO-MASTOID MUSCLE.[1]

BY R. W. LOVETT, M.D.

Alexander P., six weeks old, was brought to the Carney Hospital Out-patient Department, in August, 1890, on account of a swelling which the mother had noticed in the neck. The child was healthy and well developed, and was born by an easy labor.

The examination showed a bunch in the left sterno-mastoid muscle, about the size of a hazel-nut. The muscle was slightly contracted, as a result of which the face was turned somewhat to the right. The head could be put into the normal position, but could not be over-corrected. The tumor was plainly to be felt, and did not seem to involve the surrounding structures, but to be limited strictly to the muscle. The case was seen by Dr. Burrell and Dr. Post, and child was put upon general treatment, which had little or no effect. The tumor gradually disappeared, and at the end of two months was no larger than a very small cherry.

The child was not seen again until sent for by the writer in January, 1892. The child now presents a well-marked case of torticollis due to the contraction of the left sterno-mastoid muscle. The head cannot be placed in a correct position, there is some asymmetry of the eyes, the tumor has entirely disappeared, and were it not for the early history, the case would pass for a routine one of torticollis.

The case is presented thus in detail because of the statement made by Dr. Whitman, in his recent exhaustive paper,[2] that no case of torticollis due to hæmatoma of the sterno-mastoid muscle is on record.

M. Prevot du Haudray, following the method of Professor Garnier's studies of the Simian language, has carried his phonograph into the hen-coop. He places it in one hen-house where the "family," are at home, and when the receiver has been cackled into for half an hour it is taken away, and made to repeat all the gossip in a neighboring hen-coop. The results of the experiments are said to be marvellous, and the Académie des Sciences is awaiting a lecture on the subject with the greatest interest.

Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE.

BY S. W. ABBOTT, M.D.

THE MANAGEMENT AND CONTROL OF INFECTIOUS DISEASES.

Influenza. — The Local Government Board of England, on the 25th of last January, issued a circular of precautions to be observed during an epidemic of influenza, from which the following extracts are taken.

(1) Influenza is spread by infection from person to person. Upon this point the medical officer of the board wrote:

"In its epidemic form influenza is an eminently infectious complaint, communicable in the ordinary personal relations of individuals one with another. It appears to me that there can be no doubt as to this fact. . . . In some circumstances it would seem that infectiveness of influenza through the atmosphere shows itself over a wider area than the limits of household life. Probably also there are other less direct ways by which the infection of the disease can travel; and ways, moreover, by which the infection can be retained for a time in a state of suspended activity." [Since the above was written, evidence has accumulated to indicate that influenza is infectious at quite an early stage of the illness, and may remain so as late as, at least, the eighth day from the attack.]

By having established a place for this influenza among infectious diseases, we assert a position for the disorder within a class of diseases over which we habitually exercise a measure of control. But, from what we have thus far seen of the specialities of influenza, we cannot feel particularly confident of our ability, under the existing conditions of society, to successfully defend ourselves against a further outbreak. A disease that can be absent in an epidemic form for thirty years together, cannot, even if a first attack confer immunity, avail to give the protection of a first attack to any large part of the population. [Abundant evidence has now accumulated to show that influenza does not, in any marked degree, or for any considerable length of time, confer immunity against another attack.] Early isolation-precautions, applicable perhaps to children suspected to have measles, cannot well be applied to persons suspected of influenza among the bread-winners of a community; and the singular ability possessed by influenza to disperse itself over a population, owing to its brief incubation period, must add to the difficulties of dealing with an infection that finds the bulk of the population susceptible to its attack. . . .

In view of the difficulties referred to, it is not practicable to devise any restrictive measures for the prevention of the spread of influenza which shall be universally applicable.

But, under some circumstances and certain classes of persons, some such measures should be resorted to, and this notably:

(*a*) For persons in whom an attack of influenza would be specially dangerous by reason of age or infirmity;

(*b*) For the inmates of institutions, the mode of life in which can be regulated and controlled;

(*c*) For the first cases of influenza in a locality or a household where the attacks are early recognized.

In such cases separation between the sick and the healthy should, as far as practicable, be carried out. Measures to this end have, in some instances, been adopted with marked success. With isolation should be combined disinfection of infected articles and rooms.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1892.

[2] Royal Whitman: Medical News, October 24, 1891.

Persons suffering from influenza should not expose themselves in public places. Since the propagation of influenza is known to be promoted by the assemblage of large numbers of persons in a confined atmosphere, it is advisable that when an epidemic threatens or is present, unnecessary assemblages should be avoided.

The ventilation and cleanly keeping of any building in which many people are necessarily collected together should receive special attention when influenza threatens or is present, with a view to secure that the air of the building shall be frequently changed, at any rate during the intervals of its occupation, and to avoid accumulation of dust and dirt.

(2) The liability to contract influenza, and the danger of an attack, if contracted, are increased by depressing conditions, such as exposure to cold and fatigue, whether mental or physical.

There is reason to believe that the development of an attack of influenza in a person exposed to the infection depends very largely upon the receptivity of the individual, and that the power of resistance varies, not only in different persons, but also in the same person from time to time, being diminished by any conditions which depress the general bodily vigor. It is, therefore, important that at the time of an epidemic all persons should, as far as they are able, pay attention to such measures as tend to the maintenance of their health, wearing clothing of suitable warmth, and avoiding unnecessary exposure to cold and fatigue, unwholesome food, and excessive use of alcoholic liquors. Similar principles should be borne in mind by those who, as managers of institutions and establishments, have to make regulations for others.

The risk of a relapse and of the occurrence of those pulmonary complications which constitute a chief danger of the disease is increased by anything which involves exposure to cold or fatigue before complete recovery.

The Prevention of Tuberculosis.[1] — Prof. M. L. Bard, of Lyons, France, proposes two essential measures for the prevention of tuberculosis in hospital practice:

(1) The disinfection of sputa and spit-cups by means of boiling water. For this purpose the apparatus consists of an iron tank for the boiling water, and racks of galvanized-iron wire, each rack holding sixteen spit-cups so that the whole rack can be immersed in the boiling water at once. Dr. Grancher advised, in addition, that some carbonate of soda should be added to the boiling water so that the boiling point could be raised several degrees, but Professor Bard thinks this to be unnecessary.

(2) The other measure has reference to the care of the floors. Instead of sweeping for the removal of the dust, moist cloths are employed. After trial of several different substances in his hospital for the purpose of making the floors impervious, he found that paraffine answered the purpose best. He found the expense to be about 38 centimes per square metre (seven cents per square yard) when applied hot, and 24 centimes per square metre (four cents per square yard) when applied in a petroleum solution. For very large floors the cost would be less.

THE DISINFECTION OF DWELLING-HOUSES IN THE CITY OF BERLIN.[2]

By a decree of the police authorities of Berlin, dated February 7, 1887, it was rendered compulsory to disinfect the dwellings as well as the effects of patients suffering from a lengthy category of infectious disorders. Not only were the clothes, bedding and all articles used by the sick person to be operated upon, but the walls of the sick-chamber were to be rubbed down with bread, as prescribed by Pistor, this plan being preferred to the use of the corrosive sublimate spray which was advocated by the author, and all the furniture was to undergo special treatment. The house disinfection is carried out upon a plan devised by the author by the experienced trained staff. It was arranged that the services of a certain number of workpeople should be obtained from an existing society upon a fixed payment of six marks per head per diem. These men had to receive special instruction to qualify them for their duties; and they were furnished with the requisite appliances, chemicals, etc. The precautions to be observed in the case of utensils, polished furniture, floors, etc., are laid down. All fabrics, bedding, clothing, etc., are packed up by the workmen, and disinfected by steam at the central station. In certain cases respirators of peculiar construction are worn by the operatives. The official instructions for the work are printed in full, and a list is given of sixty-three articles of dress, pieces of apparatus, etc., required by the staff. A tariff has been drawn up for the payments to be made for the work. Statistics are given, of the number of rooms and dwellings operated upon, and of the cubic contents, etc., of the fabrics disinfected.

THE DISPOSAL OF REFUSE AND DUST.

A new process for the disposal of refuse and dust was shown to the Congress of Hygiene at London. It is now in successful operation at Chelsea. The refuse sorting is almost entirely mechanical; nine-tenths of the material is never touched by hand. The dust-carts deliver their loads into a revolving cylinder, containing bars of wood, which is used to prevent bottles from being broken. The material thrown in from the dust-cart passes out at the other end, in two or three minutes. The part which does not drop through the meshes of the first cylinder is taken out and sorted by hand. That part which passes through is received into a second cylinder or screen, a powerful blast of air meets the material coming from the second cylinder and blows the paper away from it to be utilized elsewhere. The heavier material is raised by an elevator and falls upon an iron revolving table, around which boys sit and sort out the refuse. A third screen receives all that passes through the second. The meshes of the first screen are three inches square, of the second one and one-fourth inches, and of the third three-eighths of an inch. The utilized materials consist of rags, paper, and bags for paper-making, these being reduced to pulp and made into wrapping-paper on the premises. They are also bones, bottles, tin, scrap iron, boxes, straw, vegetable and animal refuse, cinders, etc. The coal is all saved, and so are the iron, boots and shoes, etc.; while much nondescript material is ground up in a mill. The organic refuse delivered at the end of the third screen is used as fuel for working the engines on the premises, and a part is sold to the brick-makers for fuel. The dust is conveyed by means of a blast to the furnace fires. Cinders are mixed with pitch and made into briquettes for fuel. The works are lighted by electric lights generated by the fuel obtained from the refuse, and the company hopes in the future to be able to utilize the contents of the London dust-bins to light the streets of the city.

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[1] Revue d'Hygiène, January, 1892.

[2] H. Merke: Viertel jahrsschrift für off. Gesundheitspflege, 1891, p. 258.

FILTERING ESTABLISHMENTS FOR MUNICIPAL WATER-SUPPLIES.[3]

At a meeting of the German Health Society held in September last the following propositions were discussed :

(1) All surface-water must, before being used for drinking purposes, be freed from any possible sources of infection.

(2) For this purpose, in all cases in which large volumes of water have to be dealt with, filtration through sand may be deemed to be the most practicable and perfect process under existing circumstances.

(3) The sand filter is not, as it is generally assumed to be, thoroughly efficacious under all circumstances. Sand filters are by no means capable of extracting all germs, but when intelligently worked, it is possible by their means to confine the germs within very moderate limits.

(4) The following are the conditions for satisfactory working: (*a*) Good raw material (unfiltered water), so far as possible free from pollution. (*b*) Moderate filtering speed. (*c*) Regularity in the working of the filter. (*d*) The rejection of the water supplied at the beginning of each filtering period.

Recent experiments has shown that a sand filter is not absolutely *germ-tight.* It depends largely for its impermeability upon a thin stratum of impurities and micro-organisms entangled in its upper layers or deposited as a net-work upon its surface, and for this reason, until a considerable body of water has been passed through the filter, leading to the formation of this preservative layer of organic matter, the water yielded is liable to contain many germs. This network, however, greatly retards the passage of the polluted liquid, and in the course of time opposes such obstacles to the action of the filter that the filtration has to be discontinued in order that the filtering substance may be cleansed.

Professor Piefke, in continuing the discussion, said it was a matter of extreme importance to render the speed of filtration independent of the fluctuations in the daily rate of consumption, which varies very considerably. For this purpose a compensation-reservoir is necessary. He also called attention to the superior quality of the water yielded by covered filter-beds to that obtained from open filter-basins. Their freedom from ice is also an advantage.

THE WATER-SUPPLY OF PARIS.[4]

The water-supply of Paris is divided into two distinct services, one for streets, yards, stables, gardens, and industrial purposes, and the other for house-supply. For the domestic-supply the pure and fresh spring-waters of the Vanne and Dhuis are led from their source to covered reservoirs by closed aqueducts, and conveyed to the consumer without contamination; while the public service is supplied by the waters of the Seine, the Marne, and the canal de l' Ourcq (which is also used for navigation), and there are some other sources, including artesian wells.

In 1878 these combined resources were equal to a maximum daily yield of 270,000 cubic metres for domestic-supply, the total of 397,000 being equivalent to 198 litres per head of the population of two millions. The works for obtaining this supply comprised the artesian wells, the aqueducts (old and new), and twelve pumping-stations working at a total of 2,130 horse-power.

The insufficiency of this system of water-supply had already been recognized ; and in 1879 the Municipal Council decided upon a scheme for extending the works in several directions, so as to provide a daily delivery of 70 litres of spring-water, and 200 litres of river-water per head of the increased population. The works comtemplated in this programme were at once begun, and may now be said to have been completed, although the details have in the meantime been considerably altered.

The paper describes the works that have been actually carried out, including three new pumping-stations on the Seine, the addition of further motive power to existing stations, the collection of some other sources of spring-water, and the extension of the reservoirs. There are now on the Seine seven new pumping-stations, equipped with twenty steam-engines and thirty-nine boilers, working up to 2,400 effective horse-power ; on the Marne three stations, containing twelve hydraulic machines and five steam-engines with ten boilers, working altogether up to 1,500 horse-power ; and in the valley of the Vanne four stations, containing six hydraulic machines and four steam-engines working up to 450 horse-power.

Of the new pumping-stations, the most important is that at Ivry, situated on the left bank of the Seine, and just above the confluence of the Marne.

(To be continued.)

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

(Concluded from No. 12, page 294.)

In Memoriam.

DAVID HUMPHREYS STORER.

Born March 26, 1804. Died September 10, 1891.

GEORGE HINCKLEY LYMAN.

Born July 17, 1819. Died August 19, 1891.

Meeting of Wednesday, January 20, 1892.

Dr. Lyman.

Dr. C. Ellery Stedman read an interesting sketch of Dr Lyman's life :

George Hinckley Lyman was born in Northampton, July 17, 1819, the son of Jonathan Huntington and Sophia (Hinckley) Lyman. He was educated in the Round Hill School in Northampton, and was then obliged to pass several years in Ohio and other Western States, on account of his health, before beginning his professional studies in Philadelphia. He took his medical degree at the University of Pennsylvania in 1843, served as interne at Blockley Hospital, and passed nearly two years in medical studies in Paris, returning to Boston in 1845. He married, first, October 14, 1846, Maria Cornelia Ritchie, daughter of James T. Austin: she died in 1864, leaving two sons and two daughters; he married, second, February 13, 1879, Henrietta, daughter of Samuel T. Dana, who survives him.

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[3] Deutsche Viertel jahrsschrift für. Gesundheitspflege, 1891, p. 38.
[4] Annales des Ponts ét Chaussées, February, 1891.

He began practice in Boston on his return from Europe, and while enduring the tedious waiting for patients, which is the lot of young doctors, busied himself in study and writing. Patients, however, were not long in coming to one so well equipped for his work, and although Dr. Lyman's *clientèle* was never large, owing to his four years' absence in the army, it was of the most satisfactory kind. It is not improbable that he was disappointed in finding that his professional line was likely to be the physician's rather than the surgeon's, for he had fitted himself especially for surgical work. But surgery in Boston was at that time in the hands of a few men, who did not look favorably on new aspirants.

His first paper was on "Non-malignant Diseases of the Uterus," and won the Boylston Prize for 1854. His second contribution to medical literature was an essay which gained the prize offered by the Massachusetts Medical Society for a "Dissertation on the History and Statistics of Ovariotomy, and under what Circumstances the Operation may be regarded as Safe and Expedient." This was in 1856, when ovariotomy was yet looked on with no little distrust and even with dread. By its painstaking research and well-argued positions, the essay contributed in a signal manner to a consideration of the operation more serious and more favorable than it had yet gained. A list of his writings is appended to this notice; among them, besides those here named, is one on "A Case of Embolism of the External Iliac, followed by Gangrene, Loss of Leg, and Recovery," which has an interest in connection with his own last illness.

When the war of secession broke out, Dr. Lyman was one of the first to offer his services to Governor Andrew in response to his call for volunteers in April, 1861. He co-operated with Dr. William J. Dale in organizing the State Medical Bureau. Dr. Lyman's work was here of high importance, system having to be evolved out of disorder, and discipline to be enforced on people who were surprised to learn, for the first time, of the duty called obedience. Dr. Dale says in a letter to Adjt-Gen. Schouler: "Whatever of success attended the preparation of the troops prior to my commission is attributable to Dr. Lyman, who showed great energy and good judgment, and was constantly in consultation with the Governor." Dr. L. V. Bell, Dr. Henry Bryant and Dr. Lyman were the first candidates to appear before the Medical Examining Board in Washington. His name was reported at the head of the list, which gave him rank over all civil appointments in the medical service during the war. On September 7th, he was assigned Medical Director of Gen. Fitz John Porter's entire division. On the march to Yorktown, where his duties were arduous, Dr. Lyman contracted a severe dysentery, which seriously disabled him at the time, and in the form of chronic diarrhœa contined to annoy him for years after the war. After the retreat from Yorktown, Dr. Lyman became Medical Director of the Fifth Corps when General Porter took command of it. On June 27th, the whole corps of twenty-six thousand men received the attack of double its number at Gaines's Mill from noon till dark, when it was withdrawn across the river. At Gaines's Mill two hospitals were established. In full operation until the fight was nearly over, the heavy fire rendered these at last untenable. A part of the surgeons were captured as they left one door, while the rest escaped from the other. The fatigues and exposure of the surgeons busied about the work after these battles were exceedingly great, and in Dr. Lyman's case terminated in such complete collapse as to make rest imperative. Fortunately for him, the opportunity was afforded by a recent law adding to the regular army eight medical inspectors with the rank of lieutenant-colonel, four from the old army surgeons and four from civil life. Assuming the duties of the new rank, he was ordered to inspect the hospitals in Baltimore, Philadelphia, New York and Washington. Thence, with headquarters at Louisville, he had monthly to inspect and report on medical work in Kentucky, Tennessee, West Virginia, Ohio, Mound City, and as far South "as our lines may extend." In December, he found in Nashville, the churches, many houses and warehouses overflowing with wounded. In such duty Dr. Lyman continued till he was transferred to the Department of the East, to inspect New England, New York and New Jersey. Extra duty of inquiry into alleged abuses in the large hospitals at the East gave him in the department three thousand five hundred miles of railway travel. In December, 1864, Dr. Lyman was ordered to the Department of the South, for inspection of hospitals and to await the arrival of General Sherman's army at the sea, and report on its sanitary condition. He remained in this department until he resigned in November, 1865.

On leaving off his uniform, Dr. Lyman returned to Boston, where private practice soon claimed almost all his time. During the war a hospital for the city of Boston, the need of which had been talked about for years, was planned, built, and opened in 1864. Dr. Lyman was consulted in its rise and progress, and on its completion was offered the post of visiting surgeon, but he did not clearly see his way to undertake the arduous work which the appointment would bring. But in 1871, on being made visiting physician, he assumed that position and filled it with energy and devotion; he was particularly interested in its gynæcological work, and never tired in studying and treating, with sedulous attention, the class of cases which form so interesting a department of hospital experience. In all the affairs of the hospital his judgment was sought and followed, and his interest in all that concerned its administration and its usefulness never abated.

In 1879, he was elected President of the Massachusetts Medical Society, and brought to its varied and far-reaching work the same zeal and thoroughness which characterized his hospital service. He was a good presiding officer, ruling strongly, with impartiality and coolness. Before this, in 1870, he acted as anniversary chairman, and in 1875 he had pronounced the oration, his subject being "The Interests of the Public and the Medical Profession." This topic he handled in a broad and vigorous manner, having the courage of his convictions in no feeble degree. He did not believe in women practising as physicians, and was not at all afraid to say so, fortifying his positions with arguments well considered for that time. He was not given to yielding any opinion which he had thoughtfully adopted, and the writer does not know that he materially modified his views of that question, as increased experience has led most of us to do. The address was characterized by good sense, and its recommendations of legislation in medical matters were important. It brought him, besides the applause of the Society, many letters of congratulation from the best-known men of the profession.

Veterans of the war are prone to weary a younger generation with their reminiscences, as Thackeray says the Peninsular and Waterloo veterans did in his day. The writer thinks, however, that he is not mistaken in considering that the most valuable and most readable of his writings is a paper which he presented to the Military Historical Society of Massachusetts, on "Some Aspects of the Medical Service in the Armies of the United States During the War of the Rebellion." The subject gave him opportunity of greater freedom in style, and allowed some play of the humor which helped to make his company so agreeable to those who saw most of him, no trace of which was permitted to appear in his scientific writings. A study of this paper, in the event of another war, would be of inestimable aid to the organization of a large surgical service, the very foundation of which may have to be laid in the midst of alarm and confusion.

Dr. Lyman was one of the founders of the American Gynæcological Society, and among his public associations he belonged to the Obstetrical Society of Boston, with which he seldom failed to meet, and where his voice was frequently and respectfully listened to; the Boston Society for Medical Improvement; the Suffolk District Medical Society; the Military Historical Society of Massachusetts; and the Military Order of the Loyal Legion of the United States. He was an Honorary Member of the Harvard Medical School Association, and for many years he was vestryman of St. Paul's Church.

Dr. Lyman went abroad in the spring of 1890; passed the winter in good health in Dresden, Florence, Rome and Venice, the early summer of 1891 in Switzerland and Paris. On his way home he was suddenly seized with facial erysipelas, of which he had survived four previous attacks at long intervals. The disease had cost him the sight of an eye ten years before by sequence of an orbital abscess. This attack abolished the sight of the remaining eye, and an embolism of the femoral artery occurred before he succumbed, on August 19th and the tenth day of his illness. His friend Dr. Priestley, and subsequently Dr. William Ord, and his son Dr. William Ord, Jr., were unremitting in their attendance at his bedside. He was buried at Mount Auburn, September 21, 1891.

Dr. Lyman's presence was singularly fine, his physical strength was great, his step was active, his manner alert. He was proud and sensitive, and very decided in all his views. His absorption in his duty made him sometimes abrupt. He could put up with no disobedience, delay, neglect, or inaccuracy, and thought every one was as young and energetic as himself. He was a loyal friend, and his love for his profession, instead of diminishing with advancing years, ripened into an enthusiasm which younger men could not always attain to. If he took little pains to conciliate those whom he disliked, yet an unjust attack on a brother physician, even on one whom he did not esteem, would rouse his keenest indignation. His mental activity led him to read almost every new medical book in the English tongue, and very much of current general literature.

This love for his profession, his earnestness and thoroughness, his large sense of honor, and his exalted and unselfish patriotism are denied by none who knew him, and are a model for all young men, for all soldiers, and for his countrymen.

Dr. H. W. Williams spoke of Dr. Lyman as follows: Dr. Lyman was a distinguished instance of what may be done, in exceptional and unusual ways, by one of our quiet profession.

After receiving his degree of M.D. at Philadelphia in 1843, Dr. Lyman spent a long time in careful observation of the phenomena and the treatment of disease in the great hospitals of Europe, before returning to establish himself at Boston. Here, he very soon attracted deserved attention, by the publication of two essays, to both of which prizes had been awarded for their conspicuous excellence, by our medical societies. These were not only valuable for their accurate statements of facts and observations regarding a class of cases then little understood by the majority of our practitioners, but they showed evidence of the author's discrimination in the garnering of the store of practical wisdom which was there accumulated, — and, morever, they charmed the reader by their clearness and elegance of style.

These essays evinced such a thorough knowledge of their subjects, and so much of candor in discussing them, that they at once gave to Dr. Lyman a high position among his professional brethren. They appreciated his alertness of observation and his enthusiasm; and noted his thorough preparation for his work, which gave fair promise of his success as a practitioner. These expectations were not disappointed.

Others have done justice to Dr. Lyman's patriotism in placing his time and his skill, his comfort and his health, upon the altar of his country, during long years of war. And this was done, — not in any outburst of youthful enthusiasm, or ardent hope of distinction; but with the calm resolve of sacrifice. Here, his great executive ability and his matured professional experience were alike serviceable; and the duties of high military positions were performed with prompt self-devotion.

Resuming his home-life, with well-won laurels, Dr. Lyman's administrative talent and professional standing marked him for the highest offices within the gift of the medical fraternity. As President of the Massachusetts Medical Society he was dignified and faithful in the discharge of his duties, and vigilant in promoting its welfare. As one of the seniors of the Visiting Staff of the Boston City Hospital he was courteous towards his colleagues, and skilful in his treatment of the patients under his charge.

Dr. Lyman ardently supported what he deemed was for the honor and welfare of the profession; and in administrative matters, he gave candid attention to advocates of a different policy than his own, and heartily adopted other opinions and plans when satisfied of their greater merit; — thus showing himself wise as well as efficient in fulfilling the duties devolving on him.

Dr. Lyman was an active and interested member of societies for medical improvement; where his vigor and originality of thought, his ripe experience and his clearness of expression in debate gave weight to his opinion.

He was one of the founders, and was Vice-president of the Massachusetts Medical Benevolent Society, established thirty-four years since for the purpose of aiding worthy members of our Profession, or their families, who from illness or misfortune have fallen into distress; — and was zealous in its behalf as a much needed means of usefulness.

As a representative of the amenities of the profession, Dr. Lyman was without a rival. He had large acquaintance with notable men of the medical world, in this country and abroad, — and many of these were recipients of the graceful and elegant hospitalities he delighted to offer.

In the course of nearly fifty years of professional life, Dr. Lyman was called to perform functions quite apart from the ordinary routine of a physician's duties. He never hesitated to undertake or failed to accomplish these services, devoting to each his abundant energy, discretion and loyalty: affording to us an example of fidelity, and of zeal in every good cause, which is not often found even in our own self-sacrificing profession.

I can but add my personal tribute to Dr. Lyman's high qualities as a confrère and friend. Returning from my first visit abroad, where I had spent nearly three years, I found myself almost a stranger in my natal city: fortunately for me, I came to reside in the same district with Dr. Lyman, and we were introduced to each other by mutual friends, — our seniors in the profession, — finding in our recent experiences in European hospitals many subjects of interest to both of us.

The ties of friendship then formed were never loosened during the many years which have intervened, until they were lately so sadly sundered.

Dr. Cotting, unable to be present, sent the following:

In the death of Dr. George H. Lyman, the medical faculty lost an associate of generous impulses, gentlemanly bearing, of marked ability, and of exemplary loyalty to the profession. A believer in nature, he was no disbeliever in art. Quick to detect the dangerous tendencies of disease, he was actively alert in efforts to avert them. In public service, and in private practice, with the rich, and among the poor, he was alike diligent and devoted. Ambitious for usefulness, sympathetic in action, he ennobled his calling by published precepts and personal example. He was faithful in friendships, considerate of others, trustful and trustworthy. He will be long remembered.

Dr. John G. Blake said: I have already paid my tribute to the memory of our dear friend and associate in the columns of the *Medical Journal* in behalf of the staff of the City Hospital. But I would like to emphasize again the qualities of mind and heart for which we who knew him best, most esteemed him. The two strongest points in the character of Dr. Lyman are easily discerned. They were cheeriness and thoroughness. His comforting presence in the sick-room was very marked. It dispelled care both for patient and friend. We, who ought to know so well what anxious eyes follow every look and tone of the physician by the bedside, sometimes forget the importance which those who are watching lay upon our manner. It is from it they are to derive strength and courage, or the reverse. Dr. Lyman never forgot this; and his cheerful nature never failed to leave the sick-room brighter for his presence. We all know how much this element of hope has to do with the well-being of the patient.

His thoroughness showed itself in every detail of his work. His too few papers show not only the foresight which gathered information, but the sound judgment which made it available. Whether as historian or essayist, his work was always sure of respect. It was forcible and clear. In the more active duties to which he was called, as Medical Inspector during the war, as President of the Massachusetts Medical Society, and the Obstetrical Society, his time and thought were honestly given to whatever came within the province of his department. Those of us who remember his record in these places of trust, will not forget the painstaking attention to duty with which he filled his place. He was always in earnest. In these two respects alone, his life is a valuable lesson to the younger men of the profession who are about to enter upon active life. Enthusiasm and earnestness are two great factors of success in any profession, but especially in ours. Dr. Lyman possessed both; and it is largely for this reason that his memory will remain honored and beloved beyond ordinary limits among his colleagues.

Dr. A. L. Mason said: My relations with Dr. Lyman were those of a friend of many years, as well as an intimate professional associate. His friendship, from my boyhood, was always sympathetic, considerate and constant, and I have a deep feeling of personal loss in his departure from among us. To his friends and to his patients Dr. Lyman was truly self-sacrificing and loyal. In their welfare he was untiring. With intense pride in his profession, he was zealous in maintaining its prestige and its honor. Although his death was in one sense premature, for he was still strong, erect and vigorous, he had already received the rewards of a life well-spent, in those substantial honors which gratified the ambition of his nature.

Dr. Lyman's early life was by no means without its struggles. He was born in 1819 at Northampton, and attended the Round Hill School, then famous. But, owing to his father's early death he adopted business pursuits which carried him to the far West, and he then acquired those habits of self-reliance, as well as a fondness for out-door sport, which he retained through life.

But, business was uncongenial to him and, in 1842, he joined an elder brother in the Medical Department of the University of Pennsylvania, where he graduated in the summer of 1843, and at once entered the Philadelphia Hospital as resident physician.

In November of the same year, however, he went to Europe, and to that time in his life he always looked back with pleasure. The journal which he kept in those days gives the picture of an enthusiastic, but discriminating, student, who made many friends, saw most of the distinguished teachers of the day in Paris, London and Dublin, and took in much that was entertaining and valuable in his two years of foreign study and travel.

But he was a strong and patriotic American. At first he was somewhat depressed by the loneliness which comes over a stranger in London. In his journal, under date of November 30, 1843, he says, "Although I am so old a traveller, I have slept on a blanket on the floor of a log cabin in Iowa Territory, miles from any other house, with less feeling of loneliness than I have to-night in the heart of the largest city in the world." This was at the age of twenty-four, nearly fifty years ago, when Iowa was indeed a wilderness. However, he soon adapted himself to the environment, and in writing of the great parks of London, says: "They are all rich and magnificent and their immensity in this crowded city would amaze our American citizens. Strange that we do not take advantage of the abundance of room which our cities afford, and that too at a comparatively small price, for the establishment of similar ones. Fifty years hence the want of them will be much felt." And so it is with us to-day, or has been until recently.

February 5th, he saw a murderer guillotined at the Barrière St. Jacques, and thus describes it:

"A firmly-built fellow of perhaps thirty years of age, stepped onto the platform very gaily, accompanied by the priest and one or two others. His neck was bared immediately and bent over into the clasp by the executioner, when by the touch of a rope the axe fell and severed his head from his body as smoothly and quickly as if it had been an apple. The head fell into a basket of sawdust on one side, and his body was at the same time pushed into a box of water like a bath tub on the other. He did not make a single struggle. Indeed, from the time the cart was escorted onto the ground by the mounted troops, until all was over and his body in the cart again, did not exceed five minutes. An awful sight from its very rapidity, though probably the most humane way of execution. Saw his body at dissecting-room this evening, hardly yet cold. He had committed many murders and the family are notorious villians. The first execution I have ever witnessed, and I hope it may be the last for I have had very queer sensations in the region of my neck all day. Noticed a gentleman and a lady there (at least to all appearance such), she with white gloves and an opera glass seemingly enjoying it very much. A worthy descendant of old Mother Eve."

After a visit to Père la Chaise Cemetery, he remarks that: "Not infrequently American names meet the eye, and one's sympathies are involuntarily excited by seeing the names of one's countrymen who have died so far from their firesides, with perhaps none but strangers to smooth their pillows."

Dr. Lyman himself died far from *his* fireside, but not among strangers, for everything that was possible was done by his professional brethren in London to relieve the sufferings of his last days.

Many interesting incidents, hospital experiences, meetings with celebrated people, and historical reminiscences are thus recorded from day to day.

Among Dr. Lyman's classmates and early associates was Dr. John T. Metcalfe, the distinguished physician of New York, who writes as follows to a member of Dr. Lyman's family:

"We entered the University of Pennsylvania in the fall of 1842. Our acquaintance began then, from the fact that we were under the same teachers and attended the same 'quiz.' Our private tuition was under the supervision of the late Drs. William W. Gerhard and W. Poyntelle Johnston, very eminent men. In the spring of 1843 we were graduated by that most ancient and honorable Medical School, diplomas from which were reckoned generally to be second to those of no other American School of Medicine.

"After graduation we parted, to meet in Paris in December, 1843. There, too, we were thrown together by a community of masters. After a year in the French capital I induced Lyman to go with me to Dublin, where were to be found especially great facilities for the study of fevers and of practical obstetrics. . . . As a student, he was devoted to the work of his life. It was our habit to go to the hospital at 6 A. M. for clinical lectures from the great masters in medicine and surgery of those days. . . . In one way or another we worked honestly until 6 o'clock when our modest three-and-one-half-franc table-d'hôte dinner was disposed of. After that, as a rule, books were discarded for the day. . . . The thorough-bred gentleman, the man of wide reading, the *good*, *good* physician, the true friend, the honest man, — why should I mention those attributes with which all his confrères and friends were so familiar."

Toward the end of 1845, Dr. Lyman was glad again to seek his own shores, and, from that time on, his life is a familiar one in this community.

After establishing a practice, he left it in 1861 to go to the war, during which he did his part.

Among the earlier acts of Congress, in 1861, was one providing for twenty brigade-surgeons to be commissioned by the President after an examination by a board of army surgeons. Dr. Lyman was the first to appear before them, and *this* commission was the first one signed by the great President Lincoln under that act, a matter of no little pride to its possessor.

In the Army of the Potomac throughout its organization, through the disastrous campaign on the peninsula, afterward as medical inspector in all portions of the country, he did efficient service, and after the end of the war he returned, like so many other gallant men, to find his practice broken up and his place filled. But, with renewed energy, he soon entered upon his later career, which was all the more honored and honorable from his past record, and this was to him in his final years a source of satisfaction beyond the transient disappointment which he felt on his return from the war.

In the Massachusetts Medical Society, and in the City Hospital of Boston he took the liveliest interest, and at the time of his death was on his way home to take his final term of hospital service before the completion of his fiftieth year in his chosen profession.

Dr. J. C. White made the following motion: "That a committee be appointed by the Chair to take action in connection with the recent death of our beloved and honored associate, Dr. Henry I. Bowditch." Seconded and voted.

The Chairman appointed as the committee, Drs. F. Minot, J. C. White, C. F. Folsom, F. C. Shattuck, R. W. Lovett.

PAPERS, ETC., BY DR. LYMAN.

Non-Malignant Diseases of the Uterus. An essay which obtained the Boylston Prize for 1854. 8vo, pp. 76.

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A Case of Embolism of the External Iliac, followed by Gangrene,

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Tinnitus Aurium and Vertigo as Prominent Symptoms of Lithæmia. Journal of the American Medical Association, December 20, 1883, pp. 16.

Historical Sketch of its Members in the War of the Rebellion. An Address to the Obstetrical Society of Boston. Pp. 62. Printed by the Society. 1887.

Some Aspects of the Medical Service in the Armies of the United States during the War of the Rebellion. By George H. Lyman, late Lieutenant-Colonel and Medical Inspector of the United States Army. Read before the Military Historical Society of Massachusetts, May 13, 1890. 8vo, pp. 40. Boston, 1891.

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SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, February 3, 1892, Dr. H. W. Cushing, Chairman *pro tem.*

Dr. E. H. Bradford read a paper on

OPERATIONS ON THE TARSUS FOR CLUB-FOOT.[1]

Dr. A. M. Phelps, of New York, read a paper entitled

A METHOD OF OPEN INCISION FOR CLUB-FOOT.

The following is a summary:

Nearly thirteen years have elapsed since first I performed the operation of open incision for club-foot. The first cases were reported to the New York State Medical Society in a paper read in 1881.

These cases were treated before I knew anything about antiseptic surgery, and, strange but true, the results were almost equally as good as in the cases upon which we are now operating, following rigid antiseptic rules.

The dressings employed in these cases were splints, which fitted imperfectly, causing considerable pain. The incisions were much too long and more tissues were cut than necessary. The change in the operation as then performed, consists in making an incision commencing in front of the inner malleolus and extending one-third the distance across the sole of the foot, carried down to the neck of the astragalus, on its inner side. Through this small wound the abductor pollicis, tibialis posticus tendon, the plantar fascia, the flexor brevis muscle and long flexor tendons of the toe and finally the deltoid ligament, with all its branches, if necessary, can be cut.

Nothing will be gained by cutting the soft parts more extensively. This, of course, is done after subcutaneous tenotomy of the tendo-Achillis has been performed. Great force is used to rupture the deep ligaments, and if the foot cannot now be drawn to a supercorrected position easily, a linear osteotomy should be made through the neck of the astragalus. If this fails, a V-shaped piece should be removed from the os calcis, the point of the V meeting the linear osteotomy. This failing, the removal of the cuboid and scaphoid is indicated. And, as a last resort, Pirogoff's amputation should be resorted to.

In 198 cases of severe club-foot, nearly all of which had either been operated upon or treated for years with braces, I have found it necessary in only twenty-two to perform osteotomy. Osteotomy, including astragalus resection, ought never to be performed as a primary operation.

In a large number of pathological specimens which I have in my possession, the contraction and deformity of soft parts is out of all proportion to the deformity of the bone, and in two or three specimens of very severe talipes varo-equinus but slight deformity exists in any bone, but rather a dislocation of all bones, one upon the other, and slight changes in their articular facets.

An operation once decided upon, the foot should be supercorrected. Following this rule, cut the parts which first offer resistance, cutting in the order of those parts which first contracted when the deformity was produced, beginning with the tendo-Achillis. The equinus should be overcome as far as possible, first, for the reason that the ligament, extending from the tibia to the os calcis, when short, which it is in about one case in ten, must be ruptured, and not cut, because the nerves and blood-vessels lie close to it. The foot can be used as a lever, and with the hand or with a machine this ligament can be ruptured. If, as has been advised by some, an open incision is first made in the foot, and it is so weakened by an open cut that a sufficient amount of force cannot be applied to rupture the ligament without doing injury to the foot, the equinus cannot be corrected, and a relapse must follow. After subcutaneous tenotomy of the tendo-Achillis, if the skin is found short, make an incision, beginning in front of the inner malleolus and extending at right angles with the foot, one-third the distance across the sole, and carry it down to the inner side of the neck of the astragalus. Through this incision the tissues can be cut in the order already given. Great force should be used after cutting each tissue. If the foot cannot now be placed in a supercorrected position, linear osteotomy with the chisel should be performed through the neck of the astragalus.

If this fails, the next step is the removal of a V-shaped piece from the body of the os calcis, the point of the V meeting the linear osteotomy. If this fails, remove the cuboid and scaphoid bones, which I have found necessary to do in two cases, in adults.

It will be observed that the operation begins by manipulation, taking the various steps up to extensive osteotomy, and in exceptional cases, Pirogoff's amputation may be performed as a last resort.

If these steps are followed, osteotomy will be found necessary in only about ten or twelve per cent. of all cases, and in one half-of these a simple linear osteotomy, the least severe of all the bone operations, will suffice.

There has thus far been no death following the operation of open incision. As I have already stated, the mortality from osteotomy, or from astragalus resection, is from three to five per cent.

Inasmuch as the open incision method furnishes as good results as any operation known, is unattended with danger to the patient, and more than ninety per cent. of all cases are straightened without osteotomy, it certainly should be resorted to before osteotomy is attempted.

In the management of all cases of club-foot, begin with manipulation and fixed dressings; then subcutaneous tenotomy; open incision; and the various forms of osteotomy already enumerated. Thus you will see that the legitimate place for open incision is between subcutaneous tenotomy and osteotomy.

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[1] To be published later.

Osteotomy should never be resorted to as a primary operation — not until the soft parts have been lengthened. The foot must be shortened in proportion to the amount of bone removed, or in removing the astragalus the entire limb will be shortened. It is not necessary to perform osteotomy in a greater percentage than ten, in all cases under the age of fifteen years.

To summarize my results up to the time of my reports made at the International Congress (I have operated upon thirty-seven since reading that paper), I find that: In 93 cases there were 161 operations performed, the average age being six and a half years; the average time of healing the primary wound was four weeks; there were 117 cases of blood-clot organization; 4 cat-gut; and 19 failures of blood-clot organization in 140 cases.

The duration of after-treatment was ten months; on the fourth month after operating, the feet were all straight. Out of the 140 cases traced after one year, 10 cases were found relapsed, or partially so, from neglect. I will say that relapses, when they occur, take place during the first year after the operation, as a general rule.

Dr. Augustus Thorndike read a paper on

A CASE OF ADULT CLUB-FOOT.[2]

Dr. H. W. Cushing reported

A CASE OF CLUB-FOOT CORRECTED BY OPEN INCISION.[3]

Dr. A. M. Phelps: Dr. H. W. Cushing said there was pain in this case. I have observed that in all cases where the operation has been performed so that the foot is supercorrected, if the foot is dressed in that position, there will be pain; but if you dress a little short of that, I do not think pain will be found. There are gentlemen who believe in the contractile treatment of club-foot, and I fully agree with them. We are, however, discussing a class of cases where we expect that the ordinary means of traction, etc., must necessarily fail. These are the relapsing forms. I do not believe it is a good plan to treat a club-foot seven or eight years with a club-foot machine when you can gain as good a result in much less time. The youngest case in which I have performed open incision was in a child of seven months. In any given case if the skin is short, it had better be cut. I place great emphasis upon that. I want to lay special stress on the fact that I do not think primary osteotomy is right. I think that the principle involved in Dr. Bradford's machine is excellent. I fully agree with Dr. Bradford as to the etiology of club-foot, and as to almost everything he said, but the osteotomies I should do as a secondary operation. I believe that is clearly right; and the sooner the profession is educated to that, I think the fewer deaths we shall have. If you take all the cases I have reported and do primary osteotomy, there must have been six to ten deaths, and it is a question how far we are justified in jeopardizing the life of the patient. If we can cure the patient and get equally good results without jeopardizing the life of the patient, I believe we should do that.

Dr. E. H. Bradford: I have been misunderstood if I have been supposed to advocate primary osteotomy in this class of cases. All these relapsing and severe cases of club-foot are those in which other methods have been tried.

In regard to open incision. In one or two of the cases where I have employed this method, I have made this modification of the method of Dr. Phelps which seemed to me to have a little advantage, and that is that the incision through the skin should be parellel with the axis of the foot, namely, on the outer edge of the foot. Instead of making a transverse incision, I have made the incision a little longer, and by hooks drawn it apart, then inserted my knife and cut a cross incision. In the cases I have done, I have had room enough to divide and cut down to the bone.

Dr. A. M. Phelps: The object of the incision is not for the purpose of getting at the tissues underneath, but to cut the skin because the skin is too short. That incision when made is for the purpose of lengthening the skin. If the wound gapes wide open, it easily fills in, and the scar is of no importance whatever.

Dr. Wm. N. Bullard and Dr. C. L. Scudder reported

A CASE OF SPASTIC CONTRACTION OF THE LOWER EXTREMITIES WITH REMARKS IN THE ETIOLOGY AND SURGICAL TREATMENT.[4]

Dr. P. C. Knapp: I agree fully with Dr. Bullard in the pathology of these cases of spastic paraplegia in children. I go even farther in being extremely sceptical as to the existenee of any primary lateral sclerosis even in adults. The cases of spastic paraplegia in adults are in the vast majority of cases to be referred to a combined sclerosis or to the secondary changes in the lateral columns, following some other disease either of the brain or of the cord itself. I would agree also in his case that the hydrocephalus is far more likely to be the cause of the paraplegia than the spina bifida, but there is one point which occurred to me as a possibility. We have in the case a congenital enlargement, congenital dilatation of the ventricles of the brain in the hydrocephalus. We have, furthermore, a deformity in the lower portion of the cord in the spina bifida, and there is a possibility that there may also be an enlargement of the central canal of the cord with a hydromyelia, which would naturally give rise to symptoms similar to syringomyelia, perhaps spastic paraplegia. I think the neurologists are at fault for not referring many of these cases to the orthopedic surgeons for correction of the deformity. In some cases considerable can be done to make walking easier. When spastic paralysis affects the arms, it is in my mind a question whether much can be done. I recall one case, a woman with spastic hemiplegia whose hand was contracted in the usual position, and she was anxious to have something done for cosmetic reasons. The tendons were cut with partial success. It is in my mind somewhat doubtful whether that operation is one to be advised, because a hand contracted in the ordinary position of flexion is certainly a more useful hand than if the flexor tendons are cut, and in most of the cases there is still a little power to the flexor tendons, enough to get a little grasp and hold an object steady in the hand, and if those tendons be cut the power is very much less, and although it may make a little better looking hand to have it straightened out, the use of the hand is not nearly so great.

Dr. Bullard: There were no symptoms of hydromyelia, and no reason to suppose anything of the kind.

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[2] See page 309 of the Journal.

[3] See page 308 of the Journal.

[4] See pages 306 and 307 of the Journal.

DR. E. G. BRACKETT read a paper on

REFLEXES IN HIP-DISEASE.[5]

DR. LOVETT: I would like to know whether he has gone far enough to know whether that is an early symptom or not, whether it precedes the muscular spasm.

DR. BRACKETT: I think it is a condition that depends upon the same condition as that of muscular spasm. I think it is not of value in the old cases where there has been a great deal of atrophy. In those it is almost always a fact that the reflexes are very much increased.

DR. W. N. BULLARD: In cases where there is pain, the very fact of the pain is liable to increase the reflex. When there is very severe spasm, the reflex is not only increased upon the side in which the spasm is the worst, but you are liable to have a certain amount of increase of reflex in the other leg.

DR. E. G. BRACKETT: I have found that so in two cases.

DR. R. W. LOVETT read a paper entitled

A CASE OF TORTICOLLIS DUE TO HÆMATOMA OF THE STERNO-MASTOID MUSCLE.[6]

DR. E. E. JACK read a paper on

FAULTY POSITION OF THE HEAD AND NECK, DUE TO THE EYES, AND CORRECTED BY TENOTOMY OF THE EYE-MUSCLES.[7]

DR. RICHARDSON showed a

RECURRENT TUMOR IN THE THROAT,

removed fifteen years after the original operation. The patient, a woman of about fifty, had had a small growth removed by Dr. Knight many years before. The pathologists in New York pronounced the disease a fibroma, while in Boston the tumor was considered a round-celled sacroma. Dr. J. C. Warren made the microscopic examination. The tumor was so large that in the first place Dr. Charles Homans was obliged to put in a tracheotomy tube, which she has worn ever since. About two years ago the mass began to trouble her again. It grew rapidly and could easily be seen and felt on the right side of the throat involving at least the pharynx and possibly the larynx. She consulted McKenzie last summer, and was advised by him to have an attempt made to remove the tumor. She decided to come home and have the operation performed here.

The growth was easily exposed by external incision, and delivered in front of the sterno-mastoid, the belly of which muscle was pressed outwards very noticeably. The pedicle was separated from the pharynx and œsophagus only by taking with the tumor a large portion of the pharyngeal mucous membrane. Hæmorrhage was alarming, and the blood was kept out of the larynx and trachea only by holding the finger over the opening below the epiglottis. A catheter was left in the œsophagus.

The tumor proved to be a round-celled sarcoma, and its gross appearances before removal were very suggestive of this disease. The brilliant operation on a similar mass a little higher up which Dr. Warren easily removed, a large sarcoma of the tonsil, encouraged me very much in undertaking this case.

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[5] See page 305 of the Journal.
[6] See page 311 of the Journal.
[7] See page 310 of the Journal.

Recent Literature.

The Anatomical and Histological Dissection of the Human Ear. By DR. ADAM POLITZER. Translated from the German by GEORGE STONE. London: Ballière, Tindall & Cox. 1892.

Mr. Stone's by no means easy task, has been faithfully carried out and successfully accomplished. The character of the original work, its thoroughness, its attention to detail and the mass of minute and accurate information it contains, have required of the translator, a very careful following of the text and this has been done with due regard also to clearness and smoothness.

The first part is devoted, after a description of the necessary instruments, to an account of the various methods followed in the removal of the organ of hearing, with or without the naso-pharynx and Eustachian tubes, from the cadaver, either simply for anatomical purposes or without externally visible injury. This is followed by a chapter on dissection of the macerated temporal bone in the new-born infant and adult, and by nearly one hundred pages of text devoted to a most precise description of anatomical and pathological-anatomical preparations of the organ of hearing, and the first part of the book concludes with directions for making topographical sections for instructive purposes, and corrosive preparations, and with the consideration of the subjects of mounting and preservation, while the sub-chapter on histological examination includes the necessary advice as to fixing and hardening, decalcification, embedding, sectioning and staining. This is followed by the special chapters, about sixty pages, on the histological examination of the parts of the organ of hearing in succession, passing from the auricle inward, which include, as indeed does the whole work, the latest authoritative information on the subject.

The importance of a publication of this character to the aural surgeon to whom "practice in dissection work is indispensable," is justly set forth by the author when, in his introduction to the original work, he says, "The complicated character of the structure of the organ of hearing, and the involved nature of its connections with the adjoining structures and cavities, are such that they can only be intelligently studied by frequent practice in the preparation of specimens and it is only by unremitting study and manipulation of such specimens that it is possible to obtain the degree of confidence necessary to produce satisfactory results when performing an operation in such close proximity to organs of vital importance.

Treatise on Diseases of the Ear. By D. B. ST. JOHN ROOSA, M.D., LL.D. Seventh revised edition. New York: William Wood & Co. 1891.

The seventh edition of this valuable text-book has fourteen new illustrations and about twenty pages of additional reading-matter. The text is substantially the same as in the preceding edition, the more important changes being the addition of a paragraph on the subject of the removal of the ossicula in cases of suppurative middle ear disease and an enlargement of the chapters on the diseases of the mastoid process and on necrosis of the temporal bone and its consequences, both of which, containing as they do the author's experiences as well as liberal quotations from other recognized authorities, well repay careful reading and add much to the value of the present edition.

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TUBERCULOSIS IN JERSEY CATTLE; TUBERCULIN AS A DIAGNOSTIC AGENT.

Some instructive reports by experts and a judicious editorial upon an outbreak of tuberculosis among a herd of Jersey cattle, owned near Philadelphia, are published in the *Medical News* (March 26, 1892). The herd, known as the Clairemont, was established about 1882–83, and springs from a number of imported cows bought at that time. Frequent additions to the herd have been made, from time to time, of animals bought in various places, and none but the choicest individuals have been selected, for which high prices have been paid. All of the leading strains of Jersey bulls have been used.

Every precaution has been taken to preserve the health of the stock and to increase their constitutional vigor. Inbreeding has never been practised, and the stables and animals have always been cared for in the best manner.

The herd has been regularly examined by experts, and the present outbreak of tuberculosis was recently discovered. In the rare cases in which the disease has heretofore been detected, the affected cattle have been destroyed at once, and their places in the stable disinfected.

The use of tuberculin as a diagnostic agent was an interesting feature in this outbreak. Dr. Pearson, of the veterinary department of the University of Pennsylvania, was requested, several weeks ago, to examine a cow in this herd which did not seem to be doing well, and found it suffering from tuberculosis. The animal was killed the next day, and the diagnosis was confirmed by the post-mortem examination. Thereupon he made a careful physical examination of the entire herd, and found five cows affected with the same disease, all of which were promptly destroyed. A short time after this, a fat cow that would not breed was killed for beef, and it was discovered to be in a highly tuberculous condition. This caused him to suspect that the disease might be more prevalent than he heretofore had reason to suppose, and with the object of detecting the affected animals it was decided to use tuberculin as a diagnostic agent. In all, seventy-nine cattle were tested with tuberculin, and of these thirty reacted in a manner that was interpreted as indicating the existence of tuberculosis. Six of these were slaughtered, and of this number five presented macroscopic evidence of the existence of tuberculosis: in regard to one animal there was some doubt, which a microscopic examination was expected to set at rest.

It was decided to kill all the suspected animals, to place the remaining healthy animals in disinfected stables, to have them frequently examined, and kept strictly apart from other animals.

The ultimate result in this instance should be instructive, as throwing further light upon the value of tuberculin for diagnostic purposes, and upon the possibility of thoroughly eradicating tuberculosis from a herd where it has once established itself. The example of the owner of the herd is a good one, and his action was at once public-spirited and intelligent.

This outbreak of tuberculosis calls to mind similar ones which have occurred from time to time among herds of Jersey cattle in this State — herds which, as with this Clairemont herd, were supposed to be under the best hygienic conditions. The questions of the ways by which tuberculosis is acquired, of the necessity for the inspection of meat and dairy products, of the assumption by the State treasury of the loss entailed by slaughtering infected animals, have occupied these columns at various times.

Last September we reviewed editorially the subject of tuberculosis in all its relations, as discussed at the International Congress of Hygiene; and, in the same and the preceding issue of the Journal, a paper, by the late Dr. J. A. Jeffries, upon the ways in which tuberculosis is acquired, was published.

Whilst indirect infection is probably the chief mode of infection, there is doubtless enough direct infection to make State inspection of meat and dairy products, and a system of adequate compensation desirable. It is easier, however, to affirm this general proposition than to define the conditions and limitations under which it should be exercised, or to find expert agents for the judicious and satisfactory execution of such provisions.

NEURALGIAS AND NEURALGIC AFFECTIONS.

At a recent meeting of the Medical College of Vienna, Benedikt read a paper on the above subject, in which he distinguished three kinds of neuralgias: (1) Of the nerve-trunks or plexuses; (2) of the nerve-roots; (3) of the terminations of the nerves.

In neuralgias of the nerve-trunks and plexuses there are not only pains during the attacks, but apart from the attacks there are painful points over the tract of the nerve. In most cases all the nerves which issue from a plexus are more or less affected.

The prognosis of idiopathic affections of the nerve-trunks and plexuses is very favorable when the specific treatment is applied from the first. Among the specific medicines, Benedikt mentions in terms of special approbation iodine and subcutaneous injections of phenic acid. The salicylates and antipyrine have a curative effect only when the natural duration of the affection is short. Narcotics should be given as little as possible, as they produce only a deceptive lull. The truly specific modes of treatment are galvanization and punctiform cauterizations. Benedikt compels the eschars following the cauterizations to suppurate for eight or ten days by means of an epispastic application, and never has recourse to more than one cauterization. This treatment is, in his estimation, so efficacious that when it fails one may affirm that there exists in the neighborhood of the nerve a lesion not yet appreciable, or a constitutional disease, and that this is the cause of the neuralgia.

Neuralgias of the nerve-roots are characterized by very intense intermittent pains without *points douloureux.* The nerve is painful to the touch, but this pain is alleviated by pressure. This variety of pain is met with in ataxia and in certain painful tics. These neuralgias at the commencement are unilateral; they denote often an alteration of the spinal meninges, in which case they do not coincide with neuralgias of the nerve-trunks and plexuses — while the eccentric idiopathic neuralgias are often associated with peripheral pains or invade the nerve terminations. The unilateral, eccentric, idiopathic neuralgias of the roots have no tendency to follow an ascending course. Galvanization employed against these neuralgias gives no result, while faridization *loco dolenti* exercises a calmative, but not curative, action. On the other hand, the electric cauterizations over the seat of these neuralgias have a very favorable action. The cauterization must be applied over the roots which contain the sensory fibres of the region affected.

In the neuralgic affections of the nerve terminations (arthralgias, aphalalgias) cauterization has also a very satisfactory effect. Faradization and the electro-static douche are very efficacious against migraine. As most patients cannot stand the treatment during the attack, it is better to carry it out in the intervals of the pains, beginning with three *séances* per week, then two, then only one; but the treatment must be persevered with a long time, from nine months to a year in many cases.

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THE WORK-VARIATION OF A CHILD'S HOUR OF STUDY.

The investigation of this question,[1] the results of which are published by Dr. Burgerstein, of Vienna, in a paper originally submitted to the Section on Infancy, Childhood and School Life, at the International Congress of Hygiene at London, in August last, was undertaken by him to determine the time during which a pupil should be kept at work continuously in one line of mental work. For this purpose two classes of girls and two classes of boys were selected; in all 162 children of from eleven to thirteen years of age. These children were kept at work upon simple mathematical problems (addition and multiplication) for one hour, the hour being divided into four periods of ten minutes each, with five-minute intervals of rest.

During the whole period these 162 pupils worked out 135,019 figures making 6,504 mistakes. It was found that the total number of calculations made by all the children increased, roughly speaking, 4,000, 3,000 and 4,000 in the different periods. During the third period of work, the increase of work done was not so great as during the other periods. The number of mistakes also increased 450, 700 and 350 in the different periods. Here again, during the third period, the quality of the work was at its lowest. From this experiment it would appear that children of the ages stated become fatigued in three-quarters of an hour; that the power of work gradually diminishes to a certain point during the third quarter of the hour, returning with renewed force in the fourth quarter. The author concludes that continuous work for children of these ages, even though the tasks are not difficult, should not last longer than three-quarters of an hour.

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MEDICAL NOTES.

The Woman's Medical School at Johns Hopkins University. — The trustees of the medical department of Johns Hopkins University received last May, about $111,000 as a preliminary endowment obtained by the Woman's Fund Committee, for the purpose of securing for women medical instruction at the University. They also received a promise of $100,000 to be paid in February of this year, on condition that the sum necessary to make up the half-million dollars should be raised by that time. The time is now past, and the money has not been raised.

A Plea of Insanity. — At a recent trial in Wisconsin, at which a number of men were indicted for murder on account of having taken part at a lynching case, the jury returned a verdict, finding that at the time of the lynching all of the defendants were insane, and therefore not guilty. They also found that since the crime was committed all but three had recovered their sanity, and were therefore discharged from custody.

Dr. Shibasaburo Kitasato. — Dr. Kitasato, who for six years has been doing bacteriological work in Berlin, largely in Koch's laboratory, and whose name has become widely known in connection with his work on immunity, has been recalled by the Japanese Government to take the direction of an Institute for Infectious Diseases in connection with the University of Tokio.

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[1] Die Arbeits-Kurve einer Schulstunde, von Dr. phil. Leo Burgerstein, oberreal Schulprofessor in Wien, etc. Hamburg and Leipzig: Verlag von L. Voss, 1891, p. 40.

Prof. W. T. Gairdner, of Glasgow. — This year Professor Gairdner completes a period of thirty years continuous service at the University of Glasgow, as Professor of the Principles and Practice of Medicine. A committee has been formed to place on record the esteem and regard in which he is held by his former pupils, by presenting to the university a portrait of Dr. Gairdner, and also to found a scholarship in clinical medicine in the university.

Russian Jews Stopped on the German Frontier. — Owing to the prevalence of typhus fever, the German Government has prohibited Russian Hebrew immigrants from crossing the frontier. In consequence, the Russian frontier towns have become very much crowded, and it is feared that typhus fever will spread through all of the border towns. Most of the immigrants who have been stopped were on their way to America.

Rigid Enforcement of Immigration Laws. — Acting under orders from the Assistant Secretary of the Treasury, no more immigrants will be allowed to land simply on the assurance from some society that they will not become public charges. Any one who does not possess $10, or who does not have a railroad ticket to his destination, will be detained and sent back to the country from which he came. It is said that under this rule the number of immigrants who may be sent back often amounts to as many as 500 on the days of the week when steamers are due.

Rabies in Paris. — According to the statistics of the Prefecture of Police, rabies has increased considerably during the past ten years. In 1880 there were 201 cases of canine rabies, and 61 persons were bitten. In 1891 there were 400 cases of canine rabies, and 143 persons were bitten.

The English Public Executioner. — Berry, who for some time has been well known in England as the public executioner, has resigned his position on account of the issuing of an order, authorizing medical officers of prisons to regulate the length of the drop required at executions. Berry has hanged two hundred criminals during the time in which he has held office. He has invented a few devices connected with the scaffold. He will now go on a lecture tour, and write a book.

New Publications. — With the month of March, the first copy of a new monthly appeared in Kingston, N. Y. It is to be known as the "*Practitioners Monthly*," and is edited by C L. Dodge, M.D. and J. Chambers, M.D. *Annales de la Policlinique de Lille*, a quarterly devoted to work done in the polyclinic at Lille, appeared for the first time in January. The Philadelphia *Polyclinic*, a journal of practical scientific medicine, edited by a committee of the Faculty and published quarterly by the Philadelphia Polyclinic and College for Graduates in Medicine, appears for the first time in March.

A Prodigy Calculator. — The Académie des Sciences, in Paris, have been examining Jacques Inaudi, the celebrated calculator. The most difficult problems in square and cube roots were given to him besides many such questions as, "If a person were given five francs every minute since the year one, how long would it be before he had the amount paid by the French to the Germans?" All questions asked him, he answered in an incredibly short space of time.

Anti-Corset Meeting. — We learn from a foreign contemporary that for a long time there has been a strong feeling in America against the corset, especially among the women of Canada. Recently in a town in Ottawa a largely attended anti-corset meeting was held, at which all the ladies present made a vow that they would no longer be slaves to that particular fashion. In the vicinity of the building in which the meeting was held, a large bon-fire was built, in which all the corsets belonging to the party were thrown.

Infant Mortality in France. — At a recent meeting of the Society for the Protection of Children in France, Dr. Rochard (Chairman) stated that France loses every year 250,000 infants, and that out of this number there are at least 100,000 whose lives could be saved with intelligent care.

The Toxicity of the Blood in Cases of Acute Suppuration. — Nissen[1] reports a number of experiments in which the blood of persons suffering from suppuration was injected subcutaneously and into the peritoneal cavity of mice. In all cases, blood from patients in the same clinic, but without suppuration, was injected as a control experiment, but in none of these cases was any effect produced upon the mouse. From the patient with suppuration, the blood was taken from a part of the body distant from the seat of the pus. In most of the cases, the mouse died within from two or three to twenty-four hours after a series of characteristic symptoms. After death, the mice showed hæmorrhagic exudations, hepatization of large portions of the lung, enlargement of the spleen, and other indications that the injected poison may have been fatal by its action upon the blood of the animal.

BOSTON AND NEW ENGLAND.

Mortality for the Week. — The death-rate for the past week in Boston has been unusually high, the total number of deaths reported having been 237, as against 196 the corresponding week last year, making the death-rate for the week 26.8. The number of persons who died over sixty years of age was 45.

Danger from Fumigation. — In a small town, not many miles distant, a house was found to be on fire a short time after it had been fumigated. The following explanation, given at the investigation as to the cause of the fire, is an extract from the local paper: "The doctor thinks the fumes drove the rats from their holes, and becoming blinded, they jumped into the pan of burning sulphur, which adhered to their skins, and the rats returning to their holes, carried the blazing sulphur on their backs, thus setting the house on fire."

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[1] Deutsche Med. Woch., No. 2.

Massachusetts Legislature. — The Committee on Public Charitable Institutions reported a bill authorizing the Governor to appoint seven trustees to erect at Medfield an asylum, at a cost of $500,000, for one thousand chronic insane. The same committee reported an appropriation of $10,000 for buying land and buildings at Westborough Insane Asylum. It was moved in the House to substitute a bill for the report of the Committee on Public Health leave to withdraw on the repeal of the compulsory vaccination laws. The substitute bill provides that school committees may exercise their discretion in allowing unvaccinated children to attend school. The matter was put upon the table. The same committee also reported inexpedient on the order prohibiting the manufacture of household articles in which arsenic is used. The Committee on Judiciary reported a bill providing that no attorney-at-law shall solicit employment for the purpose of enforcing a claim for damages against a person or corporation based on the negligence of any person or corporation. To violate the act, the solicitation must take place outside of the attorney's office.

Trichinosis in Coleraine, Mass. — The epidemic of trichinosis which was reported a few weeks ago from the town of Coleraine is at an end, the last victim having died of the disease. There were in all four deaths, and about forty cases, most of which occurred in one large tenement block. An examination of the muscles of the case which has recently died showed them to be filled with trichinæ.

NEW YORK.

A Death from Chloroform occurred in the practise of Dr. A. H. Goelet on March 20th. The patient was a man of middle age, and the anæsthetic was given by Dr. E. N. Delphy, in order to perform an amputation of the finger for gangrene.

A Fall from a Window. — A man, thirty-four years of age, recently sprang, while delirious, from the window of an apartment on the third floor of his residence in Harlem, and his wife, while endeavoring to prevent him from doing so, was herself drawn out, and fell with him a distance of forty feet to the stone flagging below. Strange to say, neither were killed, and the husband was but little hurt. The wife was somewhat more severely, but not fatally, injured.

Typhus Fever. — In his report on the health of the city for the week ending March 19th, Dr. John T. Nagle, Deputy Registrar of Records, says: "The deaths from typhus during the week were 13, which makes a total of 20 deaths from this disease since January 1st. Of the number of fatal cases, four were employees of the Board of Health, two employees of Riverside Hospital, North Brother Island, one of the Reception Hospital, and a policeman of the sanitary squad. These contracted the disease while in the service of the Board of Health, and their lives were heroically given as a sacrifice to their zeal in the discharge of their duties in guarding and protecting the public from this terrible infection. Besides the four employees who have died in its service, there are still three of the employees of the department sick with typhus fever — one a sanitary policeman, and two employees of the Riverside Hospital, who contracted the disease while in the discharge of their duty. The disease, owing to the excellent and vigorous management of the Board of Health, seems to be stamped out, and the city saved from a typhus epidemic, which would not alone destroy many valuable lives, but would injure the commercial prosperity of the city. A singular observance of this disease was the very high percentage of deaths of the employees of the Board of Health, who contracted the disease from the Russian immigrants, and the low death-rate among the immigrants themselves. Whether this is due to enervation caused by overwork or to national characteristics, is not clear at present." Within a few days after this report the number of deaths from typhus was swelled to 29. As the total number of cases reported up to this time was 184, this is a mortality of 17¼ per cent., and it may yet be increased to something like 20 per cent. by deaths among the quarantined patients and the attendants at North Brother Island.

Miscellany.

DRUNKENNESS AND CRIME.

Sir Henry James,[1] in response to a request for his opinion whether there is any general principle which is accepted by judges to regulate their decisions in cases where drunkenness seems to be an incentive to crime, has written a letter, in which he summarizes his views to the effect that in determining the legal character of the offence committed, drunkenness may be taken into account where it has established a condition of positive and well-defined insanity, or if it produces a sudden outbreak of passion occasioning the commission of crime under circumstances which, in the case of a sober person, would reduce the offence of murder to manslaughter; but in the case of minor assaults and acts of violence it can never form any legal answer to the charge preferred, but it may aggravate or mitigate the character of the act committed, probably aggravate it. As to the effect that should be given to drunkenness when determining the amount of punishment to be inflicted, he thinks no general rule can be laid down. Its existence may be considered, and may tend either in the direction of increasing or diminishing the punishment.

LESIONS PRODUCED BY THE TOX-ALBUMEN OF DIPHTHERIA.

Welch[2] makes a further communication upon the work done under his charge in connection with the bacillus of diphtheria. Inoculation of the tox-albumen, free from bacilli and sterilized, were injected subcutaneously into guinea-pigs. The animal not only died but presented certain lesions in various parts of the body.

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[1] Editorial, British Medical Journal, January 16th.
[2] Johns Hopkins Bulletin, March.

In cases in which animals have been inoculated with the bacilli, death usually occurs in one or two days. In inoculation with the toxic products alone, the inoculation period exceeded three weeks. The author concludes that it may be considered as established that the toxic products and not the bacilli themselves invade the tissues in diphtheria. This fact would at once suggest that the general lesions, (those produced at a distance from the seat of inoculation in animals and the situation of the local process in human beings), were the effects of the soluble poison diffused through the body. Hence it was desirable to demonstrate this assumption experimentally; and it is not unimportant to know that the lesions in the tissues produced by the bacilli and the toxic principle on the one hand and the toxic principle alone on the other are in perfect correspondence with each other. And, moreover, it would seem not to be superfluous to emphasize the occurrence of definite focal lesions in the tissues of the body produced by a soluble poison circulating in the blood.

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THERAPEUTIC NOTES.

Disinfection of the Mouth. — Dellevie[1] calls attention to several conditions, in which the mouth should be made as aseptic as possible. Several infectious micro-organisms are capable of living for indefinite periods in the mouth, in condition to carry infection if the opportunity presents itself. He has found that the following antiseptics may be used as mouth washes without injuring the teeth: corrosive sublimate 1 : 1500, B. naphthol 1 : 1000, thymol 1 : 1000, salicylic acid 1 : 350, saccharin 1 : 250, benzoic acid 1 : 100.

Benzosol, which has been introduced in Germany as a substitute for creasote, for the treatment of tuberculosis, is a white powder which is a chemical combination of guaiacol with benzoic acid.[2] It is said to possess all the therapeutic properties of creasote without its disadvantages. Hughes administers it as follows:

℞	Benzosol	gr. lxxv.	
	Ess. menthæ piperitæ . . .	gtt. ij.	M.
	Div. in trochisci no. x.		

Sig. One or two tablets, immediately after meals, three times daily.

For a week, the patient takes three tablets daily; during the next three weeks, six are taken daily; during the fifth week, three are again taken daily; finally, during the sixth week, none are taken; then the same course is followed over again.

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ACTION OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, UPON THE DEATH OF DR. D. HAYES AGNEW.

A special meeting of the College of Physicians was held to take action upon the death of Professor Agnew who last year was President of the College. Dr. S. Weir Mitchell, President, occupied the chair. In opening the meeting he said:

"I have only to announce officially to the Fellows what is already known — the death of D. Hayes Agnew, sometime President of this College, and a Fellow since 1859.

"I leave to others to express in full the feeling of regret with which all medical men have heard of this loss. My own relations were those of friendly acquaintance and more or less constant official connection as a Trustee of the University. I was made to feel that Dr. Agnew carried into his medical and official relations all the best qualities of a strong and vigorous manhood, and that the faith and creed by which he lived made itself distinctly felt wherever he went and whatever he did.

"Dr. Agnew seemed to me one of those well-balanced characters to whom the most brilliant success and the esteem of a nation bring no element of moral weakness.

"As a hard-working teacher of anatomy, from whom I rented a laboratory when neither of us was much known of men, I used to see him daily. In the closing years of his life of vast utility I was often called upon, as Chairman of the Committee on the Medical Department of the University of Pennsylvania, or as Vice-President of this College, to act and work with him. In the long interval of years between our early work and achieved success, we met but rarely, or as busy doctors do meet, but on renewed and closer intercourse I found him still the same man — stronger, more competent, but morally unchanged from what he was when we first met.

"As President of this ancient College I like to think of him as continuing the long line of illustrious physicians who have given to this chair an ever-growing value. Dr. Agnew was, I find, the third surgeon who has had the honors of your Presidency. William Shippen, 1805, was second President; Thomas Hewson in 1835, succeeded as sixth President. Then, save Dr. Ruschenberger, a naval surgeon, all have been physicians until Dr. Agnew's date. He became the thirteenth President in 1889, and served his full term."

This was followed by brief addresses by Dr. John Ashhurst, Jr., Dr. W. W. Keen, and Dr. Alfred Stillé, who submitted the following minute, which was adopted:

"The death of Dr. Hayes Agnew, recently President of this College, in the seventy-fourth year of his age and after a life crowned with honor and usefulness, calls for an expression of the sense entertained by the College of the gravity of the loss which it suffers, in common with the profession he adorned, the charitable institutions he served, and the community in which his skill did so much to lessen suffering and death.

"He began his professional life with no adventitious aid, yet by incessant industry, indomitable preservance and singleness of purpose he attained to its highest rank. No temptation distracted his attention from the goal of his life; neither extraneous sciences, nor general literature, nor the allurements of art, nor the pleasures of society. The undivided strength of his mind and his affections were devoted to enlarging the domain of surgery, not only in its operative methods, which he always subordinated to the welfare of his patients, but also in preparing for his profession a literary monument that might speak for him when his voice should be no longer heard.

"His minute acquaintance with anatomy, and his ambidextrous skill enabled him to perform with ease to himself and safety to his patients, operations which less accomplished surgeons hesitated to undertake.

"He possessed a certain magnetism of manner, quite independent of formality, that evidently proceeded from the heart, and drew all hearts to himself. Never frivolous, but always cheerful, he was dignified, grave and earnest, making all who heard him as a teacher and speaker, or in familiar intercourse, recognize in him, above all other things, the upright man. For he possessed the eloquence of conviction and the force of absolute honesty in all his statements, and thereby drew to himself as enthusiastic admirers and disciples the successive classes of students whom he taught."

Professor Agnew was in the seventy-fourth year of his age. He suffered some months since with influenza, with resulting bronchitis, but believed that he was recovering from it, and was about as usual, attending to his patients, when about a week before death he grew worse. It was not thought that the illness would be fatal until two days before death occurred, when anginose attacks supervened, and he finally died of uræmia. At the autopsy it was found that his suffering was partly due to atheroma of the cardiac valve and coronary arteries. There was marked renal degeneration, and pelvic inflammation caused by a renal calculus.

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[1] Deutsche Med. Zeitung, February 22d.

[2] La Semaine Médicale, January 13th.

The funeral services were held at the Second Presbyterian Church, of which he had been a member, and were largely attended by his medical friends, among whom were noticed Dr. A. Jacobi, of New York, and Dr. Hunter Maguire, of Richmond, Va.

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OBITUARY. JOHN AMORY JEFFRIES, M.D.

JOHN AMORY JEFFRIES, M.D., M.M.S.S., died of pneumonia, in Boston, March 25th, aged thirty-two years. Dr. Jeffries graduated from Harvard College in the class of 1881, and from the Medical School in 1884. After a year spent in Europe he settled in Boston, where he had since practised. At the time of his death he was Physician in the Department of Nervous Diseases at the Boston Dispensary and Assistant Physician to the Nervous Department of the City Hospital. He was a member of the American Neurological Association, the American Pediatric Society, the American Association for the Advancement of Science. the American Association of Naturalists, and of several Boston medical and scientific societies. He had written several papers both on medical and on scientific subjects, and had been a frequent contributor to the JOURNAL.

Dr. Jeffries had, from an early age, been a student of natural history. Even before he entered college he was well known as an ornithologist. In college he did much original work and received highest honors in natural history. After graduating from the Medical School his previous training and his familiarity with the microscope led him to devote what time he could spare to bacteriological study, in the School laboratories. In practical medicine he was especially interested in nervous disease.

He was a hard worker. As a student of science his judgment was good, his reasoning clear, and his methods thorough; he was not led astray by enthusiasm. Had he lived he would undoubtedly have made valuable contributions to scientific medicine.

He leaves many friends both in and out of the profession who sincerely mourn his loss.

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Correspondence.

FEMORAL AND VENTRAL HERNIA IN WOMEN.

NEW YORK, 18 East 32d St., March 22, 1892.

MR. EDITOR: — Having read the recent paper upon "Femoral and Ventral Hernia in Women"[1] by Dr. H. O. Marcy, of Boston, I beg the courtesy of your columns for a few remarks suggested by that paper; and I trust they will be received by the author of it in the same friendly spirit in which they are given.

Without attempting any thorough review of the paper, I desire simply to point out certain defects, or, perhaps better, certain omissions which to my mind seriously weaken the arguments which Dr. Marcy has set forth in favor of operative procedure in the treatment of femoral and ventral hernia.

The first and most *important* omission is in regard to the result of his operations. Although he states that he "began to use the buried animal suture in operating for the cure of hernia in 1871," and has continued to use it since, nothing is said as to results other than the general statement, that, so far as he has been able to learn, there has not been a single recurrence. Without giving the number of cases operated upon, as well as the number followed beyond the period when relapses may occur, such general statements are valueless so far as any scientific estimate of the efficacy of the operation, is concerned.

Although Dr. W. T. Bull's results are seriously criticised, it is well to bear in mind the fact that his is the only large collection in this country, where the cases have been followed a sufficient length of time to enable one to draw satisfactory conclusions. In his article, "On the Radical Cure of Hernia, with Results of One Hundred and Thirty-four Operations,"[2] Dr. Bull stated that with the methods he had tried there was no prospect of attaining a radical cure of any form of hernia; yet he admitted that the attempt to cure was desirable and every worker in this field has been watched with the greatest interest, in the hope that some one would ere long discover the prize that others had looked for in vain.

Yet one who is familiar with the literature of hernia, who has followed the history of the so-called "Radical Cure," and has seen one method after another evolved, run a similar course of praise, approval, neglect, and then after a brief life-history pass into the list of obsolete operations — such a one will be pardoned for being somewhat skeptical, or at least not over-sanguine, when a new method is proposed, particularly when that method has not been subjected to the test by which the preceding methods have been tried and found wanting, namely. the test of time.

The history of Wood's operation which has been more extensively tried, and received perhaps more nearly universal approval than any other, is significant. To quote a recent writer: "Many tried it, and as now with the open method, asserted their success; but Mr. Kingdon of the London Truss Society demolished their pretensions one after another by the stern logic of facts, and the men who were reported as successful examples of the radical cure were fitted by him with trusses. Time has proved the truth of its failure."

It seems to me that no new method should be entitled to serious consideration until it has been subjected to this test of time.

It must not only show, as many other methods have shown, seventy, eighty, or ninety per cent. of so-called "cures"; but, sufficient time having intervened, those "cures" must be followed up, and shown not to have relapsed. Dr. Bull, in his paper upon "Cases of Hernia which have Relapsed after Various Operations for Radical Cure,"[3] emphasized the importance of this element, time; and he showed that until the five-year limit had been passed a *cure* could not be asserted with confidence. During the past year upwards of fifty cases of relapsed inguinal and femoral hernia have been treated at the Hospital for Ruptured and Crippled. Among these were many that had been published as "Cures."

In regard to the method of operating upon femoral hernia advocated by Dr. Marcy. there is nothing essentially new in this method. The principle of closing the femoral canal by means of buried sutures, both silk and animal, has been repeatedly tried. and the recent statistics of hernia operations at Billroth's Klinik, from 1877 to 1889, reported by Haidenthaller,[4] are directly in point. Of fifty-four cases of femoral hernia treated in part by suture of the canal, and in part by simple excision of the sac and closure of the external wound, thirty-seven and one-half per cent. of the cases in which the canal had been sutured relapsed, while only twenty per cent. of recurrences followed the simple excision of the sac.

If better, or even as good, results follow the simpler operation. it may well be doubted if it be wise to attempt a complicated suture which in the hands of any but the skilled anatomist would add to the risk of the operation.

The principle of operating upon most cases of ventral hernia is open to serious objections. The risks associated with conservative treatment in these cases are. I think, greatly over-estimated. In a very large number of cases of adherent and irreducible umbilical hernia treated at the Hospital for Ruptured and Crippled, strangulation is an extremely rare occurrence. This, added to the fact that ventral hernia, by no means infrequently follows abdominal section, even in the hands of the best surgeons and in favorable cases, makes it reasonable to doubt the advisability of extending the "Radical Cure" to the class of cases in question.

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[1] Reprint from Transactions of American Association of Obstetricians and Gynecologists, 1891.

[2] Medical News, July 5, 1890.

[3] New York Medical Journal, May 30, 1891.

[4] Archiv. f. Klin. Chirug., 1890.

In conclusion, let me say that I hope this will not be regarded as an attempt to discourage the operative treatment of hernia in general, but only an effort to emphasize the importance of submitting all methods of operation, to the test of time, and of judging their relative merits by the number of relapses. Very respectfully yours,

William B. Coley, M.D.,

Assistant Surgeon to the Hospital for Ruptured and Crippled of New York (Hernia Department).

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INDUCEMENTS FOR ADVERTISING.

Brookside, Mass., March 23, 1892.

Mr. Editor: — Well knowing your progressive spirit, which enables you to keep the Journal abreast of the times, I send you the enclosed, which may supply a few hints for the advertising department.

Louisville, Ky., March 17, 1892.

Dear Doctor: — If you will advertise with us, we will take three-quarters of the amount of advertising out in board and medical services, and one-quarter in cash; the boarder to be a deserving and agreeable one. We could not well enter into an arrangement differing from the above unless you desired to pay all cash, in which case you will please notify us of your desire. Independent from the above, could you propose a compensation for any business we might send you through personal efforts. We reach every one of the 3,117 doctors in Kentucky and circulate extensively throughout ten Southern States. Enclosed please find rates. Send for a sample copy. It is a stylish one. Observe its editorial management and the good business it contains. Although you are some distance from here, the reputation of your institution should fill it with patients from all parts of the country. A reply by return mail will greatly oblige,

Your friends, The M. P. Co.

Board and washing will be exchanged hereafter for half-page advertisements. The rates will vary according as the person to be boarded and washed is simply weak-minded or very much excited. In the latter case I should expect a cut to be furnished with the advertisement. Drivelling idiots with large appetites will not be admitted. Towels and soap furnished by the management, but patients are expected to bring their own water. How does this kind of exchange strike you? Yours truly, C. W.

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A GERM MANIAC.

New York, March 22, 1892.

Mr. Editor: — I enclose some verses entitled, "A Germ Maniac," which were written when taking a course in bacteriology in the Michigan University Medical School.

For five long hours I work on germs
  In hanging drop of rich beef-tea;
Germs which, beneath the microscope,
  I strain my eyes to see.

I bake them, boil them, roast them too,
  Or poison those I find;
I steam them, cage them, then go home,
  And leave the germs behind.

Behind! Oh woe, oh woe is me!
  They go where'er I go, —
Before, behind, without, within,
  Around, about, below.

Thousands and thousands in my mouth,
  And thousands in my hair!
I fear to breathe them in my lungs,
  With every breath of air.

I know they rest upon my cheek,
  I brush them with my hand;
They're on the hand! — I wash them off;
  But water is their land.

I seek the cooling air of night;
  The earth is dark, the hour is late;
The stars upon the heavens lie,
  Like germs upon a plate.

Germs, germs by day and germs by night,
  Germs in my brain must be,
Unless I think of something else
  They'll make a "*stick*" of me!

I have felt that they might express enough of the universal feeling of beginners in bacteriological studies to find a place in your Journal. Respectfully, H. B.

RECORD OF MORTALITY

For the Week ending Saturday, March 19, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	885	329	16.83	20.46	2.75	2.09	4.73
Chicago . . .	1,099,850	448	197	15.84	24.86	1.32	.66	7.04
Philadelphia .	1,046,964	—	—	—	—	—	—	—
Brooklyn . .	806,343	364	134	17.08	19.04	2.52	.56	9.24
St. Louis . . .	451,770	185	73	14.04	11.34	.54	4.86	2.16
Boston . . .	448,477	223	70	9.00	20.25	2.25	.90	3.60
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	119	47	15.48	25 80	.86	2.58	8.60
Cleveland . .	262,000	109	44	10.12	13.80	—	—	6.88
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	107	53	6.51	26.04	.93	—	3.72
Milwaukee . .	240,000	81	32	29.52	11.07	4.92	1.23	19.68
Washington .	230,392	104	33	10.56	20.16	.96	1.92	.96
Nashville . .	76,168	38	16	—	21.04	—	—	—
Charleston . .	65,165	25	2	4.00	12.00	—	—	—
Portland . . .	36,425	14	1	—	21.42	—	—	—
Worcester . .	84,655	29	11	17.25	—	—	3.45	6.90
Lowell . . .	77,696	44	12	6.81	18.16	—	—	—
Fall River . .	74,398	30	10	—	29.99	—	—	—
Cambridge . .	70,028	27	10	18.50	14.80	—	3.70	11.11
Lynn	55,727	26	4	3.85	26.95	—	—	3.85
Lawrence . .	44,654	28	4	14.28	14.28	—	—	—
Springfield . .	44,179	16	4	12.50	12.50	—	—	12.50
New Bedford .	40,733	17	4	—	5.88	—	—	—
Salem	30,801	19	3	5.26	10.52	—	—	5.26
Chelsea . . .	27,909	13	4	7.69	24.07	—	—	7.69
Haverhill . .	27,412	9	3	—	11.11	—	—	—
Taunton . . .	25,445	9	5	11.11	11.11	—	—	—
Gloucester . .	24,651	6	1	16.66	16 66	—	—	—
Newton . . .	24,379	11	2	9.09	18.18	—	—	9.09
Malden . . .	23,031	4	0	—	—	—	—	—
Fitchburg . .	22,037	5	2	—	20.00	—	—	—
Waltham . .	18,707	2	1	—	—	—	—	—
Pittsfield . .	17,281	4	0	25.00	—	25.00	—	—
Quincy . . .	16,723	4	1	25.00	—	—	—	—
Northampton .	14,990	6	3	16.66	33.33	—	—	16.66
Newburyport .	13,947	7	4	—	—	—	—	—
Medford . . .	11,079	5	1	—	—	—	—	—
Hyde Park . .	10,193	3	1	—	—	—	—	—
Peabody . . .	10,158	2	0	—	—	—	—	—

Deaths reported 3,028: under five years of age 1,121; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 452, acute lung diseases 601, consumption 331, diphtheria and croup 171, scarlet fever 54, typhoid fever 46, diarrhœal diseases 43, measles 33, erysipelas 23, cerebro-spinal meningitis 22, whooping-cough 16, typhus fever 13, malarial fever 6, puerperal fever 3, small-pox 2.

From typhoid fever Chicago 18, New York 7, Springfield 4, Brooklyn, Cincinnati and Washington 3 each, St. Louis 2, Cleveland, Pittsburgh and Charleston 1 each. From measles New York 24, Brooklyn 6, Chicago 2, Cleveland 1. From erysipelas New York 8, St. Louis 4, Boston 3, Chicago and Brooklyn 2 each, Milwaukee, Worcester, Cambridge and Quincy 1 each. From cerebro-spinal meningitis Chicago 7, New York 6, Brooklyn and Washington 2 each, St. Louis, Cleveland, Worcester, Taunton and Gloucester 1 each. From whooping-cough St Louis 4, New York 3, Chicago, Boston and Washington 2 each, Brooklyn, Cincinnati and Pittsburgh 1 each. From typhus fever New York 13. From malarial fever New York and Brooklyn 3 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending March 12th, the death-rate was 22.9. Deaths reported 4,469: acute diseases of the respiratory organs (London) 454, whooping-cough 170, measles 113, diphtheria 48, diarrhœa 42, fever 15, scarlet fever 13, small-pox (London and Liverpool 2 each, Oldham 1) 5.

The death-rates ranged from 16.5 in Newcastle-on-Tyne to 32.8 in Swansea; Birmingham 20.5, Bradford 24.7, Hull 19.9, Leeds 23.6, Liecester 19.7, Liverpool 30.0, London 22.1, Manchester 27.2, Nottingham 25.7, Portsmouth 19.1, Sheffield 19.9.

METEOROLOGICAL RECORD,

For the week ending March 19, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...13	29.89	27	32	21	49	43	46	W.	W.	21	20	C.	C.	
M..14	29.98	21	27	14	45	45	45	W.	W.	25	21	C.	C.	
T..15	30.12	24	31	17	59	52	56	S.W.	W.	15	20	C.	C.	
W. 16	30.33	24	33	15	52	61	56	W.	N.	10	10	O.	C.	
T..17	30.28	26	35	16	58	41	50	N.W	N.	9	5	F.	F.	
F..18	29.77	29	35	22	100	100	100	E.	N.E.	20	19	N.	R	1.35
S..19	29.41	31	35	27	90	46	68	S.W.	S.W.	24	21	N.	C.	.02
☞	29.99	26	33	19	65	55	60			18	17			.20

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. | Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 19, 1892, TO MARCH 25, 1892.

Captain Benjamin Munday, assistant surgeon, U. S. A., granted leave of absence for one month with permission to apply for an extension of one month.

First-Lieut. Theo F. De Witt, assistant surgeon, U. S. A., granted leave of absence to include May 16, 1892, at which date his resignation has been accepted by the President to take effect.

PROMOTIONS.

Lieut-Col. Joseph C. Bailey, assistant medical purveyor, to be surgeon with the rank of Colonel, March 9, 1892, *Vice* Norris retired from active service.

Major William D. Wolverton, to be assistant medical purveyor, with the rank of Lieut-Col., March 9, 1892, *Vice* Bailey promoted.

Captain John O. Skinner, assistant surgeon, to be surgeon, with the rank of Major, March 9, 1892, *Vice* Wolverton promoted.

APPOINTMENTS.

To be assistant surgeons with the rank of First-Lieut , Francis A. Winter, of Alabama, March 9, 1892, *Vice* De Hanne retired from active service. William E. Purviance, of Illinois, March 9, 1892, *Vice* Steinmetz, retired from active service.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 26, 1892.

A. A. Hoehling, medical inspector, ordered as president, Naval Medical Examining Board.

J. L. Neilson, surgeon, ordered as member and recorder of Naval Medical Examining Board.

T. C. Walton, medical inspector, granted six months' extension of leave, with permission to remain abroad.

Charles Perry Bagg, of Los Angelos, Cal., commissioned an assistant surgeon in the Navy.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF PHYSICAL EDUCATION.

The Seventh Annual Meeting of this Association will be held April 7–9, 1892, at the Drexel Institute of Art, Science and Industry, Philadelphia.

Five sessions of the American Association for the Advancement of Physical Education will be held at the Drexel Institute, beginning on the evening of Thursday, April 7th, which evening will be devoted to an address by the President of the Association, and to a reception given by the Drexel Institute to the members of the Association and invited guests. At the second session, on Friday morning, April 8th, topics of a general nature will be considered. The afternoon session on Friday will be devoted to papers and discussions (*a*) on Delsartism and its Relations to Physical Education, and (*b*) on the Athletic Question. The evening of Friday will be given up to an Exhibition of School Gymnastics. The fifth public session, on Saturday morning, April 9th, will be devoted to the consideration of some Educational Aspects of Physical Training. Free discussion of all papers will be invited.

The Pennsylvania Railroad Company offers special rates to parties of fifty or more.

The Continental Hotel, Philadelphia, which offers a per diem rate of $2.50 (American plan), will be the headquarters for visiting members of the Association.

A cordial invitation has been given to the members of the American Association for the Advancement of Physical Education, by the Woman's College, the Bryn Mawr School for Girls, and the Maryland Asylum for the Blind, all of Baltimore City, Maryland, to visit and inspect the gymnasia of the above-mentioned institutions on Thursday, April 7, 1892.

Members may arrange to accept the Baltimore invitation, and proceed to Philadelphia in season to attend the first public session of the Seventh Annual Meeting of the Association at 8 P. M.

Inquiries and applications for membership may be addressed to the Secretary of the Association, at Cornell University, Ithaca, N. Y., to the President, 5 Brimmer Street, Boston, Mass, or to Mr. Thomas, Chairman of Local Committee of Arrangements, Girard College, Philadelphia.

Edward M. Hartwell, *President*.
Edward Hitchcock, Jr., *Secretary*.

SOCIETY NOTICES.

Boston Society for Medical Observation. — The annual meeting will be held Monday, April 4, 1892, at 8 o'clock, at 19 Boylston Place.

Dr. W. H. Baker: "Hypertrophic Elongation of the Cervix Uteri, A new operation for its relief." Discussion by Drs. C. P. Strong, G. H. Washburn and F. H. Davenport.

Dr. C. J. Blake: "Acute Congestion of the Upper Portion of the Tympanum."

Election of officers.

Election of honorary and associate members.

Report of auditing committee.

John C. Munro, M.D., *Secretary*.

Surgical Section of the Suffolk District Medical Society. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, April 6, 1892, at 8 o'clock.

Dr. Alfred Worcester, of Waltham, will report cases of Appendicitis, and will urge early operation.

Dr. J. W. Elliot and Dr. M. H. Richardson: "Conclusions from a Study of Cases of Appendicitis."

Dr. E. O. Otis: "A Case of Broken Neck with Autopsy."

Dr. W. L. Walton will report additional cases of Cervical Dislocation, with Recovery, and will show photographs illustrating the characteristic deformity.

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

RECENT DEATHS.

J. Robert Embree, M.D., died in Colorado Springs, on March 20th, aged thirty-three years. He graduated from the College of Physicians and Surgeons in New York, in 1883. He served as house-surgeon at the Chambers Street Hospital for three years and later as physician at the New York Hospital.

John Amory Jeffries, M.D., M.M.S.S., died March 25th, aged thirty-two years.

David C. Comstock, M.D., of New York City, died March 24th, aged fifty-two years.

Ledyard Van Rensselaer, M.D., of Burlington, N. J., died March 24th, aged forty-eight years.

Carl Crede, M.D., Professor of Obstetrics at the University of Leipzig, died March 14th, aged seventy-two years. He had achieved a world-wide fame in obstetrics, his name being associated especially with a method of expressing the placenta.

BOOKS AND PAMPHLETS RECEIVED.

Laparotomy under Cocaine. By Emory Lanphear, M.D., Ph.D., Kansas City, Mo.

Are Inebriates Curable? By T. D. Crothers, M.D., Hartford, Conn., Superintendent Walnut Lodge Hospital, Hartford, Conn.

The Indications for Colotomy. By Charles B. Kelsey, M.D., New York. Detroit, Mich.: George S. Davis. Reprint. 1892.

Original Articles.

NOTES ON TYPHOID FROM 676 CASES ADMITTED TO THE BOSTON CITY HOSPITAL IN 1890 AND 1891.[1]

BY A. L. MASON, M.D.

As typhoid fever is chiefly a hospital disease, few physicians being called upon to treat a large number of cases in their private practice, it is interesting from time to time to compare the hospital reports from various sources with reference to the average results attained, so that by the light of general experience and progressive therapeutics we may try to determine how far our methods may be improved, and whether it is a duty to insist upon any systematic plan of treatment with the hope that a further saving of life may be effected as has been elsewhere claimed. I refer especially to the bath-treatment of Brand, and to intestinal antisepsis. With the exception of 87 cases reported by Drs. Edes and Stedman, in the Boston City Hospital Reports, Vols. II, III, Brand's system of immersion in the cold bath has not been adopted at the City Hospital, but pyrexial symptoms have been met by cold sponging and affusions, with the internal administration of antipyretics, antiseptics and tonics. Such other dietetic, stimulating and symptomatic measures have been applied as each individual case has demanded.

With the co-operation of my colleagues and the valuable assistance of Dr. Augustus S. Knight, who has given much time and attention to this subject, I am able this evening to present the results in a series of cases extending through the last two years.

During 1890 and 1891, 676 cases of typhoid fever were entered upon the records of the City Hospital. Of these, 70 were fatal, 10.4%. This includes all cases, mild, moribund and doubtful, which entered the hospital during those years.

The diagnosis, "typhoid fever," is made provisionally in a certain number of cases which result fatally, but which present symptoms by no means always typical of that disease, some entering in a moribund, others in a delirious or unconscious state. Of such cases there were 18 in the present series, 15 moribund, that is, dying within three days after admission, and at least three of doubtful diagnosis. There were autopsies in three of them only, and where post-mortems are few, owing to the law which requires the written consent of friends, verification of the diagnosis is often impossible. Indeed, there were but 15 autopsies out of the 70 fatal cases, therefore the notes which follow must be mainly clinical rather than pathological.

During the same period, 47 cases were classed as "febricula," a diagnosis which probably covers some abortive typhoids.

In 33 cases, according to the charts, defervescence took place before the sixteenth day, but the date of commencement was often inexactly determined, and these cases, which were entered in the books as "typhoid fever," are included in the series.

So many accidental circumstances affect the result in typhoid fever that it seems almost impossible to determine numerically the proportion of recoveries which may be due to therapeutic measures. Such factors are the age, sex, and previous condition of the patient, the period of the disease when he comes under treatment, and the concurrence of other affections which lessen the chances of recovery. The virulence of the disease may vary at different times and in different countries, so that no practical conclusions can be drawn from a small number of cases. How large that number should be in order to eliminate chance is also uncertain.

Thus if we divide our 676 cases into thirteen series of 50 cases each, it is found that the mortality in the different series varied from 6% to 20%.

Between six series of 100 consecutive admissions each the death-rate ranged from 6% to 14%; whereas three series of 200 cases each differed by one per cent. only, namely: 10%, 10.5% and 11% respectively. But in two series of 300 cases each there was a difference of more than two per cent in the mortality, namely: 9⅓% and 11⅔% respectively.

In the hospital there are three medical services to which the cases, as admitted, are allotted in turn. To show still further the fallacy which may arise from the attempt to draw conclusions from small numbers of cases I may state that one of the services received 54 *consecutive cases without a death.* Six of these patients had relapses. Again there were:

31	cases	without a death.			
42	"	with one death,	equal to	2.4	per cent.
30	"	" one death,	"	3.3	"
46	"	" two deaths,	"	4.3	"
39	"	" one death,	"	2.5	"

242 cases, with five deaths, equal to 2 per cent.

These figures do not compare unfavorably with some results of which we read as having been brought about by Brand's method in no larger numbers of cases. But as before stated the mortality in our whole series was 10.4%.

For purposes of comparison, I have selected the very interesting statistics of Dr. F. E. Hare, of the Brisbane Hospital, Queensland,[2] as being impartial, logically drawn up, and relating to a sufficient number of cases to admit of practical conclusions. In that institution before 1887, under the expectant plan, it was found that in three series of 600 cases each the death-rate varied between 14.3% and 15.3%, or only one per cent. So the conclusion was that groups of 600 cases were large enough to allow an estimate of the comparative effects of treatment when Brand's method was adopted, since the probable error from accidental causes would be small.

Therefore our series of 676 cases may be regarded as a suitable number for comparison in the future or with the records of the past, while the results in smaller groups of 100, 200, or 300 cases may so vary as to be of little value.

GENERAL CONSIDERATIONS.

Season. — Although typhoid fever is an autumnal disease, I think that more cases than formerly come to the hospital in the winter and spring months. Thus in these two years the admissions have been as follows:

January	17	July	63
February	16	August	97
March	20	September	165
April	12	October	139
May	28	November	63
June	27	December	29

Total, 676; 401, or 60% in August, September and October; 527, or 80%, between July 1st and November 1st.

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[1] Read before the Boston Society for Medical Improvement, January 25, 1891.

[2] The Practitioner, March, 1891.

Locality. — The records contain little evidence that typhoid fever was contracted away from the city in any large proportion of cases. About ten per cent. were recently arrived immigrants or "transients," that is, persons who had been in Boston less than one month. Some of these may have brought the disease with them, and others may have picked it up during visits to the country, but probably nine-tenths of the cases originated in Boston.

The 70 fatal cases were distributed as follows:

City proper	33
South Boston	12
Roxbury	8
Charlestown	6
East Boston	4
Suburban	4
Hull	1
Unknown	2
Total	70

Among these were:

Recent immigrants, or "transients"	6
Residents of less than 1 year	6
" " 5 years	20
" " 10 years	10
Total	42

The birth-places of the fatal cases were as follows:

Massachusetts (11 of foreign parents)	19
British Provinces	19
Ireland	19
United States (outside of Massachusetts)	7
England	1
Scotland	2
Sweden	1
Russia	1
Unknown	1
Total	70

Age. — Early age has an important bearing on the prognosis, as has been a matter of common observation. Hölscher's[3] 2,000 autopsies in patients who had died of typhoid showed but six girls and two boys under ten years of age. Among these were two infants of two months and nine months respectively. Fifty-six cases were over fifty years of age, and three over seventy years.

The mortality according to ages in our series is appended.

Age.	Cases.	Deaths.
Under 5	2	0
5 to 10	18	0
10 to 15	45	2
Totals	65	2 = 3%
15 to 20	120	13
20 to 25	207	25
25 to 30	137	9
30 to 35	59	8
Totals	523	55 = 10.5%
35 to 40	32	1
40 to 45	14	1
45 to 50	9	2
50 to 55	8	2
55 to 60	2	1
60 to 65	2	0
70 to 75	1	0
Unknown	20	6
Totals	88	13 = 14.8%

It will be seen that the small fatality among children and the high death-rate after thirty years of age counterbalance each other, leaving the general mortality as stated above at 10.4%.

Of the two patients who died before or within the sixteenth year, one was a boy of fifteen who entered during a relapse in the fourth week and died on the thirtieth day from pulmonary œdema and exhaustion. The other was a girl of thirteen years who came in on the sixth day and died on the twenty-ninth day of simple pyrexial exhaustion.

Between the ages of fifteen and twenty there were 120 admissions and 13 deaths. Seven of these were females, all of whom died of pyrexial exhaustion, complicated in one case by tuberculosis and in another by pneumonia and pregnancy. Of the six males two had no complications. One was a very doubtful case with symptoms indicating meningitis, fatal on the ninth day. Two died from perforation of the bowel at the age of nineteen, and one from intestinal hæmorrhage at the same age, this being the earliest period of life at which these fatal accidents occurred.

Between the ages of twenty and thirty, 344 patients entered and 34 died, namely, 12 males and five females from febrile exhaustion; two males and *three females* from perforation; nine males and *one* female from intestinal hæmorrhage; two with chronic Bright's disease. Of the above number, two had also delirium tremens and two pneumonia.

Beyond the age of thirty were 127 cases with 15 deaths, or 11.8%. With advancing years other degenerative changes were more frequent factors in producing the fatal result. Thus phthisis, chronic Bright's disease, chronic mitral insufficiency and sudden syncope from cardiac weakness were accountable for one death each. Two died with delirium tremens; two from perforation of the bowels; three from hæmorrhage; six from febrile exhaustion, which was compilcated in one case by pneumonia and in one by syphilis.

Time of Admission. — Other things being equal, delayed admission is regarded as greatly increasing the danger of death from exhaustion in typhoid fever.

Let us see the bearing of our figures upon this point. The records state that the patients entered as follows:

DATES OF ADMISSION.

	Cases.	Deaths.
First week	269	30 = 11%
Second week	294	22 = 7.4%
Third week	87	9 = 10.3%
Fourth week	12	3 = 25%
Not stated	14	6 = 43%
Totals	676	70

Thus more than one-third of our cases entered during the first week, but still the mortality was higher than among those who entered during the second and third weeks. This may be accounted for in two ways: (1) By error in statement as to the beginning of the disease; (2) By the fact that the severer the onset the earlier patients seek the hospital.

The mortality was highest among those who entered in the fourth week and those about whom no information on this point was elicited.

Moribund. — Fifteen patients were in such bad condition on admission that they died within three days, namely:

Died within twelve hours	4
Died within twenty-four hours	2
Died within forty-eight hours	3
Died within three days	6

Sex. — Of the total admissions 445 were males, 231 females; nearly two to one. This is about the usual proportion. Forty-three males died, or 9.6%; and 27 females, or 11.6%. The mortality among the women was two per cent. greater than among the men, as is usually the case in this disease, and this disproportion is in no way due to the intestinal lesions, which are much more fatal to men, as the following table shows:

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[3] Münchener Med. Wochenschrift, January, 1891.

Recognized perforations of bowel:		
Males 6 = 1.35%	Females 3 = 1.3%	Total 9 = 1.33%
Intestinal hæmorrhages:		
Males 27 = 6%	Females 5 = 2.1%	Total 32 = 4.7%
Hæmorrhage was fatal in 14 cases:		
Males 11 = 2.4%	Females 3 = 1.3%	Total 14 = 2%

Intestinal accidents as a whole, occurred in 41 cases, namely: males 33 (7%), females 8 (3.5%), total 41 (6%). They were fatal in 23 cases: males 17 (4%), females 6 (2.6%), total 23 (3.4%).

If then we deduct from the general mortality the mortality from intestinal lesions *per se*, we have for the two sexes the following:

Males:	
General mortality in 445 males	9.6%
From intestinal lesions	4%
From other causes	5.6%
Females:	
General mortality in 231 females	11.6%
From intestinal lesions	2.6%
From other causes	9%

Thus it appears that the death-rate, apart from intestinal perforation and hæmorrhage, is 3.4% higher among the females than the males.

Effect of Cold Baths on Intestinal Ulcers. — Although Brand, in his earlier publications, thought that his method would greatly reduce the frequency of relapses and the danger from the intestinal lesions, this has not been borne out by later experiences on the part of others. To compare, for instance, our 676 cases with 1,173 cases treated after Brand's method by Dr. Hare at the Brisbane Hospital, with a mortality of 7.84%,[4] we find the following results:

Brisbane Hospital:		
Males 739.	Fatal cases 69 = 9.3%	
Females 434.	Fatal cases 23 = 5.3%	
Boston City Hospital:		
Males 445.	Fatal cases 43 = 9.6%	
Females 231.	Fatal cases 27 = 11.6%	
Perforations of the bowel:		
Brisbane.	Males 27 = 3.6%	Females 7 = 1.6%
Boston.	Males 6 = 1.4%	Females 3 = 1.3%
Fatal hæmorrhages:		
Brisbane.	Males 13 = 1.70%	Females 3 = .69%
Boston.	Males 11 = 2.4%	Females 3 = 1.3%
Fatal intestinal lesions, as a whole:		
Brisbane.	Males 5.4%	Females 2.3%
Boston.	Males 3.7%	Females 2.6%
Total mortality from intestinal lesions:		
Brisbane Hospital (Brand's method)	4.2%	
Boston City Hospital	3.4%	

From this comparison it will be seen that under Brand's method of bathing, the death-rate among males was about the same as ours, while among females it was not half as high as that which obtained at the City Hospital. The mortality from the severity of the intestinal lesions was somewhat in our favor, therefore, the reason for our higher death-rate must be sought chiefly in the large number of females who died from other causes, that is, from conditions peculiar to their sex and from their feebler resistance to pyrexial exhaustion. It is in preventing this exhaustion that the virtue of Brand's method seems to lie.

Perforation. — Nine cases, six males, three females. This accident occurred in two patients within forty-eight hours after admission; twice in relapses, and in one patient who had aborted. Several other fatal cases presented symptoms of perforation, not in a typical manner, and autopsies were not obtained. The earliest recognized perforation occurred on the nineteenth day of the disease.

Hæmorrhages. — Of the 32 cases of hæmorrhage from the bowels, 14 were fatal. One died within forty-eight hours after entrance. The earliest fatal hæmorrhage was on the twelfth day of the fever and no patient died from the effect of a single hæmorrhage. Two had also delirium tremens and died on the fourth and sixth days after admission respectively. Two others, with complicating nephritis, had fatal bleeding from the bowels. Transfusion of a saline solution was resorted to in three cases, two males and one female. One recovered and two died from recurrent hæmorrhage.

GENERAL COMPLICATING CONDITIONS.

Phthisis. — There were seven cases of phthisis of whom three succumbed.

Pneumonia. — Thirty-four cases had pneumonia; 28 recovered and six died.

Pleurisy complicated 11 cases, of whom three died.

Bronchitis was noted as a severe symptom in 74 cases (11%); and in two this was a complication which had much to do with causing death.

Œdema — Dangerous œdema of the lungs occurred in 25 cases, of whom 10 died.

Nephritis. — In 60 cases (nearly 10%) the urine had albumen and casts. At least three of these had chronic Bright's disease and proved fatal. Twelve others died, in whom the nephritis was probably an acute process. Besides, there were many cases of febrile albuminuria.

Cardiac. — There were 12 cases of chronic valvular disease, of whom two died; and two cases of acute endocarditis, one fatal. One patient had acute fibrinous pleuritis and pericarditis, and acute nephritis.

Diarrhœa was present in about half the cases, but was the chief cause of exhaustion in five cases only.

Hyperpyrexia was noted in but three fatal cases, two males and one female. The latter had extreme distension. The highest temperature recorded was 108° F.

Delirium Tremens. — Alcoholism was one of the gravest sources of danger in a large number of cases, and was no doubt responsible for many of the cardiac, renal and pulmonary complications which contributed to fatal exhaustion. Delirium tremens was present in eight cases, of which five resulted fatally at an early period, twice accompanied by intestinal hæmorrhages and once by chronic Bright's disease. Three cases recovered.

Parotitis. — Of two cases of parotitis one died.

Pregnancy complicated the fever in seven cases: six normal pregnancies, one fleshy mole. Four recovered without aborting. One gave birth to a seven months' child weighing two and a quarter pounds, at the beginning of convalescence, which went on to complete recovery. The child also lived, and, at the end of seven months of careful rearing, weighed twelve pounds. One pregnant patient died from pneumonia, as mentioned elsewhere, without aborting; and the patient with fleshy mole had septicæmia and perforation. Thus, of these seven cases, miscarriage occurred in two only. It is interesting to note in this connection that the advocates [5] of Brand's method have not hesitated to plunge menstruating, nursing and pregnant women, who had typhoid, into the cold bath, and without ill result it is said.[6] Still, the pregnant state must be regarded as a dangerous complication, and Hölscher's analysis of 813 autopsies in women showed that two were pregnant, two had just aborted, 27 were in the puerperal period and four had puerperal fever.

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[4] Practitioner, March, 1891.

Phlegmasia alba dolens. — Thrombosis of the iliac or femoral veins occurred in nineteen patients, of whom four died, two from consequent embolism of the pulmonary arteries and two from exhaustion.

Embolism, resulting in gangrene of an extremity, did not occur in this series of cases, but the following case was in my service in 1889:

Gangrene of the left Leg from Femoral Embolism; Recovery. — W. S., age twenty, entered the hospital September 21, 1889, on the sixth day of typhoid. Heart weak and irregular. Urine: acid; 1028; trace of albumen; a few hyaline and granular casts. On the 15th day of the typhoid the left leg became cold and very tender over the calf. On the 18th day it was cold, and discolored for ten inches above the malleoli. No pulsations had been felt below the middle third of left thigh. Mildly delirious. Skin of foot became dry and hard, like parchment. Circumference of left calf two inches more than right. October 9th (24th day) a line of demarcation formed between the upper and middle third of leg. The affected part was kept clean by charcoal poultices. November 12th (58th day), all tissues gone at demarcation, except bone. Operation by Dr. Cheever. Pulse 156, and feeble at beginning. Sawed through, one and one-half inch above the bare bone, about four inches below knee-joint. Operation hurried because of patient's poor condition. He recovered well from ether. Wound healed gradually by granulation. Good stump. On November 29th (75th day), he was about the ward on crutches, improving in general condition very rapidly. Discharged.

Dr. Cheever had seen one or two similar cases, and thought delay less dangerous than amputation during the fever, as the event proved.

Dr. Drewitt[7] reports the case of a girl, age twelve, in whom on the 26th day of the fever, absence of femoral pulsation was noted. Three weeks later, the fever having abated, amputation above the knee was performed. Recovery in three months.

Murchison, Liebermeister and Trousseau relate similar occurrences, and the latter author states that when the upper extremity is involved death is almost inevitable. Sphacelation of the cheek and ear may occur.

Doubtless this accident has been occasionally recorded in other hospitals, but this, I believe, is the first instance at the City Hospital in 4,250 cases of typhoid. Hölscher reports but four cases of iliac and femoral embolism in his 2,000 typhoid autopsies.

Neuritis. — Peripheral neuritis caused much pain in the legs with delayed recovery in 21 cases, 3%. The usual duration was from two to four weeks, but in one case, at least, there was much wasting of the calves of the legs and contracture at the knee-joints, which lasted several months before the patient could walk. Her mind also was very much weakened, but eventually she recovered.

Insanity. — Two cases of post-typhoid insanity were transferred to other institutions, and the result is not known.

Otitis. — Twenty-two cases of purulent otitis, about 3%, are recorded, and there were probably more, as such cases usually passed into the hands of the aural surgeons, Drs. Green and Leland, whenever typhoid deafness occurred.

Peritonitis. — As stated above there were a few cases, mostly fatal, in which there may have been perforation or perhaps appendicitis, but the symptoms of this latter condition were marked in one case only and that recovered.

Relapses. — One hundred cases had relapses, 15%, and of these, three relapsed twice; two, three times. Eighteen were under fifteen years of age, none fatal. But one boy in his sixteenth year, who entered in a relapse in his fourth week, died on the 30th day. Three adults died in relapse, namely; one male and one female from perforations, and one female of twenty years from simple exhaustion; 6% of the deaths occurred in relapse; Hölscher gives 8%.

Prolonged Pyrexia. — In 35 cases the initial fever did not fall to the normal point for thirty days or more, and in nine cases it continued without defervescence for more than forty days.

(*To be continued.*)

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THREE RECENT CASES ŒSOPHAGOTOMY.[1]

BY GEORGE W. GAY, M.D.,
Surgeon to the Boston City Hospital.

The operation of œsophagotomy is not common enough to render any apology necessary for reporting all of the cases which come to us. It has fallen to my lot to do the operation three times within the past year; twice for a foreign body, and once for stricture of the gullet, which could not be overcome by bougies alone. Two of the patients recovered, and one died. A brief report of these cases is submitted, in the hope that other equally interesting instances may be brought out in the discussion, which I trust may follow the reading of the paper.

On Friday, October 16, 1891, Lena ——, aged three and one-half years, was brought to me by Dr. Francois, of Saugus Centre, with the following history: About eight months ago the child was given an ordinary cent, a coin three-quarters of an inch in diameter, to play with. Within a few moments the child was seized with a "choking fit" and the cent was missing, and was not again seen till the day of the operation. The choking symptoms soon subsided, and the child was apparently in her usual health for about six months when she began to reject a part of her food soon after swallowing it. This gradually increased until the time I first saw her, when she apparently rejected a very large portion, from the fact that she was emaciating and she was constantly tormented with hunger and thirst. All solids and much of the liquids were regurgitated easily in less than a minute after being swallowed.

The child was put under the influence of chloroform, rather than ether, to avoid the danger of spasm of the glottis, and also of the profuse secretion of mucus in trachea and bronchi. An œsophageal bougie with an ivory tip readily detected the foreign body at the lower end of the gullet.

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[5] Ziemssen and Immermann: Kaltwasserbehandlung d. Typhus Abdominalis, p. 20.

[6] Bouveret: Lyon Medical, April 26, 1891.

[7] The Lancet, November 8, 1890.

[1] Read before the Boston Society for Medical Improvement, January 25, 1892.

An incision an inch and a half in length was then made upon the left side of the neck, midway between the median line and the anterior border of the sterno-mastoid, from the top of the thyroid cartilage downwards and inwards towards the sterno-clavicular articulation. The three muscles, sterno-hyoid, and thyroid and the omo-hyoid were upon the inside, the sterno-mastoid with the carotid sheath and its contents were to the outer side of the incision. The thyroid gland was quite large, and was raised and drawn over to the median line. The deep fasciæ having been divided, the œsophagus was made prominent with a uterine sound introduced by the mouth. An opening was made into the gullet upon the sound, and the sides of the tube caught in a loop of silk. There was no hæmorrhage, and not a ligature was required.

The foreign body was detected with the sound, apparently lodged upon the anterior wall of the lower end of the œsophagus, about two inches below the top of the sternum, and from three to four inches below the opening in the neck. The foreign body was apparently dislodged or tipped from the anterior to the posterior part of the tube, and after a little trouble it was seized with a pair of slightly curved forceps and withdrawn. It was an ordinary cent coin together with the skin of a grape. The coin seemed to just fill the œsophagus as it was being removed. It was blackened but not eroded.

The wound was left open, and a small drainage-tube inserted for twenty-four hours. The little one rallied well from the chloroform, and at once and persistently cried for drinks. For a few hours nothing was given by the mouth. Ice and cold water were then allowed in small quantities, and the next day she was allowed all the water and milk she wanted. A considerable portion escaped from the wound every time she drank, but a little probably slipped by the opening. At all events the child was much gratified by this feeding, and rested much better in consequence. The wound behaved kindly, did not slough at all, nor suppurate very freely. Enemata of peptonized milk and cream every two or three hours were given from the first.

Two days after the operation the temperature went up, the child was dumpish, and secreted very little urine. A poultice containing digitalis leaves was applied to the loins. Twenty-four hours later she was bright and lively, and convalescence progressed favorably.

Liquids escaped from the wound pretty freely for about five days, when suddenly the amount became very slight and ceased altogether about ten days after the operation. The child was up and about the ward in thirteen days, and went home October 31st. The wound was then merely a line of granulations. Ten days later, twenty-five days after the operation, she was brought to the hospital for inspection. The wound was soundly healed, the child was eating solid food, and was as well as ever.

Case II. James C., aged twenty-eight years, was thrown from his cart on the 18th of last June. He fell upon his face, and a plate, upon which were four teeth, was literally "knocked down his throat." His attention was first drawn to the loss of his plate by pain at the epigastrium. He was able to swallow only liquids, and these with much effort and difficulty. He bore evidence of suffering on entering the hospital, four days after the accident, due in a measure to insufficient food, intemperate habits, and the usual irritation of a foreign body in that locality.

The plate was easily detected with an ivory-tipped bougie, and was situated thirteen inches from the upper incisors and about four inches below the top of the sternum. There was moderate swelling of the neck just above the sternum and clavicles.

The patient was etherized at once and the operation of œsophagotomy was done upon the left side in the usual manner. The œsophagus was brought up into the wound with a pair of curved œsophageal forceps introduced from above. The opening of the gullet was thus rendered much easier than the method of cutting upon a stomach tube or bougie. There was no hæmorrhage of consequence.

The plate was detected about seven or eight inches from the wound, seized with a pair of long forceps, and after a little trouble was removed. The dimensions were one and a half by one and three-quarters inches.

The wound was closed with silk sutures. This treatment had succeeded admirably in a previous case, but this patient was not in a favorable condition for it. The open method is undoubtedly the best for these cases, as free drainage is necessary in most instances.

The patient rallied from the operation very imperfectly, in spite of frequent injections of food and stimulants. Delirium soon came on and a typhoid condition became established. On the third day after the operation the wound was reopened and the tissues found to be infiltrated and on the eve of sloughing. There was no pus. The septic state present at time of operation was profound. Large quantities of food and stimulants were given by a stomach-tube. The symptoms steadily progressed to the end, which occurred five days after the operation. Death was due to septicæmia and exhaustion.

Case III. Mr. K., aged forty-eight, began to notice difficulty in swallowing about four months before coming under observation at the City Hospital. The dysphagia gradually increased until he could not swallow even liquids. Emaciation and debility were pronounced. Repeated efforts were made by Dr. Mixter and myself to pass a bougie through the stricture into the stomach, without avail. Bougies were arrested eight inches from the teeth. Patient struggled and became cyanosed at every attempt at entering the stricture. The pouch above the constriction held about two ounces. Some relief followed our efforts at dilation, but it was only temporary.

On May 17, 1891, the patient was reduced to such extremes, that more radical measures for his relief were imperative. The question to be decided was, whether to approach the stricture from the stomach, or by the neck. I chose the latter operation because less damage would thereby be done to healthy and important strictures, and because the after-treatment and course of the affection would in all probability be more satisfactory.

The œsophagus was opened upon the left side in the usual manner, and the finger readily entered the pouch above the stricture. The hard, lobulated mass about the size of a small orange was readily felt, but the opening to the lower portion of the gullet was only found after careful exploration with a long probe. It was located, not at the bottom of the pouch, but upon the anterior wall about an inch above the lowest portion. The opening to the lower part of the tube having once been located it was not a difficult matter to pass a bougie down from the mouth and with the finger in the pouch to guide the point into the lower part of the canal, and so on into the stomach. This having been accomplished, Dr. Mixter very readily passed a No. 19 Symond's tube into the œsophagus, and placed it in its proper position.

The patient having now rallied from the chloroform, drank a glass of milk very easily, a very little escaping from the wound. The wound was left open and the patient given all the milk, and brandy and water he wanted. A considerable part of the liquids drank escaped from the wound for about a week, but he gained in strength and spirits, and was up, dressed and about the ward in eight days. He was out-of-doors in a little over two weeks, and the wound in the neck was healed in three weeks.

The tube was changed in two weeks with considerable benefit to the swallowing, as the old one had become foul. Nine days later another tube was put in, which was allowed to remain till the patient's death, five weeks later, for the reason that it was impossible to remove it by any reasonable efforts. A bougie was passed into the stomach every two or three days towards the last for the purpose of keeping the tube clear.

This patient improved so much that he left the hospital a month after operation, and remained at home with his family during the last weeks of his life. Two days before death he returned to the hospital, emaciated, weak to the last degree, and suffering horribly from dyspnœa upon the least exertion. He was given a few whiffs of chloroform, and tracheotomy was quickly performed with some relief. On opening the trachea about two ounces of the most fetid pus escaped, mixed with a little blood. He had raised blood at times in small quantities ever since the operation first or soon after. He died quietly from exhaustion July 15th.

This man lived two months after the operation, and it is fair to say that half of that time, and most of his comfort, were due to the treatment. The relief to his hunger, thirst, weakness, nervousness and general irritability was very marked and satisfactory. The pangs of starvation were thus greatly relieved until the disease had made such inroads upon his vitality that he was largely oblivious to his surroundings. The inevitable result was delayed, and his last days were made very much more endurable by the above procedures, which is all that can be reasonably expected of any treatment for this affection at the present day.

Intubation of the œsophagus for stenosis bids fair to rival in usefulness its twin invention of Dr. O'Dwyer for the relief of laryngeal obstruction. The tolerance of the tube is as surprising and as satisfactory in the one case, as in the other. The facility with which our patient drank through the tube was very gratifying to all concerned. After a day or two very little pain or soreness was complained of, except when the tube was removed. This procedure was always attended by violent spasm of the glottis, difficult breathing and cyanosis. Fortunately the tube may be allowed to remain in place a fortnight under ordinary circumstances, although it gets pretty foul in that time. It would be better to remove the tube every week, if it can be done without too much disturbance.

In closing, the writer wishes to make his acknowledgments to Dr. Mixter for his valuable assistance in this case, as well as for his most ingenious and useful instrument.

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THE MANAGEMENT OF COMPOUND DISLOCATIONS OF THE ANKLE-JOINT.[1]

BY CHARLES L. SCUDDER, M.D.
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By dislocation of the ankle I understand a displacement of the upper articulating surface of the astragalus from the lower articulating surface of the tibia, so as to carry the whole foot either forward or backward of the median lateral plane, or to the inner or to the outer side of the antero-posterior plane of the leg; that is, the position of the foot determines the dislocation.

By a compound dislocation of the ankle I understand a dislocation in which at least some one of the ankle-joint surfaces is exposed to the air through a wound.

Hippocrates, in his article on the treatment of compound dislocations at the ankle-joint, as translated by Francis Adams, says:

"In case of complete dislocation at the ankle-joint, complicated with an external wound, whether the displacement be inward or outward, you are not to reduce the parts, but let any other physician reduce them if he chose. For this you should know for certain that the patient will die if the parts are allowed to remain reduced, and that he will not survive more than a few days, for few of them pass the seventh day, being cut off by convulsions, and sometimes the leg and foot are seized with gangrene. But if not reduced nor any attempts at first made to reduce them, most of such cases recover.

"The leg and foot are to be arranged as the patient wishes, only they must not be put in a dependent position, nor moved about. On no account is a bandage or compress to be applied. Certain of the dressings used in recent wounds are suitable in such cases, but those into which rosin enters as an ingredient do not agree with them; for the cleansing of the sore is a slow process, and there is a copious discharge for a long time. It ought to be well understood that the patient must necessarily be much maimed and deformed; for the foot is retracted outward, and the bones that are displaced protrude outward. But the wound heals by thin and feeble cicatrices, provided the patient keep quiet for a length of time; but otherwise there is danger that a small ulcer may remain incurable.

"And yet in the case we are treating of, those who are thus treated are saved, whereas when the parts are reduced and allowed to remain in place, the patients die."

Hippocrates is very decided in his advice as to the treatment of compound dislocations of the ankle-joint. He saw the necessity for drainage, and recognized its presence when the dislocation is left unreduced, and its absence when reduced. The amputation of a limb was looked upon with horror until the times of Ambrose Paré, the opinion of Hippocrates controlling the action of surgeons for a long time. With the introduction of the ligature, amputation became more common. Desault advocated the reduction of dislocations

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[1] Read before the Boston Society for Medical Improvement, January 5, 1892.

No.	Reference.	Yea
1	Louisville Med News, 1879, p. 54.	187
2	American Homeopath, May, 1881.	188
3	Liverpool Med. Chir. Journal, 1884, iv, 439.	188
4	Amer. Pract. and News, Louisville. 1887, iii, 103-109.	188
5	Amer. Pract. and News, Louisville, 1887, iii, 103-104.	188
6	Buffalo Med. and Surg. Journal, 1881-82, xxi, 515.	188
7	Philadelphia Med. Times, August 13, 1881, p. 718.	188
8	New York Med. Journal, January 25, 1890.	189
9	New York Med. Journal, January 25, 1890.	189
10	New York Med. Journal, January 25, 1890.	189
11	New York Med Journal, January 25, 1890.	18
12	New York Med. Journal, January 25, 1890.	18
13	New York Med. Journal, 1888. xlviii, 92.	18
14	London Lancet, June 2, 1883, p. 948.	18
15	Med. Press and Circular, 1888, n. s., xlvi, 83.	18
16	Med Press and Circular 1888, n. s., xlvi, 83.	18
17	Med. Press and Circular, 1890, n. s , xlix, 35.	18
18	Med. Press and Circular, 1890, n. s , xlix, 35.	18
19	Med. Press and Circular, 1890, n. s., xlix, 35.	1
20	New York Med. Record, August 10, 1889, p. 146.	1
21	Medical Record, 1885, xxvii, 515.	1
22	London Lancet, 1878, ii, 439.	1
23	London Lancet, 1882, ii, 441.	1
24	Glasgow Med. Journal, December, 1890.	1
25	Minnesota State Med. Society, 1878.	1
26	The Polyclinic, December, 1886.	
27	Indiana Med. Journal, May, 1886.	
28	Principles and Practice of Surgery, Ashhurst, 212.	
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30	Principles and Practice of Surgery, Ashhurst, 212.	
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32	Principles and Practice of Surgery, Ashhurst, 112.	
33	Med. Press of Western New York, January, 1888, p. 9.	
34	Trans. South Carolina Med. Association, April, 1888.	
35	Boston Med. and Surg. Journal, 1881.	
36	Trans. Michigan State Med. Society, 1877.	
37	Trans. Illinois State Med. Society, 1880, p. 122.	1
38	Trans. Intercolonial Med. Congress, Australia, 1889.	188

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CASES OF COMPOUND DISLOCATION OF THE ANKLE-JOINT, IN WHICH THE END-RESULT IS KNOWN, REPORTED IN MEDICAL LITERATURE SINCE 1877.

No.	Reference.	Year.	Age.	Sex.	Accident.	Injury.	Operation.	Result.	Usefulness.	Remarks.
1	Louisville Med News, 1879, p. 54.	1879	26	M.	Fall.	Right foot turned inward. No fracture.	Reduced without cutting.	In 2½ mos. discharged, well.	Slight limp. Walks easily.	
2	American Homeopath, May, 1881.	1881	24	M.	Crushed.	Fracture of fibula. Tibia through the wound	Reduced.	Well.	Motion.	
3	Liverpool Med. Chir. Journal, 1884, iv, 439.	1884	44	M.	Fall.	Foot turned outward. Right astragalus through skin.	Astragalus removed. Drained.	Well. Healed in 2 months.	Slight limp. Slight motion at ankle.	Posterior tibial artery torn. Abscess on outer ankle. Increased motion at tarso metatarsal joint.
4	Amer. Pract. and News, Louisville, 1887, iii, 103-109.	1887	50	F.	Fall.	Foot turned outward. Fibula protruded 2½ in. Fracture of tibia above malleolus.	Int. mal. and articular surface of tibia and astragalus removed. Drained.	Well. Healed in 2 months.	Walks without a cane. Fair amount of motion at ankle.	Operation 3 wks. after injury. Abscess opened up the leg.
5	Amer. Pract and News, Louisville, 1887, iii, 103-109.	1887	17	M.	Fall.	Left ankle. Tibia fract. at lower end, protruded 2 in. Fibula fractured above malleolus.	Joint surfaces was removed.	Well. Crutches 6 months.	Useful foot.	Joint was filled with sand and dirt. On right side tibia and fibula fract., not compound.
6	Buffalo Med. and Surg. Journal, 1881-82, xxi, 515.	1881	38	M.	Fall.	Foot turned outward. Tibia 2 in. protruded External malleolus fractured.	Reduced.	Well.	Five months afterward good motion and use of limb.	
7	Philadelphia Med. Times, August 13, 1881, p. 718.	1881	15	M.	Fall.	Fracture of malleoli.	Excision. Drained.	Well.	No limp with lift. Fair motion.	Shortening ¾ in.
8	New York Med. Journal, January 25, 1890.	1890	Adult.	M.	Crushed.	Tibia and fibula both forward.	Reduced.	Well.	Useful.	Entire front of foot laid open. Incisions to relieve tension.
9	New York Med. Journal, January 25, 1890.	1890	28	M.	..	Both bones outward.	Reduced.	Well.	Useful. No limp end of three months.	
10	New York Med. Journal, January 25, 1890.	1890	24	M.	..	Compound fract. of astragalus. Pott's fract. Fract. fibula. Junc. upper and mid. thirds.	Reduced.	Well.	Useful.	Drained Incisions to relieve tension.
11	New York Med Journal, January 25, 1890.	1890	33	M.	..	Compound fract. of astragalus Tibia fibula articulating surfaces partly detached.	Reduced. Loose piece of astrag. removed.	Well.	Useful. Slight lameness.	
12	New York Med. Journal, January 25, 1890.	1890	46	M.	..	Compound fract. of astragalus. Post-tibial ligated.	Reduced.	Well.	Useful.	Iodoform poisoning. Fracture astrag., necrosed, removed.
13	New York Med. Journal, 1888, xlviii, 92.	1888	..	..	..	Both bones, and protruding.	Reduced.	Well.	Useful four years after accident	Dead bone. Suppuration.
14	London Lancet, June 2, 1883, p. 948.	1883	37	M.	Fall.	Compound subastragalus dislocation. Fract. head astrag.	Reduction by removal of head of bone.	Well.	Useful. Some movement at ankle.	Could not be reduced without removal.
15	Med. Press and Circular, 1888, n. s., xlvi, 83.	1888	28	M.	Fall.	Left ankle. Both bones project through skin. Foot twisted.	Reduced.	Not healed. Doing well.		
16	Med Press and Circular 1888, n. s., xlvi, 83.	1888	48	M.	Crushed.	Right ankle. Tibia protruded 4 in. through wound. Fibula comminuted.	Reduced. Drained.	Not healed. Doing well.		Incisions made later to relieve tension.
17	Med. Press and Circular, 1890, n. s, xlix, 35.	1890	Adult.	M.	Crushed.	Both bones on dorsum of foot.	Reduced.	Well.	Useful foot and ankle one year later.	Free incisions made to relieve tension.
18	Med. Press and Circular, 1890, n. s, xlix, 35.	1890	Adult.	M.	Crushed.	Right foot. Tibia 3 in. through wound Fibula comminuted. Foot everted. Excision of tibia and fibula 6 mos. later	Reduced. Drained.	Well.	Useful.	Incisions to relieve tension.
19	Med. Press and Circular, 1890, n. s., xlix, 35.	1890	28	M.	Fall.	Tibia and fibula outward.	Reduced.	Well in 3 mos.	Useful. No limp.	
20	New York Med. Record, August 10, 1889, p. 146.	1889	22	M.	Crushed.	Left foot.	Astragalus removed.	Well in 3½ mos.	Useful. Slight limp in one year.	
21	Medical Record, 1885, xxvii, 515.	1885	45	M.	Wrench.	Compound dislocation of tibia with fracture fibula 2½ in. above ankle-joint. Internal malleolus protruding	Reduced. Bits of bone removed.	Well.	Walked after 4 mos. with cane.	Motion after 7 years ⅔ as great as well side.
22	London Lancet, 1878, ii, 439.	1878	34	M.	Fall.	Left foot everted. Wound from ant. tibial tendon to inner malleolus, which with the astragalus protruded.	Reduced by removal of astragalus.	Well in 4 mos.	Useful. Some motion present.	Suppurated freely. Erysipelas. Abscesses. Bed sores.
23	London Lancet, 1882, ii, 441.	1882	Adult.	M.	Crushed.	Left foot everted. Astragalus protruded.	Reduced by removal of astragalus. Drained.	Well.	Slight limp. Useful extension and flexion	
24	Glasgow Med. Journal, December, 1890.	1890	18	M.	Crushed.	Foot backward. Wounds in front.	Reduced.	Well.	At work 3½ mos. No limp in 4 mos.	
25	Minnesota State Med. Society, 1878.	1878	Adult.	M.	Fall.	Foot everted. Tibia protruded. Fibula broken 4 in. above external malleolus. Internal malleolus fractured.	Reduced.	Well.		
26	The Polyclinic, December, 1886.	1886	..	..	..	Foot everted. Tibia 1 in. thro' wound. Fract. fibula 1 in. from joint. Int. lateral ligament torn, malleolus torn off.	Reduced.	Well.	Died of paralysis.	
27	Indiana Med. Journal, May, 1886.	1886	Adult.	M.	..	Foot everted. Fibula and internal malleolus fract in two places. Tibia protruding.	Reduced.	Well.	Useful.	Posterior tibial tied.
28	Principles and Practice of Surgery, Ashhurst, 212.	1878	32	M.	Fall.	Compound dislocation of the ankle.	Removed part of bone. Reduced.	Well.	Usefulness perfect.	
29	Principles and Practice of Surgery, Ashhurst, 212.	1882	30	F.	Fall.	Compound dislocation of the ankle.	Reduced.	Well.	No limp.	
30	Principles and Practice of Surgery, Ashhurst, 212.	1883	60	F.	Fall.	Protrusion of bones.	Reduced.	Well.	Slight lameness.	
31	Principles and Practice of Surgery, Ashhurst, 212.	..	64	M.	Blow.	Compound dislocation of the ankle.	Reduced.	Died.		Sepsis.
32	Principles and Practice of Surgery, Ashhurst, 112.	..	50	M.	Fall.	Compound dislocation of ankle. Much dist., protruding tibia.	Excision.	Well.	Useful.	
33	Med. Press of Western New York, January, 1888, p. 9.	1888	45	F.	Fall.	Right ankle. Comp. dislocation. Foot everted. Fibula broken 2 in. up shaft. Tibia broken in several pieces.	Excision.	Well.	Useful.	Lateral ankle support.
34	Trans. South Carolina Med. Association, April, 1888.	1888	Adult.	M.	Fall.	Foot everted. Tibia protruding. Fibula fractured 2 in. from malleolus.	Reduced.	Well.	Useful.	
35	Boston Med. and Surg. Journal, 1881.	1881	28	M.	Fall.	Compound dislocation of right astragalus.	Reduced.	Well.	Uses cane in walking. No motion at joint.	Abscesses. Astrag. necrosed.
36	Trans. Michigan State Med. Society, 1877.	1877	27	M.	Crushed.	Compound dislocation of astragalus	Reduced. Astragalus removed.	Amputation.		Septic. Abscesses.
37	Trans. Illinois State Med. Society, 1880, p. 122.	1880	51	F.	Fall.	Compound dislocation of ankle. Tibia protruded. Fibula fracture 2½ in from malleolus. Foot everted.	Reduced. Excised internal malleolus.	Well.	Useful. Motion at the ankle.	Carious bone removed subsequently.
38	Trans. Intercolonial Med. Congress, Australia, 1889.	1889	33	M.	Fall.	Pott's fracture of right leg. Left leg compound dislocation of astragalus, with a fracture of astragalus.	Reduced. Excision of the astragalus.	Well.	Useful.	

of the ankle, and then amputation ceased to be the common practice. Sir Astley Cooper advised resection of the joint in almost all cases. Since his day surgical opinion has fluctuated, no definite course being laid down.

There are to-day for consideration three methods of treatment: (1) Reduction; (2) partial or complete excision with reduction; (3) amputation, primary or secondary.

The comparatively modern authorities in surgical literature in America — Ashhurst, Hamilton, Gross and Agnew — advise strongly that, as a rule, amputation be done. The English authorities, on the other hand, — Holmes, Bryant, Holthouse and Erichson — are very conservative, advising an attempt to save the limb by excision, reserving the badly comminuted cases for amputation. These views merely repeat what the profession has for a long time maintained. No very definite rules of procedure has been laid down by any one. This may be impossible and impracticable; but it seems that to-day this may safely be done.

There are two things to be considered in deciding what to do with any case of this injury: (1) The extent of the laceration of the soft parts; (2) the amount of injury to the bones.

(1) If the laceration is so great that the foot is useless, amputation is indicated; and amputation is indicated in only two other instances—old age and sepsis.

(2) If this laceration is not great, and the dislocation can be reduced, it should be reduced without excision, proper drainage being provided both anteriorly and posteriorly to the joint.

(3) If the laceration is not great and reduction is impossible, then an excision should be done, either partial or complete.

(4) If there is great injury to *bone* whether the dislocation can or cannot be reduced, a partial or complete excision should be done.

Aseptic surgery regards all fresh accident wounds, particularly those connected with the joints, as comparatively safe so far as immediate danger to life is concerned, and if expectant treatment, as indicated above, is instituted in these cases, the chances for a useful foot and ankle-joint are very great. The best results from expectant methods of treatment of compound dislocations of this joint are due to *aseptic* methods in every instance. All compound dislocations of the ankle-joint, however small the wound in the soft parts, should be thoroughly cleansed. In order to insure an aseptic wound, the small opening should be enlarged so that the joint may be thoroughly examined and cleansed in every part.

I have carefully examined the records of all cases of compound dislocation of the ankle reported in the medical literature since 1878. I found a total of thirty-eight cases, in which the end-result is known. Twenty-two were reduced without operation. In eight the astragalus was removed. In six a partial excision was done. In two a complete excision was done. The end-result in these cases were, as to usefulness of the foot, excellent. As to the mortality, one case died of sepsis, aged 64, in 1883; one case in 1877, came to amputation. The age of the oldest was sixty-four years; of the youngest, fifteen years. Only those cases were taken for study in which the end-results were known.

Through the kindness of Dr. H. H. A. Beach, under whose care the case came at the Massachusetts General Hospital, I am allowed to make the following report of a case of forward compound dislocation of the ankle-joint which under conservative and non-operative treatment recovered with a useful though stiff ankle-joint.

E. D., age ten years.

April 24, 1888. Caught foot between the tracks of a railroad turntable; was held fast and thrown violently to the ground. Shortly afterward an antiseptic dressing and side splints were applied to the foot. He was brought to the accident-room five hours after the injury. On examination, a compound dislocation of the right ankle backward, with fracture of the internal malleolus was found. There was an extensive laceration of skin across the dorsum of foot from one malleolus to the other forming a gaping wound two inches wide, exposing the extensor tendons. The anterior tibial tendon was torn, and the dorsalis pedis artery ruptured. The tip of the internal malleolus was found broken and the bones of the leg displaced backward — the heel being shortened and the upper articular surface of the astragalus lying anteriorly.

May 4th. A small abscess was opened at the tip of one malleolus.

July. Entirely healed. Extensive cicatrix across dorsum of foot. Complete ankylosis at ankle-joint.

August 1st. Up and about on crutches.

March, 1891, two years and nine months after the wound healed, the boy uses the injured foot and leg as well as the other. The tibæ are of the same length. The right calf measures 10 inches. The left calf measures 11½ inches. He walks with a slight limp, which is not noticeable to many. There is a slight tendency to walk on the outer edge of the foot. After walking all day, particularly in damp weather, there is some pain and a little stiffness about the foot.

In conclusion, extreme conservatism should characterize the treatment of recent compound dislocations of the ankle-joint. Such treatment as is emphasized above should, in the large majority of cases, result in a useful ankle-joint and foot.

Clinical Department.

TWO CASES OF COMPOUND FRACTURE AND DISLOCATION AT THE ANKLE-JOINT.[1]

BY ABNER POST, M.D.,
Visiting Surgeon, Boston City Hospital.

These two cases were shown to the Society for Medical Improvement, to illustrate the fact that very serious compound dislocations may recover under modern wound treatment.

In the first case the accident occurred on August 20, 1890. The patient, who was a teamster, was thrown from his wagon on to the pavement. When brought to the hospital, there was a wound below the external malleolus of the left tibia. The astragalus was broken, and one-half of it protruded through this wound, and the foot was strongly inverted. Before any surgical procedure was begun, all the parts about the wound were carefully cleansed and washed with a solution of corrosive sublimate of a strength of 1 to 3,000. The wound was then enlarged. It was absolutely impossible to replace the misplaced portion of the astragalus, and it was removed. The foot was restored to its normal position, and a dressing of gauze soaked in a 1 to 2,000 solution of corrosive sublimate applied. A plaster-of-Paris bandage was then applied over all, exactly as might be done for a simple fracture.

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[1] Shown before the Boston Society for Medical Improvement, January 25, 1892.

On the evening of the 21st the temperature was 100°; on the evening of the 22d 101°; on the morning of the 23d it fell to 99°. On the 25th it was between 100° and 101°; it then fell to 99°, where it remained for a few days, and for the remainder of the time was practically normal. The first dressing was done on September 2d, when the wound was healed, except a small granulating area about half an inch square. The circular plaster was replaced and retained until September 22d, when the wound was entirely healed and some motion in all directions was found.

This patient was kept long in bed, as he had lost his left arm many years before and was unable to use crutches. He was thirty-two years old at the time of the accident, and was the driver of a beer-wagon. He had lost his arm some years previous from a compound fracture of the hand, which to his eyes was much more serious than the accident to his foot and his surprise and delight at retaining his leg was very great. He now walks without any support. When shown to the Society, he walked with both feet bare on the level floor with but a slight limp, but in going up or down stairs there is evident disability.

The second case was Mr. A. L. P., aged forty at the time of the accident, which occurred on April 23, 1888. When brought to the City Hospital on that date the articular end of the tibia projected more than two inches through a wound over the outer malleolus. The foot was turned inwards and upwards so that the exposed bone lay over the heel. The periosteum was stripped up from the tibia, and both malleoli broken off. The accident resulted from a fall of about six feet from a ladder that broke while he was upon it. He came down feet foremost on to an inclined plank driveway.

Everything was made clean; the incision was enlarged upwards; and fragments, of which there were many small ones, were removed with forceps, fingers and irrigation. As the removal of the fragments seemed incomplete, an incision was made over the inner malleolus, and the fingers passed freely through the joint. The bones were then replaced, the periosteum adjusted and secured in place with a stitch or two of cat-gut, the skin carefully replaced and stitched with silk. No drainage-tubes were used, but a stitch or two omitted to allow easy exit for any discharge. Irrigation with corrosive-sublimate solution was freely done during the operation, and corrosive gauze dressing was applied. The whole was carefully enveloped in a plaster-of-Paris bandage.

The first dressing was done on May 7th, when there was slight external sloughing at the site of the original wound. There was afterwards slight suppuration at that point, but it was confined to the external portions of the original wound.

The patient was sent home on June 3d, and made a good recovery. When shown to the Society, there was motion at the joint in all directions, and the patient declared that the foot was as good as before the accident.

The principle point in the treatment of these cases — which were not unique, though extremely favorable examples of what may be done with compound dislocations at the present day — was the disinfection of the wound, but the immobility, as enforced by the plaster bandage, was of almost equal importance.

PEROXIDE OF HYDROGEN AS A DEODORIZER, IN CANCER OF THE UTERUS.

BY GEORGE W. KAAN, M.D.

Surgeon to Out-Patients, Free Hospital for Women, Boston.

The value of peroxide of hydrogen in washing out sinuses and abscess cavities, has led me to use it recently as a vaginal injection in cancer of the uterus; and with gratifying results.

My cases have been few; but in each the distinctive cancerous odor was noticeable about the patient before the use of the peroxide of hydrogen, and absent afterwards. In one out-patient case the fetor was so pronounced, that the air of the room seemed saturated with it, the moment she entered. When I last saw her in making an examination no odor was perceptible a foot from the vulva, and only slightly so close to it. In this case she had used the injection the night before, and a cancerous mass as large as a man's fist, hangs in the vagina, within two inches of the vulva. This case had had palliative treatment in the hospital, by curetting, Paquelin's cautery, and chloride of zinc applications. When she first came to me the disease had extended over the whole anterior vaginal wall; since then the peroxide of hydrogen has been used, and the anterior wall is clear. It seems to me that the injections have had some curative action.

Further observation, of course, is necessary; but bearing in mind what Sir Spencer Wells says of cancer and cancerous disease, that everything in relation to it is so important that nothing should be thought a trifle, and my material being limited, I venture to state the facts as they appear to me in this case.

Regardless, however, of any value it may have as a curative agent, its use as a deodorizer, and this without substituting another odor for the cancerous one, makes it of inestimable worth in adding to the comfort of the patient, where palliative treatment alone is all that remains.

The method of using has been to take about an ounce of the peroxide of hydrogen and an equal quantity of water, warmed by being placed in a pan of hot water, and injected through a soft rubber catheter, so that the injection shall be sure to reach the back part of the vagina. Such an injection once or twice a day has been sufficient.

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Medical Progress.

RECENT PROGRESS IN PUBLIC HYGIENE.

BY S. W. ABBOTT, M.D.

(Concluded from No. 13, page 313.)

CHEMICAL AND BACTERIOLOGICAL INVESTIGATION OF THE SYSTEM OF SEWAGE TREATMENT AT POTSDAM.[6]

It is pointed out in the introduction that the object to be attained in the purification of sewage-water is the destruction of all the infectious matter contained therein. It is also necessary to effect such changes that the liquid after treatment may no longer be liable to putrefaction. The success of any process in accomplishing these results must be tested by chemical and bacteriological analyses. The chemical investigations should in the main be relied upon for the determination, quantitatively, of the amount of putrescible organic matters present in the sewage. The best methods of conducting the analyses by the computation of (1) the loss on combustion; (2) the amount of permanganate potash needed to oxidize the organic matters; and (3) the total amount of nitrogen present, are described. The great differences in the results obtained in the examination and treatment of fresh sewage, and of sewage that is already partially putrid, are discussed. In addition to the above-mentioned facts it was deemed advisable, in the case of the Potsdam inquiry, to ascertain the total amount of lime and chlorine present in each sample before and after treatment. By reference to a diagram the arrangement of the works at Potsdam is described: They consist of a siphon-well constructed to hold 8.5 cubic metres of raw sewage, a deep well to hold 28.5 cubic metres, a clarifying chamber, conical in form, with the clarifying cylinder dipping into it, the latter being 2.75 metres in diameter, inclined at an angle of sixty degrees, and rising to a height of 6.5 metres above the top of the conical vessel into which it dips. The mode of working the apparatus by means of a partial vacuum created in the upper part of the cylinder is explained. The authors state that the preparation employed for the treatment of the sewage is a secret in the hands of the firm, but the composition of the reagents was disclosed to them. The only active disinfectant is quicklime, which in the form of milk of lime, constitutes about one-fifth of the mixture. The quantity of the precipitants used is not varied in accordance with the strength of the sewage. It was found necessary to take samples of the sewage under treatment in seven different places. The results are set forth in tables. It is stated that the sewage was of a highly concentrated character, more in the nature of the contents of a cesspool than like ordinary town sewage. In order to give an idea of its composition, the sewage is compared with that of Dortmund, Essen, Berlin, and of the Schwartz-kopff works, the last-named being practically pail-stuff, yielding a residue on evaporation of 2,408 milligrammes per litre. The Potsdam sewage contained in one trial a residue of 2,271.5 milligrammes per litre, and showed a loss on combustion of 819 milligrammes per litre.

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[6] B. Proskauer and Dr. Nocht: Zeitschrift für Hygiene, vol. x, 1891, p. 111.

The working of the process is contrasted with the corresponding figures obtained on the treatment of the sewage of Dortmund and Essen in a further table, from which it follows that at Potsdam the residue on evaporation in the effluent was reduced from 2,271.5 milligrammes to 1,844.5 milligrammes, the loss on combustion from 819 milligrammes to 443.5 milligrammes, the oxygen required as tested by permanganate of potash from 975 milligrammes to 546.5 milligrammes, and the total nitrogen from 262.3 milligrammes per litre to 169 milligrammes; these reductions being respectively equivalent to 19, 46, 44, and 36%. The amount of ammonia was increased by the process, owing no doubt to the decomposing action of the lime; and still better results were obtained towards the close of the treatment. The clarification, the removal of the matters in suspension, is stated to have been completely successful; not so, however, the results, as respects the matters in solution, owing in all probability to the extremely concentrated nature of the liquid. The chief remaining point to be ascertained was, whether the effluent, after its discharge into the river Havel, was diluted to such an extent as to be prevented from subsequent putrefaction, and whether it was likely to have any deleterious effect upon the river water.

Analyses are given to show the influence of the sewage admixture upon the composition of the river-water, and the authors affirm that it may be assumed from these that the dilution which takes place is such as to remove all danger of injury to the river.

The bacteriological examinations of the results of the process are shown in a series of tables, and from these it would seem that the amount of precipitants employed is insufficient to destroy all germs in the sludge and in the effluent, and that it would be necessary to make use of five times the present amount of quicklime to effectually sterilize the effluent.

ON THE SUCCESS ATTAINED BY VARIOUS SYSTEMS OF CLARIFYING SEWAGE-WATER AT FRANKFORT-ON-THE-MAIN.[6]

The experiments here recorded have been carried out during the past three years, at the Frankfort works, under the supervision of a Commission consisting of Dr. Spies, Mr. Lindley, Dr. Libbertz and the author. Certain of the results obtained have been already published, and an account of the works is there given. In all, eight series of experiments have been conducted, with five different systems of clarification. The various processes investigated were as follows:

(*a*) Precipitation with sulphate of alumina and lime. Series I to III.

(*b*) Precipitation with lime alone. Series IV.

(*c*) Simple deposition, without chemicals. Series V.

(*d*) Precipitation with sulphate of iron and lime. Series VI and VII.

(*e*) Precipitation with phosphoric acid and lime. Series VIII.

The volume of sewage dealt with was about 30,000 cubic metres (6,600,000 gallons) per diem, and upwards of one thousand complete and comprehensive analyses were carried out. The results of the different series of experiments are set forth in eight tables. A second set of tables gives comparative analyses of the sewage-water and the effluent. In its mean composition the Frankfort sewage, though considerable fluctuations were observed, does not differ materially from that of other towns, London, Paris, Dantzig, Berlin and Breslau, with which it is contrasted in a special table. By means of a set of graphic diagrams are shown the results of the various purification processes, as evidenced by the character of the effluent as compared with the raw sewage, and the author sums up the general effect of the different modes of treatment. In all cases the suspended matters were far more efficiently dealt with than those in solution, and the appearance of the sewage-water, as tested by the eye alone, was greatly improved.

Passing on to the comparative value of each of the various processes as tested by the elimination of injurious constituents, numerous tables are given to show the amounts of suspended and dissolved impurities removed by each different system, and the effect produced by the various precipitants is discussed in detail.

In dealing with the amount of organic matter present, special consideration is given to the phosphoric-acid treatment, and a graphic diagram is appended to show the proportion of the phosphates removed at each different stage of the process, and carried off in the effluent.

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[6] Dr. B. Lepsius: Vierteljahrsschrift für öff. Gesundheitspflege, 1891, p. 230.

From this it appears that though all the added phosphoric acid is expended in enriching the sludge, the amount of phosphoric acid present in the deposit from untreated sewage is nearly twice as great as is that in the sludge from the phosphate process. The figures in milligrammes per litre are as follows:

Phosphoric Acid Originally Present.		Phosphoric Acid after Treatment.	
(1) In raw sewage	67.4	(1) In deposit in sand chamber	29.4
(2) Added to secure precipitate	17.6	(2) In sludge	17.4
		(3) In effluent	38.2
Total,	85.0	Total,	85.0

Hence, instead of securing a sludge valuable for agriculture, more than twice the quantity of the phosphoric acid employed for the precipitation is carried away in the effluent, namely, 38.2 milligrammes per litre, of which about half is in suspension, and half in solution. The author points out that from this aspect it would be better not to treat the sewage with phosphate of lime at all, but to clarify it by simple deposition, and then to add the phosphate to the sludge. In conclusion, it is stated that the experiments have demonstrated that the effect of chemical precipitation is not so greatly superior to the purification obtained by simple deposition in tanks, as to warrant the adoption of any of the above processes in preference to simple mechanical treatment. This, of course, does not hold good for sewage treatment generally, but it applies only to the conditions prevalent in the present works. It is proved, however, that in every case where tanks approaching the dimensions of those at Frankfort are available, more especially where the length of the tanks is equally great, it is possible to obtain, by purely mechanical means, results comparing favorably with the clarification attained elsewhere in tanks of smaller size only by means of chemical treatment, and therefore at a greater cost.

THE SCHWARZKOPFF SYSTEM OF SEWAGE-TREATMENT (BERLIN).[7]

The Berlin University Hygienic Institute having been requested to report on the Schwarzkopff process, to decide upon the extent to which the offensive constituents of fæcal matters were eliminated by this system of treatment, the necessary bacteriological researches were entrusted to Dr. Plagge and Dr. Petri, under the superintendence of Dr. Noch; and the author was instructed to undertake the chemical investigations, and to report generally upon the experiments. The factory where the system is in use contained a set of water-closets, dry-closets and urinals, resorted to daily by about seven hundred work-people. The cesspit receives also the liquids from the urinals, which are flushed with water. The fæcal matters are raised from the cesspit into a mixing tank close alongside, where they are pulped by mechanical means and mixed with chemicals which consist of: (1) milk of lime; (2) solution of sulphate of magnesia; (3) solution of crude superphosphate; (4) solution of chloride of magnesium. These substances are added separately, in tanks provided with stirring apparatus, and they are apportioned by small metal cups attached to an endless band. After this treatment the mixture passes along an open channel into one or the other of a set of three depositing tanks, where the solids subside, and a tolerably clear liquid is decanted off and passed through a peat-filter. The sludge is also run on to a layer of peat to drain, and when all the liquid has been strained away it is converted into poudrette manure in a special apparatus at a temperature of 70° centigrade. The clear liquid from the filters is allowed to flow into the sewers. Eleven different samples were examined in order to complete the inquiry; namely, the fæcal matters from each description of closet, the mixture of excreta in the tank before and after the addition of the chemicals, the supernatant fluid and the sludge from the depositing tanks, the peat and filtered liquid, the sludge and the liquid draining from the same, and the poudrette.

The author describes the mode of taking the samples, and the way in which the chemical analyses were conducted. The results are set forth in a tabulated form. The nature of the action of the precipitants, and the relative quantities of each substance employed are also inquired into. Three different sets of experiments were carried out, for reasons which are explained. A corresponding series of bacteriological investigations of the products obtained at each different stage of the process was conducted in the institute, and the number of germs present, which range from 150,000,000 per cubic centimetre in the fæcal matters in the dry-closet to 20,000 in the unused peat, are shown in the table. Each of the three sets of observations are described in detail, together with certain side issues, which arose out of the inquiry; namely, the disinfecting action of each of the different kinds of chemicals, and the extent to which the clarified effluent is liable to undergo further putrefaction.

The general results of the investigation are summed up in a series of eleven conclusions, from which it follows that the process is capable of completely removing all suspended matters; but it produces but little effect upon the soluble ingredients, especially the nitrogenous substances and the ammonia. The chemical action is almost entirely due to the added lime. The treatment has a certain disinfecting action upon the sewage, and leads to a most marked reduction of the micro-organisms in the effluent: the sludge, on the contrary, remains in this respect but little affected. Other conclusions have reference to the liability of the effluent to putrefy, and to the imperfect degree of disinfection attained in the case of the poudrette. It is laid down that the effluent should not, without further treatment, be passed into the sewers, and the peat-filtration process is declared to be a disadvantage rather than otherwise.

THE POLLUTION OF THE RIVER ISAR AT MUNICH.[8]

In the course of an inquiry as to the sewerage of Munich, it was desirable to determine the effect of sewage pollution upon the river. Dr. von Widenmayer and Professor von Pettenkofer found that the amount of fæcal matters discharged into the Isar produces little permanent pollution, and that it would be possible to adopt a water-carriage system of sewerage for Munich, without the interposition of depositing tanks or filtering beds. It is a fact that the river is much more free from pollution when it is low than when it is high. It is shown that the 280,000 inhabitants of Munich could only raise the organic matter in one litre of the water of the Isar, at the abnormally low level of a discharge of only 40 cubic metres a second, by seven milligrammes. It is also shown that the solid residue can have nothing to do with excremental pollution, and Professor Pettenkofer asserts that he retreats from his previously expressed opinion that the sewage of Munich would have an injurious effect upon the Isar, and he believes that no injurious results will ensue from the discharge of the raw sewage into the river. He undertakes to prove on a future occasion that the bacteriological investigations do not support the theories of the opponents of the water-carriage system.

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[7] B. Proskauer: Zeitschrift für Hygiene, x, 1891.

[8] Prof. M. von Pettenkofer: Deutsche Bauzeitung, February 18, 1891.

SEWERAGE OF MUNICH.[9]

The question as to the sewerage and sewage-disposal of Munich, which has been so much debated, has been finally settled in favor of the water-carriage system, and the scheme only awaits the Government sanction to be put in force. Under the plan adopted, though provision is made for the ultimate employment of filter-beds or tanks, if such should prove necessary, it is proposed to discharge the raw sewage into the Isar, with a tank near the outfall for the retention of floating impurities.

The author reviews a series of publications relating to this subject, and sums up his observations in the following conclusions:

(1) The investigations hitherto conducted into the self-purifying powers of rivers do not warrant any finite verdict respecting the admissibility of the direct introduction of the Munich sewage into the Isar, since too little is yet known of the life-habits of bacteria, more especially of those which are pathogenic.

(2) But the investigations have rendered it evident that, owing to the favorable local conditions which here exist, an experiment may be carried out on a large scale without exposing the towns situated on the River Isar to any material danger.

(3) In the present case this experiment can, if necessary, readily be abandoned, as the site of the sewage outfall renders it possible at once to resort to sewage irrigation.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, January 25, 1892, Dr. C. F. Folsom, Chairman *pro tem.*, presiding.

ORAL COMMUNICATIONS.

TREMOR OF PARALYSIS AGITANS.

Dr. Morton Prince: I have here a case which I would like to show, and which is to me one of considerable interest. It is interesting from several points of view. One is that of the diagnosis. This man has, as you see, a curious tremor of the right hand. The character of the tremor is such that, at first sight, if he had been an older man, it might possibly have been mistaken for paralysis agitans. It is a case of "tremor of paralysis agitans" following hemiplegia; and I say that, although there is no hemiplegia at the present time. These motor disturbances following hemiplegia are very common, and this particular kind is very well recognized, but in my experience it is comparatively rare. You will notice that the tremor persists while the hand is at rest and that he can control it by strong muscular effort. Volitional action does not increase it. Although I have seen many cases of hemiplegia, I have seen very few cases of this particular kind of tremor. The leg is also affected, so that at times, especially when in a constrained position, the knee will oscillate backwards and forwards. I say it is a case of hemiplegic tremor, although there is apparently no hemiplegia present. The knee-jerks are not increased. The superficial reflexes are not diminished on the right side, and yet I think it is or was a case of hemiplegia, partially from the history and partially from other symptoms still present. If he smiles the left side of his face moves before the right side. When he was first attacked the mouth was pulled to the left. This paralysis has disappeared, but still there is a tendency of the left side of the face to smile first. The right leg, when the patellar tendon is struck, kicks a little quicker than the left leg. Another peculiarity of the case is this: he insists that this tremor come on immediately after a "drunk"; that he waked up in the morning and found his right arm and hand in the same condition that it is now. He is very positive that there was no paralysis at that time, but at the same time I think there probably was some weakness. But the fact that this tremor should have come on in the course of a night, so to speak, is, I think, rather unusual and extraordinary.

A practical question has arisen in connection with this, and one on which I should be glad to receive suggestions; namely, the location of the lesion. Is the lesion in one of the deeper nuclei of the brains, the optic thalamus, or is it cortical? Now, in those cases that have hitherto been reported, lesions have been found in both these situations; although the majority have been in the optic thalamus; but there is a case on record where there was atrophy of the motor convolutions, and to the naked eye no lesion whatsoever in the optic thalamus could be detected. The evidence would seem to show that it is possible that it may be in either of these situations, although I am inclined to believe that the internal capsule cannot be involved in this case. If it is in the optic thalamus, it does not involve the internal capsule.

When I was in London last summer, I saw a case in Mr. Horsley's ward which had been operated on by him. He had removed a portion of the cortex. The patient was in bed at the time, and I do not know what the further result of the case was, but it was evidently considered that the lesion was in the cortex. If there is warrant in thinking that, this case would seem to hold out a certain promise of relief from operation. The patient himself says that the right hand is at present of very little use to him. He says he would be willing to take a certain amount of paralysis if he could regain control of the muscles. The question arises whether there is any likelihood of being able to relieve such a case as this by operation on the cortex. The motion persists during sleep, I think.

TUMOR OF CÆCUM CAUSING INTUSSUSCEPTION.

Dr. M. H. Richardson: I have a very rare specimen which I removed from the cæcum a few days ago. It is a lipoma which grew from the internal surface of the cæcum by a broad base. As will be seen, the tumor is so large that it nearly fills the normal ascending colon. The upper part of the tumor became grasped by the muscular fibres of the intestinal wall and the whole was forced along dragging the caput cæci behind. In this way an intussusception was started which soon became extreme and required surgical interference.

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[9] A. Frank: Gesundheits Ingenieur, 1891, p. 281.

The patient, C. P., a man of fifty-two years of age, had been in good health, although not robust. At the age of twelve, he had had what was called a bilious colic, and at one time, while young, there was a prolapse of the rectum, upon the surface of which there was said to be a small tumor.

Ten days before I was called to see this man he was taken with what was thought to be the grippe. After a week of slight illness, he was seized with violent pain in the lower part of the abdomen. He had taken a pill of rhubarb the day before and had had a good movement of the bowels at six o'clock Monday morning. During the day his stools, which were rather frequent, began to contain blood. The pain was controlled by morphia. His general condition improved during Monday night and Tuesday morning, although the pain was at times severe. The bloody stools also continued accompanied by occasional attacks of hiccough, but no vomiting.

I first saw him at South Hanover in consultation with Dr. MacMillan, the attending physician, on Tuesday afternoon. At that time his symptoms had improved so much that he expressed himself as feeling well enough to get up and go to his business. By physical examination nothing whatever could be discovered except a fulness in the left hypochondrium, suggesting a distended coil of intestine. It seemed at that time possible that there might be some acute obstruction, but the man's condition was so good as to make operative interference seem meddlesome. During the night, and the following day, there was no passage from the bowels except a fluid which was odorless and darkly tinged with blood.

On the next day, Wednesday, Dr. R. H. Fitz saw the case in consultation and advised, on the whole, a laparotomy, on the ground that the man's chances seemed better than to try longer palliative treatment. His diagnosis was intussusception or a twist. On opening the abdomen, bloody serum escaped. A mass was found resembling a kidney at the beginning of the sigmoid flexure. Exploring farther with the hand, the distended and tense coils of the large intestine could be made out. The incision was enlarged and it was found that there was an intussusception starting at the ileo-cæcal valve. The invaginated bowel had advanced as far as the sigmoid flexure. The mesenteric attachment of the small intestine was so tense as to suggest the ring-pillars of strangulated hernia. After about forty minutes' effort, during which the patient's condition continued to be remarkably good, the invagination was reduced. This was accomplished only with the greatest difficulty and not till I had about concluded to give up all efforts at reduction and to make an artificial anus. It was accomplished finally by pressing back the invaginated portion by a sort of milking process. When the cæcum was delivered it was found to contain some unusual mass. I opened the bowel by longitudinal incision and found a pear-shaped tumor, broadly pediculated, attached to the mucous surface of the cæcum below and to the right of the ileo-cæcal valve. It was large enough to entirely fill the cavity of the cæcum. The base of the tumor bled freely and required the application of continuous silk suture. The cæcum was closed by the interrupted Lembert stitch. Everything was replaced and the line of suture protected by iodoform gauze.

Immediately after the operation the patient's condition became alarming, and it was only after prolonged efforts on the part of Dr. MacMillan that he rallied. On the following morning his condition was very good indeed. There was no vomiting, and the hiccough, which had been very persistent before the operation, had disappeared. I saw him again the following night and found his general condition reassuring except that his pulse was rapid. During the night he failed and died. There was no autopsy.

The tumor, examined by Drs. Fitz and Whitney after removal, was found to be a polypoid lipoma.

Dr. C. L. Scudder read a paper on

THE MANAGEMENT OF COMPOUND DISLOCATIONS OF THE ANKLE-JOINT.[1]

Dr. Abner Post showed

TWO CASES OF COMPOUND FRACTURE AND DISLOCATION AT THE ANKLE-JOINT,[2]

which occurred, respectively, a year and a half and four years ago.

The first patient, who had lost a portion of the astragalus, walked about the level floor without perceptible limp, but showed considerable disability in going up and down the steps of the hall.

The second case was one in which the tibia had projected through a wound over the inner malleolus. The accident occurred four years previous, and the patient was forty years old at the time. The patient demonstrated the movement at the ankle-joint in all directions, and said that he could see no difference between the two feet.

Dr. A. L. Mason read a paper entitled

NOTES ON TYPHOID FROM 670 CASES AT THE BOSTON CITY HOSPITAL IN 1890 AND 1891.[3]

Dr. Geo. B. Shattuck: It is true that figures in themselves are apt to be dry; but if they show us that we have made a decided progress from the past, and if they point out how we may make progress in the future with reference to practical results in the improvement of treatment of a disease which is so constant as typhoid fever, and which is with us always, as one may literally say in our large cities now, then figures are not dry. I think that none of us have found that Dr. Mason's paper was dry. On the contrary, it was very interesting and instructive. As well as I remember, Dr. Upham's series of cases (1864–1870), which he tabulated for the City Hospital, gave a mortality of something like fourteen per cent., and even if we make no reductions whatever from the cases reported by Dr. Mason, that shows that we have at least kept pace with the tendency to improvement in the death-rate from this disease, which he says, and rightly, is to be found all over the world; and I think we not only have kept pace with it, but more than that.

Of course, the interesting practical point upon which these figures have a bearing is that of the treatment of typhoid fever by Brand's method, whether it should be adopted by us or not. I think that Dr. Mason's paper is a much more reasonable and rational paper and one which certainly, individually I may say, wins my confidence more than that of a great many utterances which have been made in regard to this subject. It seems to me there is nothing in regard to which the proverbial fallacy of statistics may be so applicable as that of any one system of treatment to a disease like typhoid fever, and I think we must take all the statistics with reference to Brand's method with a great deal of caution. Now, if it can be shown that that method or any other will produce a diminution in the death-rate of this disease of two per cent. or more, then it is our duty to adopt the method, whatever the inconvenience and the cost may be. At the same time, it seems to me that it is not injudicious that we should perhaps allow other hospitals and other cities to prove that for us in this country. Certainly the material which we have to deal with, its outside surroundings, the time of admission to the hospital, and our facilities for applying the method,—all these factors differ very much from those which obtain abroad; and it is therefore necessary that the method should be tested especially for us here, and that being the case, it is, it seems to me, as I said, not injudicious that we should allow others to test it for us if they are willing to do so. In New York at Bellevue, in Philadelphia at the German Hospital and elsewhere, they seem disposed to try it. Of course, there are two questions with reference to the adoption of that method. One is the question of therapeutics; the other is the question of hospital administration. If there are only a certain number of reliable attendants who can be secured for any given hospital service, and if there is only a certain amount of money disposable for a hospital service, then I must frankly say that if it is a question between being deprived of either liberality in the way of nourishment and stimulants and other therapeutic measures and of good nursing, — if we have to choose between this and the application of the cold-water treatment according to Brand's method, — I should certainly prefer to have the first mentioned rather than the second. If the hospital facilities and the hospital funds and the hospital administration will permit of both, and it is satisfactorily proved for us in this country that the Brand method will reduce the mortality in our hospital cases by two per cent., then it seems to me that we must have it, and if it is proved that the mortality can be reduced by two per cent., the profession is in such a position and the public is in such a position, that they can demand from municipalities and boards of trustees that sufficient provisions should be made for all necessities as they arise under those circumstances.

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[1] See page 334 of the Journal.

[2] These cases are reported more fully on page 335 of the Journal.

[3] See page 329 of the Journal.

If we deduct, as Dr. Mason suggests, the cases which are inevitably fatal, which come in late and die early after admission, and deduct the cases giving a large percentage from intestinal complications such as perforation and hæmorrhage — and the ratio at the City Hospital from perforation was a very large one — of course, it reduces the mortality very much indeed, a mortality which is already favorable. I do not think to-day it is claimed by impartial observers with reference to Brand's treatment that his method does reduce these two important and constant factors of hæmorrhage and perforation. There is one other thing to be said about it, that those who advocate his method began by claiming that it was successful on account of combating the hyperpyrexia. Then it was claimed it was successful on account of some mysterious and yet unexplained influence upon the nervous centres. What precisely that action is, has not so far been explained; but all the advocates, Brand himself and all the advocates of his method, constantly reiterate that, in order to have it successful, and in order to have a fair test of the method, it should be applied from the very early stages of the disease, and that is where he has his advantage in dealing with the army cases, not simply that they are young and vigorous, but also he is able to take them from the beginning. Well, that we never can do in our municipal hospitals. The patients come in late, or if they do not come in late, they come in, as Dr. Mason suggests, because they are particularly severe cases. Now, according to the claims of the advocates of this method, a very large percentage of our cases are not suitable subjects for that method; and if the application of the method is unsuccessful in our cases, then the answer is that they were not taken early enough. Then there is a great number of the cases taken very early in the very first days of their symptoms, in regard to which the diagnosis cannot possibly be a positive one, and never would be a positive one if they are rapidly cured. I entirely agree with what Dr. Mason has said in regard to the small value of conclusions drawn from a few cases, and have but very little confidence in intestinal antisepsis.

Dr. F. H. Williams: I have been very much interested in Dr. Mason's paper. Dr. Shattuck has discussed it in its broader features, and there hardly remains anything for me to say except to speak of one or two details. I am very glad to be able to confirm Dr. Mason's observations in regard to the use of hydronaphthalin. It seems to me the intestinal symptoms are decidedly milder, there is less diarrhœa, less distension of the abdomen, and the patients are rather more comfortable with hydronaphthalin than without it. With the hydronaphthalin I used a special food through the co-operation of Dr. Rowe, with whom I arranged to use evaporated milk, that is, milk prepared in a way which enables one to give it to a patient in a fresher and better condition than one usually can do. That was used in the typhoid cases during the two months of the service I had last summer. I have not observed a great deal of difference between the hydronaphthalin with and without the evaporated milk. The number of cases, however, was not large enough to base an opinion on.

Dr. C. P. Putnam: With regard to the source of the contagion, do not the records show where the patient had been a short time previous to entrance, or were the statements only taken from his residence?

Dr. Mason: The statement I made was only with reference to the residence of the fatal cases. There was not time to investigate the whole series, so that I cannot answer that question. There was but one fatal case that came from a distant town. The great majority had lived in the city.

Dr. Geo. B. Shattuck: Since Dr. McCollom read his paper some weeks ago I have questioned my patients pretty carefully as to whether, though residents of Boston, they went to picnics outside, and especially to one dangerous locality, and I have found that only two or three had been to such picnics.

Dr. Mason: When I was in Germany twenty years ago, this matter of cold baths interested me, and it was then that this second edition of Brand was published. Other works were written by Ziemssen, Bartals and Liebermeister. I found that the results varied much in different cities. There was a great difference between the results in Berlin and Vienna, where the method had been tried on a comparatively small scale but without reduction in the mortality; still it has always seemed to me a rational procedure. We recognize the desirability of cold water, of hydrotherapeutics; and I think that if we are going to bathe at all, we might as well use the easiest and most efficient method. It certainly is less trouble for ward attendants to put the patient into the tub-bath and let him lie there than to sponge him fifteen or twenty minutes.

Dr. G. W. Gay reported

THREE CASES OF ŒSOPHAGOTOMY.[4]

Dr. Richardson: I would like to know whether in these very interesting cases Dr. Gay made any efforts to detach the foreign body and remove it by the mouth. I think that reasonable attempts should be made in this direction, unless there is some very good reason for not doing so. A few years ago a man came to me with a plate of teeth which had been impacted in his œsophagus eleven months. I made careful observations as to its situation and distance from the incisors. I found that the plate was about opposite the transverse portion of the arch of the aorta, and could probably be reached easily by external œsophagotomy. In testing the firmness of the contraction by means of the coin probang, the plate was detached and removed with the greatest ease. I should therefore think it worth while in all similar cases to make some attempt at removal by the mouth.

There is some danger in the use of the coin probang, especially in attempting to detach plates of teeth. In the first case of the kind which came under my observation, attempts had been made to detach the plate by means of this instrument. The probang got caught in the plate in such a manner that it was impossible either to remove the plate or detach the instrument. The plate had been impacted nearly a year and had become so firmly imbedded that the end of the probang broke off without producing any sensible change in the position of the plate. I believe it is a good plan to make such efforts, however, unless the foreign body has sharp points, or has been very long imbedded. In the latter case, as I have already stated, it seems to me worth while to make gentle attempts. But it must be borne in mind in the use of an instrument like the coin probang, that if it is once fast to the foreign body it may be impossible to detach it, as in the case already referred to; then something must give way — either the instrument, the foreign body, or the part in which it is imbedded. If the foreign body is impacted at the common place — the beginning of the œsophagus — there is less danger of serious injury to the surrounding parts than where it lies deep within the thorax. In some portions of the thorax, and, in fact, in all portions of its course below the aorta, the œsophagus is in very close contact with the heart or with some portion of the aorta itself. It is obvious that violent efforts at removal are very dangerous indeed, and that sudden death may take place during the course of these manipulations. In such cases it is certainly better to follow the plan of Dr. Gay, and to remove the foreign body by opening the œsophagus, and by intelligent manipulations, than to make any efforts at detachment through the mouth. Even when no attempts have been made to remove foreign bodies by the mouth, numerous cases have resulted in ulceration into the aorta, posterior mediastium or pleural cavity. In doubtful cases it certainly seems better to perform external œsophagotomy or gastrotomy. External œsophagotomy is one of the most beautiful operations that we have, and now that so much better results follow methods of aseptic surgery, we are justified in making attempts at removal by intelligent dissection and demonstration of the seat and position of the foreign body. I have never observed any bad results from the impaction of foreign bodies in the œsophagus, but such is not the usual experience. Where urgent symptoms exist, as in the cases previously reported by Dr. Gay and Dr. Cheever, I believe that immediate operative interference is imperative.

Dr. Gay: The little girl was well in three weeks, and the man lived two months with comparative relief. Towards the end of life we did tracheotomy to relieve the dyspnœa from the pressure of the growth. It did some little good, but not very much.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of February 2, 1892, the President Dr. L. G. Gray, in the Chair.

PACHYMENINGITIS AND MYELITIS.

Dr. Mary Putnam Jacobi read an account of a case of this condition which was at first supposed to be due to a Pott's disease, but where a solid tumor had developed against the spine during the last weeks of life, and was diagnosed as sarcoma. The case was compared with one related by Dr. Gee in the St. Bartholomew Hospital report, and close resemblances pointed out between them. In Dr. Gee's case the sarcomatous nature of the disease was demonstrated by an autopsy which could not be obtained in the case under discussion.

Dr. C. A. Herter thought it unfortunate that no autopsy had been made in the case reported by Dr. Jacobi as the diagnosis seemed open to a good deal of speculation. There was apparently no justification for the assumption that two lesions existed and a single one would explain the symptoms. This lesion may have been one of sarcoma or tubercular disease, and it would be difficult to determine which; the existence of malignant disease was probably out of the question.

Dr. W. H. Thomson disagreed with the last speaker. The chief point of interest was in the fact that there may have been two distinct lesions in the cord, presenting in their symptoms the contrast in the nature of the lesions. It was well known that in the case of tumors pressing upon the cord there was present as a symptom local pain, especially on movement of the parts. Transverse myelitis there would present this kind of pain, and unless accompanied by distinct meningitis there would be no irritation of nerve roots. Therefore, according to description, there might have been two conditions of the cord occurring in the same patient. The symptoms developing afterwards in the legs were the sequelæ of transverse myelitis. Finally, the effect of the presence of a tumor invading and spreading into the tissues was simply pressure at that point.

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[4] See page 332 of the Journal.

Dr. B. Sachs doubted if in the majority of cases there was myelitis associated with the presence of a tumor, though in a tuberculous case these sometimes occurred. Tubercular myelitis was distinguished by being more destructive to the substance of the cord than other forms.

Dr. Jacobi said that the reason for supposing that there was a second lesion differing from the original one was the persistence of the epigastric reflexes. It was presumed that there was a tumor of the cord beginning in the first dorsal vertebra, causing a pachymeningitis at that point, followed by a meningitis.

THE SURGICAL TREATMENT OF EPILEPSY,

by Dr. Joseph Price, of Philadelpia.

Epilepsy was defined as an apyretic nervous affection, characterized by seizures of loss of consciousness with tonic or clonic convulsions. Its history from a therapeutic standpoint was one that taxed the efforts of supremest superstition and defied the sources of scientific medication. Its treatment had been one of trial and disappointment, for it still remained one of the greatest opprobria of medicine. Its attacks were visited upon both sexes, hystero epilepsy for the most part being confined to females. This latter class were attacked when a marriageable age was reached. Debauchery had frequently led to it.

Young widows were prone to attacks, and its origin, outside of physical causes, might be traced to amorous songs and certain stimulants, such as chocolate and coffee. For its cure various suggestions had been made, among other things that of resorting to venery. It had, however, been abundantly proven that excessive lust had produced epilepsy, and was no doubt yet to be recognized as a great factor in its causation. That it was transmissible did not admit of dispute, any more that that it was caused by traumatism. Operative interference in the traumatic cases, for the removal of the cause was both logical and often successful. The operation of clitoridectomy had brought Baker Brown into disrepute, and yet we had to-day no less a person than Lawson Tait boldly expressing the opinion that here was doubtless a place for the operation. The belief that a moral element must be reached in addition to the physical interference was no doubt justified by the facts. One table that the author had consulted gave as high as 73.7% of cases cured of masturbation, by clitoridectomy.

This surely made it not presumptive in its claims for recognition. Epilepsy in women appeared to be more fatal than in men. The acquired epileptic habit was more fatal than the congenital. In the congenital it was two to one, and the acquired three to four, fatalities in women, to one in man. As to the inheritance of the disease, it was sufficient to note that among epileptics marriage should be discouraged. The history of eunuchism as a preventive of epileptic propagation and also the edicts forbidding their marriage were of interest to the student of law as well as to the theologian and physician.

In the treatment of epilepsy proper there was no doubt that surgery must form an important factor in the hope of cure, whether done for direct traumatic results or for the removal of reflex causes. In entering upon the consideration of the removal of the appendages in women for the cure of epilepsy it was unnecessary to take up in detail the history of castration as practised upon the male for the same purpose. Suffice to say that the history of this operation, both from a priestly standpoint and from a carnal or musical standpoint was often instructive and oftener horrifying. The mortality was often simply terrible, while the practice of mutilating children to preserve their voices for song, marked an era of refined religious cruelty scarcely conceivable. So far as the surgery of the disease was concerned, in a general way operation had the best of the argument. Out of 71 cases treated medically, and out of a second series of 71 treated surgically, statistics showed that of the surgical treatment all were at least benefited, while the medical series, a great proportion showed no effect at all from treatment, and in others the conditions were aggravated. In a general surgical way then, if operation was beneficial when it could be directly traced to the ovaries or their diseases, logical deduction would seem to indicate that beneficial results might at least be hoped for. So far as unsexing an epileptic was concerned, the author did not understand how or why there was reason to feel compunction at such a suggestion. He could hardly question the protective value to society not only of forbidding epileptics to marry, but of rendering them unable to procreate. A wise legislation would of course be needed, to prevent abuse, but the essential right of society to protect itself ought not to be questioned.

Going aside from the actually demonstrable disease, what was to be done in the presence of epilepsy where disease was doubtful?

If we had an unmarried woman in whom every menstrual period, from the initiation of her puberty to the time that she came under the physician's care, was marked by an epileptic seizure, who at other times was entirely free from attacks and showed no tendency to fall into them, who recovered as soon as the period was over and who had no other demonstrable disease, or probable cause of seizures than her monthly irritation, it seemed there was little doubt that operation was justifiable. Unless we could thus pin down the seizures to definite time and cause, the author held that it was wrong to burden surgery with a class of cases that could only fail to detract from its good name, while it did no possible good to the individual. If ovarian disease was found to be the cause of the epileptic seizures it was of no use to do a partial removal and expect relief or cure. The effect obtained might be due to either one or two causes; first to the removal of an irritable or diseased organ whose presence stirred up the reflexes into a commotion, or the relief might be due to the excitation by operation of a different epilepto-genic zone. Charcot had laid down as a principle that irritation of one epileptic zone might be relieved by irritation or pressure upon another. Assuming it as a fact that the disease was often a reflex manifestation of a local trouble, it followed that in those diseases in which deposits were found as a result of systemic affection, resort should be had to recognized remedies, and the chances for effecting a cure were equal with those of surgical cases where operative interference was resorted to.

Dr. H. J. Boldt, in opening the discussion of Dr. Price's paper, thought that some nervous diseases might be due to menstrual disorders, but they were not numerous. The removal of adnexa was one of the gravest operations in surgery, both in its medical and medico-legal aspects. It was most important to select cases. When absolute pathological conditions were present, and treatment had been carried on unsuccessfully by all the methods known to the profession, and when the gross lesion could be discovered to be present in the adnexa, then operation was perhaps justifiable, and good results might accrue. If the epileptic attacks were restricted to the menstrual period, and it was concluded that the prime cause lay in the adnexa, then operation might be resorted to, but little else but bad results was to be expected.

Dr. G. M. Hammond thought that two points should be borne in mind, the establishment of the epileptic habit, and the influence of pathological conditions of the uterus and ovaries in producing epilepsy. The fact that operations performed on the brain for the relief of epilepsy when there existed a well-defined lesion were not in the majority of cases followed by cure of the seizures was well known now. The habit persisted, and many of the cases so operated upon were reported cured too soon. The condition was in fact only abated or dormant for a more or less limited period. As to the influence of abnormalities of the genital apparatus in the production of epilepsy, it seemed to the speaker that those of the uterus were more potent than those of the ovaries. Lacerations, malpositions and inflammations of the uterus were more likely to cause epileptic seizures than irritation of the ovaries. At a time when gynæcologists were removing ovaries by the bushel, the speaker had sought to inform himself of some of the results by writing to a number of asylums. The questions put were as to the cases of melancholia in which operation had been done. He had received a stock of reports. The consensus of opinion was to the effect that epilepsy and insanity had not been relieved by removal of the ovaries. As to the effect of ovariotomy in producing insanity, he had seen four or five cases of epilepsy and hystero-epilepsy come on in a few days after ovariotomy was performed. Others had met with the same experience. While he had seen some cases of insanity and melancholia recover after relief from uterine irritation, he had never seen such result follow ovariotomy.

Dr. Buckmeister said it was hardly fair to call epilepsy a disease. It was a collection of symptoms which had no anatomical basis. It was influenced by irritation of all kinds, and naturally those produced in the reproductive organs would be of the most marked character, though observers were not agreed upon the exact role which these organs played in this respect. The previous speaker was probably correct in assuming that more irritation could arise from injuries of the uterus than from lesions in the tubes or ovaries. Evidence was so strong that no good was accomplished by ovariotomy in the conditions under consideration that the operation was to be condemned.

Dr. W. M. Polk said his experience of the results of operations for the cure of hystero-epilepsy was limited to three cases and was not such as to embolden him to continue the procedure. Two of the patients had become insane, and the third one was in a distressing condition of nervous irritability. Epilepsy was still really a fruitful field for investigation. It must be remembered that eighty per cent. of women were stated to be hysterical.

A large amount of epilepsy was known to be due to peripheral irritation, and there was no reason why the ovaries should not set up some of this. If they did this, they should be taken out.

Dr. Sachs had seen a number of cases in which operation had been done, and with no effect upon the epilepsy. It was a mistake to remove ovaries because the patient had epilepsy at the menstrual period. If it could be proven that the person had no congenital epilepsy, and that the first attack came on with menstruation and had occurred constantly since, but only at the menstrual period, there might be some fair reason to remove some of the sexual organs. Because a woman was an epileptic and had sensitive organs which could be removed, was a ridiculous argument in favor of the removal.

Dr. L. Weber did not take the view that the irritation following lacerations of the uterus was a cause of epilepsy. In a large experience of twenty-eight years he had never seen more than two cases in which the epileptic condition had been thus induced unless there was a history of hysterical or epileptoid taint before the age of puberty. He believed that true epilepsy acquired from lesions of the genital organs was a rare condition. He would only give his consent to operation interference on very narrow grounds, and where there was a fair hope that by removal of the ovary the condition could be cured.

Dr. Buckmeister explained that he did not mean that injuries to the uterus following parturition were active in producing epilepsy, but that of all lesions to the reproductive organs these were most likely to act as irritants, and were, therefore, quite likely to result in the nervous condition under discussion.

The President said that all neurologists were agreed that what was called the epileptic state was nothing more than a symptom indicating intra-cranial disturbance, spinal or peripheral nerve irritation, or inflammation of the visceral nerves. The most frequent source of the symptom lay in intra-cranial disorders. Spinal epilepsy was rare as was also that arising from peripheral irritation. How important a part the abdominal nervous system played was not quite known. But the most uncertain of all was the influence of the female organs in producing the epileptic symptom. At any rate there was not a single reputable record of the cure of epilepsy; not one that would stand the test of examination. To report relief for a few months, or even a few years, was to report nothing; and this was all that had been done. Almost every therapeutic or surgical measure had done good, but there was nothing more in the way of cure reported by modern effort than could be found chronicled by Escarol in 1828.

Dr. Price closed the discussion by reiterating his opinion that permanent benefit was possible in properly selected cases.

Ancient Hindu Vaccination. — At a meeting of the Epidemiological Society (*Lancet*, February 29, 1892). Dr. Pringle quoted a remarkable passage from an ancient Hindu work, which showed that true vaccination was known and practised in India centuries before the birth of Jenner: "The small-pox produced *from the udder of the cow* will be of the same mild nature as the original disease . . . the pock should be of a good color, filled with a *clear* liquid, and surrounded by a circle of red. . . . There will be only a slight fever of one, two or three days, but no fear need be entertained of small-pox so long as life endures."

Recent Literature.

A Manual of Practical Hygiene. By E. A. Parkes, M.D., F.R.S. Eighth edition, pp. 769. Edited by J. Lane Motter, M.A., M.D. Philadelphia: P. Blakiston, Son & Co. 1891.

There is no more progressive department of the science of medicine than that which relates to public hygiene, a fact which is shown in the demand for frequent revisions of practical standard works upon the subject.

The editions of this excellent work which were issued after Dr. Parkes's death in 1876, were edited by Professor De Charmont, whose rich experience added great value to the work.

The present editor has brought the work down to date by the careful addition of new and important matter, and the omission of such as had become obsolete.

The arrangement of the contents has been slightly changed from that of the earlier editions, and the chapters are as follows: 1. Soils; 2. Water; 3. Removal of Excreta; 4. Air; 5. Ventilation; 6. Habitations; 7. Warming of Houses; 8. Food; 9. Quality, Choice and Cooking of Food; 10. Beverages and Condiments; 11. Exercise; 12. Clothing; 13. Individual Hygiene; 14. Disposal of the Dead; 15. Climate; 16. Meteorology; 17. Disinfection; 18. Prevention of Disease.

The second part is devoted to military hygiene, and the third part to chemical and microscopic examination.

Lessons in the Diagnosis and Treatment of Eye Diseases. By Casey A. Wood, M.D. With numerous wood-cuts. 12mo, 154 pp. Detroit, Mich.: George S. Davis.

This little book is one of the leisure-hour series, and while it necessarily suffers from the attempt to put much into small space, nevertheless it is the best of the numerous small hand-books which have been issued in later years. For its purpose, as an aid to the general practitioner without taking too much time to "look the matter up," it will no doubt serve a useful purpose.

The Complete Medical Formulary and Physician's Vade-Mecum. Containing more than 2,500 prescriptions, also a special list of new drugs with their dosage, solubilities and therapeutic applications, together with a large number of other tables. Collated for the use of practitioners, by J. C. Wilson, A.M., M.D., Physician to the German Hospital. Philadelphia: J. B. Lippincott & Co. 1892.

This volume, as its name implies, is a collection of prescriptions arranged under the head of diseases. The prescriptions are taken from a large number of authorities, in all cases credit is given to the authority. There are also several tables containing useful information. Except for these the book may be said to be nothing but prescriptions, without any reading matter whatever. It is to be hoped that few practitioners would rely upon such a compilation to any extent. On the other hand, it might be useful to any physician as an occasional reference or inspiration. Although it is bound in the form of a book for the pocket, it would be found bulky to carry in anything smaller than an overcoat.

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THE OBLIGATIONS OF MEDICINE TO PHYSIOLOGY, AND OF PHYSIOLOGY TO MEDICINE.

The dependence of medicine, both as a science and an art, on physiology is everywhere recognized. Disease is but a disturbance of the normal conditions of the organism, and the aim of the physician must always be to restore the physiological integrity. If this proposition be sound, then medicine must advance *pari passu* with physiology, This will be found to be true of ages when physiology was unprogressive; medicine was at a standstill or pursuing empirical *ignes fatui.* Out of innumerable instances we will cite only one — the senseless infatuation for bleeding of a former generation. If bleeding as a routine therapeutic measure in the treatment of acute inflammatory affections has gone out of use, this is chiefly because it has been found opposed to the teachings of an enlightened physiology.

If physiology has made any progress in any age, such progress has been accomplished through experiment, and largely through experiments on animals. It is quite possible for a physiology to be founded on observation alone, but such a physiology could not get beyond a few simple rules respecting the conditions of function, or in any way satisfy human needs. The same may be said of "the medicine of observation" — to use an expression of Claude Bernard. Notwithstanding the large debt which we owe to clinical observation, which has laid the foundation of our knowledge of diseases, it is evident that its status and its progress lie wholly within the domain of empiricism.

These truths are sufficiently familiar to medical men, and the illustrations are abundant. Among those most often cited to prove the utility of vivisection are the discovery of the circulation of the blood in the seventeenth century, and the bacteriological discoveries of the present epoch; no one pretends that these discoveries and the consequences flowing therefrom, so important to medical and surgical therapeutics, could ever have been brought about without vivisection. The opposition to vivisection has never come from medical men: if the anti-vivisectionist party has been able to attract to its ranks, here and there, a physician of some note, such support has been tendered from sentimental, political or other purely selfish consideration, rather than from any devotion to science or any principle of liberal humanitarianism.

The rank and file of the medical profession are united in approbation of the work of the experimental physiologists, and recognize the fact that too few, rather than too many, have the time, the means and the ability to engage in original researches whose practical outcome is helpful to science and beneficial to humanity. Physicians should be the educators of society in matters connected with the progress of medicine by experimentation, and if from time to time they have to acknowledge their remissness in this respect, they are ready to welcome the aid of lay writers, who, like the Rev. Lionel J. Wallace in the *Westminster Review* for March, 1892, have set forth the advantages accruing to mankind from vivisection.

It may not be that we are in any special danger from anti-vivisection legislation in this country, but cranks of the same nature abound here as have inflicted on Great Britain an obstructive enactment whose effects in stifling original investigation are keenly felt by our transatlantic *confrères*.

Rev. Dr. Wallace, in the *Review* aforesaid, begins with the twofold inquiry concerning vivisection; Is it useful? Is it moral? With regard to the first, he urges, with Darwin, that physiology can progress only by the aid of experiments on living animals. This is proved by contrasting the past with the present. Accounts of old-fashioned surgery read like a bad dream. Boiling pitch or oil, red-hot knives, corrosive sublimate used to stop the hæmorrhages from wounds, and in four out of five cases used in vain, made the surgery of our forefathers horrible. If the luckless patient survived the actual operation and escaped bleeding to death, he very often succumbed to fever, or mortification ensuing on the violent means employed for his cure. Everything is now changed. During the insensibility induced by an anæsthetic, the knife does its work swiftly and cleanly; the severed vessels are securely tied; the wound dressed antiseptically, and the patient awakes as from a sleep. That this change has been mainly owing to knowledge acquired by vivisection, Mr. Wallace next shows. He goes back to the immortal discovery of Harvey, which never could have been demonstrated without vivisection, and he then appeals to the writings of Jean Louis Petit, of Ambrose Paré, of John Hunter, etc., who admit that by means of the help obtained from experiments on living animals, all their most momentous discoveries were made. "By carefully conducted amputations performed on dogs, the best method of tying the great vessels and preventing excessive hæmorrhage were found; an experiment on the antlers of a stag suggested some of the resources of collateral circulation: ligatures bound around the arteries of dogs confirmed the facts thus suggested. The successful accomplishment of a now not excessively rare operation, the excision of a part of the intestine, was rendered possible by an experiment on the living animal."

The writer next enters the domain of therapeutics, and shows how much we are indebted to experiments on animals for the knowledge which we now possess of the physiological and toxicological effects of strychnia, digitalis, chloral, aconite, strophanthus, and other drugs. That therapeutics has immensely benefited by this knowledge, no really sane person would deny.

It is in the domain of the nervous system that we now resort to vivisection. Mr. Wallace reviews the labors of Sir Charles Bell and of Claude Bernard, though he singularly enough omits all mention of Longet, Flourens, Magendie, Vulpian, Brown-Séquard and other French, besides numerous equally well known German, experimenters. After glancing at the practical outcome of those discoveries which have thrown a flood of light upon the functions of nearly every part of the nervous system, he takes up bacteriology with which present science is so much interested, and shows all the dependence of bacteriology on physiological experimentations. Into this subject we need not enter, as the readers of this Journal are sufficiently familiar with these investigations and their results to medicine, surgery, and obstetrics from a prophylactic and curative point of view. He now takes up the charge of immorality.

Briefly summed up, the arguments of the anti-vivisectionists appear to amount to this: That even granting that occasionally some good results have been gained by means of vivisection, the pain inflicted is altogether out of proportion to the results achieved; that, however, no results can justify man in inflicting excruciating agony upon any living creature, for in so doing he outrages one of the highest moral laws; besides which the practice tends to debase the mind and harden the heart, and it is of far more importance that the mind shall be pure and the heart tender than that a cure should be found for any bodily disease.

To which the vivisectionists reply: We deny that the pain inflicted is out of proportion to the results achieved; on the contrary, we assert (and we challenge our opponents to impugn the assertion) that the pain is trifling in comparison with the benefits conferred. A minority must always suffer for the majority, and so far from outraging any ethical law by sacrificing a certain number of animals, we believe that we would be guilty of a serious moral wrong if we abstained from this sacrifice, since by our experiments we may give relief to millions of men and beasts. While to stand idly watching the ravages of disease, which, by certain measures we might prevent or diminish, would certainly suggest and induce a condition of callousness and mental degradation. We have no right to withhold from suffering humanity any good thing which it is possible to give it.

The writer of the *Review* article believes that a great moral force is working on behalf of the physiologists. Suffering and death are on every side of them, and if, by any fair means, they can alleviate the one and retard the other, they have no right to neglect these means. They are, so far as their power extends, debtors to humanity, and they would act an immoral part if they declined to make any legitimate effort to discharge this debt. This the anti-vivisectionists will not see or will not acknowledge. They are not satisfied with merely denying the fairness of the means, but they deny the morality of the whole science, not perceiving that in so doing they place themselves in a serious dilemma. For none save the most bigoted would deny the lawfulness of putting an animal to death for some useful purpose. Few would refuse sanction to the infliction of a certain amount of pain if the object thus gained were good. The butcher is counted a respectable member of society though he puts many animals to death, and some of them by a method not essentially painless, because he kills them for food. If he were to slaughter them merely for amusement, or through sheer wantonness, he and his actions would at once become immoral. But if a single butcher were to do this, it would not lead any rational person to assert that the trade was an immoral one. The fact of one or a hundred physiologists experimenting through curiosity or from an entirely selfish love of knowledge does not render vivisection immoral, if it can be shown that the science in general tends to good. It is indeed conceivable that vivisection might develop into a something ethically wrong; but with the safeguards secured by the State, on the one hand, and on the other, by the fact that men of science are not, as a rule, necessarily brutal or wanton, and have some regard for virtue, concrete as well as abstract, this does not seem likely to be an immediate danger.

THE THIRTEENTH ANNUAL REPORT OF THE MASSACHUSETTS BOARD OF LUNACY AND CHARITY.

The reported number of insane under supervision of this Board is 5,944, an increase of 292 during the year 1891, to further swell the accumulation of inmates of our already long-overcrowded institutions for the insane. The aggregate number of persons admitted to the different State hospitals for the first time is 1,238 against 1,122 for the preceding year. Of this number 632 are patients suffering from the acute curable forms of insanity (exclusive of alcoholic cases) against 695 in 1890.

Some relief to these gloomy statistics is offered by an unusual increase of three per cent. in the number of reported recoveries at the lunatic hospitals over that of the preceding year. This is particularly encouraging as it is a gain not to be accounted for by any increase of new cases nor by the advent of any unusual number of habitual drunkards, of cases of toxic insanity, delirium tremens and the like, which so often swell lists of reported "cures." If this happens when our hospitals are crowded as never before, the deduction must be either that proper accommodations and good care — such as the Board strongly advocates in the erection of the proposed chronic asylum at Medfield — will still further increase these figures, perhaps to those reported in England and Scotland, or that, as a a few respected authorities would have us believe, recoveries among the insane are by no means necessarily the most frequent when their care is the best and the methods the most approved.

There is the usual depressing chapter — to which we annually recur — of reports on the condition of the town almshouses and the insane therein, who now number 806. Although there is some surface improvement in their care, the neglect of these unfortunates is practically the same as ever, and will so continue until the State adopts the plan of supporting all the dependent insane within her borders, a practice recently adopted in New York, and in vogue in several other States. To our mind the relief of these unfortunates will hardly be brought about, as the Board hopes, by the erection of the chronic asylum at Medfield, even in the event, which is by no means in the near future, of the rate of board becoming there "so low as to enable every town to board its insane there as cheaply as at home." Witness the large chronic asylum at Willard, in New York, with its low rate of board, which has long existed side by side with county almshouses, in which were large numbers of disgracefully-treated insane whose care that State has only just now undertaken.

There is, to be sure, every reason for alleviating the condition of the insane in the State hospitals by preventing overcrowding through new provisions for their care, but it should not be forgotten that their condition is even now one of great comfort beside that of the almshouse insane, and that efforts for the relief of both these classes should go hand-in-hand. No greater philanthropic endeavor could be instituted than immediate work in the line of exclusive State (as distinguished from town) care of the insane.

The boarding-out system for the insane is still classed as an experiment, although now in not unsuccessful operation (except as a relief to the numbers in the hospitals) for seven years. It is acknowledged that a few have been made happier thereby, some self-supporting, some well in mind and body, and that the system is well worth continuing. It is, however, thought to have reached its numerical limit — the number averaging 142 — and to have been an expensive undertaking. The former statement cannot yet, we believe, be confidently predicted, and the latter does not appear from the usual calculation of cost *per capita*, if made from the figures given. In fact, the cost compares very favorably with, and is, as a rule, less, than that incurred for the support of the same patients when in asylums.

Dr. Moulton, the former inspector, contributes a thoughtful and discriminating paper on "Lunacy Administration in Scotland," which we wish space would allow us to comment upon at length. Much of it is devoted to a comparison of the boarding-out system in that country and at home. His views thereon are particularly valuable, owing to his practical experience in developing the system in Massachusetts. He is, on the whole, favorably inclined to such a provision; but although he touches upon the improved care received in the homes of such patients in this country, we miss the warm advocacy of the measure and of its development in this country which his former reports and other contributions would lead us to expect.

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THE ANNUAL REPORT OF THE BOSTON CITY BOARD OF HEALTH.

The annual report of the Board of Health for the year 1891 shows that the city is in good sanitary condition. The deaths during the year were 10,571, an excess of 390 deaths over the number of the previous year. This increase is in part accounted for by the unusually large number of deaths from cholera infantum during the summer months, which were marked by a continued higher temperature and an excess of humidity over 1890. The advent of the epidemic of influenza in December, and its influence on other diseases, increased the number of deaths during the latter month to 1,133, as against 850 for the same month of the previous year. The population is estimated at 459,062, and on this basis the death-rate for the calendar year is 23.02, an increase of .32 over the rate of the previous year. The deaths due to zymotic diseases show a smaller percentage of the total mortality than in any year since the Board was established, being about 15.27 of the total number of deaths. There were only 232 deaths from diphtheria, as against 401 the preceding year and an average of 426 for the ten previous years. There was a slight increase in the deaths from scarlet fever. There were fewer deaths from typhoid fever than the average, and the percentage to the number of cases reported shows that the disease was of a milder type than usual. One thousand three hundred and fifty-two deaths were reported as due to consumption of the lungs, 1,149 to "inflammation of the lungs," 1,071 to pneumonia, 597 to cholera infantum, and 494 to "heart disease, unclassified." Three thousand one hundred and fourteen deaths were due to diseases of respiration, and 3,608 were children under five years of age. There were 5,712 cases of contagious disease reported to the Board, as against 4,370 in 1890, but the deaths from these diseases fell from 617 in 1890 to 471. There were 1,327 cases of scarlet fever with 64 deaths; 2,588 cases of measles with 21 deaths; 966 cases of typhoid fever with 154 deaths.

Concerning influenza, the report says that the occurrence of this disease every fifteen or twenty years, its apparent disappearance at the end of a year, and its recurrence at the end of two years are extremely interesting facts. The second epidemic, through which the city has just passed, although not so general as the epidemic of two years ago, has had, in proportion to its extent, much greater influence on the death-rate from acute pulmonary diseases. The effect of the first epidemic, however, on the death-rate from chronic pulmonary diseases was much more marked than that of the second. It may be safely stated that, directly or indirectly, this last epidemic of influenza has increased the mortality-rate of Boston from 21.28, the estimated rate per thousand for 1891, to 23.02, the actual rate for the same year.

The effect of deaths from consumption on the death-rate of Boston is not fully appreciated by the general public. The percentage of deaths from this cause is larger in this city than in many of the cities either in this country or in Europe. In addition to the infectious nature of this disease, crowded and overheated halls, workshops and dwellings are important factors in causing its prevalence.

The cases of typhoid fever are carefully tabulated and studied, and the statistics, carefully compiled, make it evident that neither the water-supply, nor made land, nor imperfect drainage, can be considered responsible for the comparative prevalence of typhoid fever in Boston, but that the frequency of this disease must be attributed to other causes than those over which the Board of Health has control.

For more than a year the Board has endeavored to inaugurate a system of medical inspection for the schools by which the spread of contagious diseases would, it believes, be diminished and many other dangers of school-life avoided. An appropriation of $5,000 for this purpose was transferred to another department before the system could be organized, and it will be necessary to wait until another appropriation can be obtained.

In his report the physician to the Board states that 43 cases, reported as small-pox, were examined, but that in no instance was small-pox found to exist. This has been the first year since 1879 in which there has not been a single case in the city for a period of twelve months. With regard to diphtheria and scarlet fever the fact brought out clearly in his report a year ago is again mentioned, that with the opening of the school year the number of cases steadily rises, and that it is by far the least frequent during the months when the schools are closed.

The report of the physician at Quarantine shows that 52 patients were treated in the Quarantine Hospital, of which number 32 were cases of measles and 8 were detained for observation. Six hundred and thirteen vessels were boarded and 35,577 immigrants inspected. No case of contagious disease existing at the time of arrival in Quarantine had escaped notice.

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MEDICAL NOTES.

More Typhus Cases in New York. — Three new cases of typhus fever have been discovered by the health authorities in New York, and the sufferers were removed to North Brothers Island.

Jewish Immigration. — The recent attempts to regulate the flood of immigration into the United States has been the cause of anxiety in England, lest some of the Russian Jews should turn in that direction. In the House of Commons a member asked the Government whether it intended to introduce a bill limiting or prohibiting their admission into the United Kingdom. Mr. Balfour, in reply, stated that at present there was nothing to justify such a bill. The expectation that a large number of Jews would come to England was based upon the belief that the United States would be closed against them, but inquiry showed that there was little reason to fear such a catastrophe. The fact that Austria and Germany have closed their frontiers against these immigrants makes the position of England still more safe.

An Outbreak of Small-pox in London. — During the past week a large number of cases of small-pox have been reported in London. Whereas during the four months previous there were only five cases, last week there were forty patients under charge of one of the local Boards of Health. The northeast and eastern districts are especially affected.

New Medical Periodicals. — The *Iowa Medical and Surgical Reporter*, a new monthly medical journal, appeared for the first time with the March issue. It is published in Des Moines, Iowa, and is edited by John W. Overton, M.D. The *Archives Cliniques de Bordeaux*, a monthly journal, under the editorial charge of M. le Dr. W. Dubreuilh appeared in Bordeaux in January. The *National Medical Review*, a monthly journal, edited by Chas. H. Stowell, M.D., to be devoted to current medical literature, appeared in March.

NEW ENGLAND.

Medical Inspector of Immigrants in Boston. — Dr. Fairfax Irwin, surgeon in the Marine Hospital service, has been detailed as medical inspector of immigrants at the port of Boston.

Mortality for the Week in Boston. — The death-rate for Boston for the week remains high. The number of deaths reported has been 240, making the death-rate 27.2. The deaths from consumption were 27, pneumonia 31, bronchitis 13. The number of persons over sixty years of age was 51.

Massachusetts Legislature. — The Committee on Public Charitable Institutions have reported leave to withdraw on the petition of the Carney Hospital for a State appropriation of $10,000. The Committee on Agriculture have reported a bill to prevent the spread of tuberculosis by more thorough inspection of cattle.

NEW YORK.

Execution by Electricity.— The eighth electrical execution in the State took place at Sing Sing prison on March 28th, and the efficiency of the method in causing death in a prompt and painless manner can now be regarded as positively assured. In most of the executions some slight variations were made in the application of the current, with a view, probably, of determining the most satisfactory details of procedure in such cases.

University of the City of New York.— The fifty-first Annual Commencement of the Medical Department of the University of the City of New York was held at the Metropolitan Opera House on March 29th. The first Faculty prize for general proficiency at the final examinations was awarded to S. C. Minor, who was also the valedictorian of the class. The address to the graduates, who numbered one hundred and sixty-two, was delivered by the Rev. George Alexander, D.D.

A Toy Balloon in the Throat.— At a coroner's inquest the other day, a novel cause of death was brought to light. A little girl, eleven years old, was playing in the street with a penny toy balloon, and during a sudden inspiration, this was drawn into the upper air-passages. Death from asphyxia resulted before medical aid could be summoned, and at the autopsy the balloon was found lodged in the throat.

Report of the Committee on the Condition of the Insane.— The advisory committee appointed by the Mayor to examine into the condition of the insane under the care of the city, and report on the advisability of transferring this class of dependents to the charge of the State, as the municipal authorities have the option of doing under the provisions of the State Care Act, on March 22d handed in their report, and in it they advise that this change be not effected. In the prosecution of its labors, the committee visited and thoroughly inspected all of the city's institutions for the insane, both on the Islands and at Central Islip, Long Island, and afterwards visited the State Hospitals for the Insane at Binghamton and other places.

While the state of affairs at the farm at Central Islip was, on the whole, very satisfactory, that at the asylums on Blackwell's, Ward's and Hart's Islands, was found to be the reverse. "The condition of these insane poor," says the report, "is pitiable. Their accommodations are a reproach to humanity. Overcrowding exists in every building of every department, and their wretched existence is rendered still more intolerable by the absence of comfortable surroundings, of proper accommodations of every kind, and by insufficient protection, in the case of many of the smaller buildings, from the inclemency of the weather. There is also the danger of fire, which in the inflammable wooden buildings would be certain to result in large loss of life." The State care of the insane at Binghamton and Willard, except in the matter of buildings and the absence of overcrowding, and perhaps that a better quality of meat was supplied to the inmates, was not found better than that of the city; while the cost of maintenance was considerably greater.

Having advised that the city's insane be not turned over to the State, the committee offers certain recommendations. The first of these is that the appropriation for supplies be made more definite to each institution separately, and that the *per capita* allowance be increased at least fifty cents a week. "The insane should be removed from the neighborhood of the convicts and paupers," the report continues. "They should be given all the comforts possible, and those who take care of them should be fairly dealt with. The lot of these attendants is not a pleasant one. Their pay should be adequate, and their quarters pleasant. Meat should be of a better quality. Every straw bed should be burned up at once, and wire mattresses substituted without delay." It is also recommended that the pay of the General Medical Superintendent be increased, and that he be given full power to appoint and remove his subordinates. The committee then recommends that the care of the city's insane be confided to a separate department and that this class be provided for wholly on Ward's Island and at Central Islip, where the accommodations should be properly enlarged for the purpose; the buildings on Hart's and Blackwell's Islands being needed for paupers and criminals. It is also urged that application be at once made to the Legislature for permission for the city to purchase that part of Ward's Island which it does not already own; that the city ask to be relieved from the payment of State taxes for the care of the State's insane; and, lastly, that the Legislature be asked to authorize an issue of bonds to the amount of $1,500,000, for the purchase of property at Ward's Island and Central Islip, and for the erection of new buildings for the insane at both places.

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Miscellany.

EXTRAORDINARY MUTILATIONS FROM A RAILWAY ACCIDENT.

Mrs. Homer R. Baldwin has brought suit for $250,000 against the New York Central and Hudson River Railroad Company on account of injuries received in the accident on the road which occurred near Hastings on Christmas Eve last; and, in view of the frightful mutilations she has received and the terrible amount of suffering involved, it is probable that a jury will award her the sum asked, or, at all events, a large proportion of it, especially as she announces that she will devote all the money received to the founding of a charitable institution for women.

This is undoubtedly one of the most remarkable cases on record. In the accident she received a fracture at the right elbow, both hands were mangled, and she was scalded in the most shocking manner about the chest, neck, head and face, including the mouth and upper air-passages, by escaping steam. It was thought at first that she could not possibly survive more than a few hours, but her endurance and tenacity of life were astonishing. She was treated for a number of weeks at the St. John's Riverside Hospital, at Yonkers, and afterwards removed to a hotel in that city. On January 1st, her right hand and the fingers of the left hand were amputated, and her condition was so critical at the time, that the operations were performed without the use of an anæsthetic. In the mean time both ears had sloughed off, and the sloughing away of the scalp laid bare a large surface of cranial bone. After a time skin-grafting was commenced on an extensive scale, and proved successful on the face and neck, though not to a satisfactory extent on the scalp. In the latter part of February a destructive inflammatory process commenced in both eyes, and this proved so disastrous that total blindness resulted, and it finally became necessary to excise both eyeballs. This was done on March 19th, by Dr. P. A. Callan, of New York, and at the same time a number of dead bones were removed from the left hand by Dr. Emil Schopen, the regular attendant in the case. It had been the intention also to scrape away a considerable amount of necrosed tissue from the exposed skull, but as the patient showed signs of sinking, this was postponed until a later time.

Throughout the entire history of the case Mrs. Baldwin, though never for a moment free from pain, unless when asleep or under the influence of narcotics, has shown the most extraordinary fortitude and cheerfulness, and since the operations just mentioned her general condition has improved to a considerable extent, though her wasted body still weighs only about sixty pounds.

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SUGGESTIONS FOR THE REGULATION OF DAIRY FARMS.

In a paper on "Cow's Milk in relation to Human Health and Disease," Dr. H. E. Armstrong,[1] Medical Officer of Health at Newcastle, commends the system of milk-supply and distribution in operation at Copenhagen, and offers the following suggestions for adoption in England:

(1) That all conditions relating to the production, storage, and distribution of milk should be under State control and regulation.

(2) That every cow with tuberculosis (proved or reasonably suspected) on a dairy farm should be slaughtered and the owner compensated.

(3) That all milk by the consumption of which there is risk of the spread of any infectious disease to human beings should be at once destroyed, and, where no blame respecting such risk attaches to the owner, that he should be compensated.

(4) That the sanitary authorities of towns should have power to license and control the sale of milk sent into their districts from farms outside, and to prevent the sale of such milk, unless satisfied as to the sanitary conditions under which it is produced, stored, or distributed.

(5) That, in outbreaks of infectious disease associated with milk-supply, the sanitary authority should have power to demand from the retailer the name and address of the producer of the milk.

(6) That in outbreaks of infectious disease in any district, due to milk sent from another district, the sanitary authority of the district in which the disease breaks out should have power, without delay, to inspect the dairy, and, if necessary, prohibit by their officers the sale of the milk.

(7) That the sanitary authorities of rural districts from which milk is sent for sale into urban districts

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[1] The Practitioner, March, 1892.

should be to some extent responsible to such urban districts for the sanitary condition of the dairy farms on which such milk is produced; and that they should inform such urban authorities of any infectious disease or other condition at such dairy farms whereby the wholesomeness of the milk is likely to be affected injuriously.

(8) That rural sanitary authorities should be required to provide hospital accommodation for the isolation of cases of infectious disease occurring among dairy operatives.

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CASTRATION AS A PUNISHMENT FOR CRIME.

At the last meeting of the New York Society for Medical Jurisprudence, Dr. William A. Hammond, of Washington, read a humorous paper entitled, "A New Substitute for Capital Punishment and Means for Preventing the Propagation of Criminals." The substitute was castration, and the following are extracts from the paper:

"A man places greater value on his generative powers than on his life. As a French writer has said, 'the dignity of a man resides in his testicles.'

"The author has several times put the question to criminals under sentence of death, and they all said they would rather hang than be deprived of their testicles.

"Castration would have the effect of making the criminal of some use to society. A dead man is of no use to society, and a man in prison is almost as bad. There are many occupations that would be open to him; he could occupy any position in which boldness or originality are not essential. Possibly he might make a good clergyman. He would not make a soldier, or a sailor, or a policeman, but he could edit a mild newspaper or make an efficient member of the legislative body. The value of eunuchs as singers has long been known. They would make excellent dry-nurses and safe type-writers.

"The scope of this paper was restricted to the male sex. Women have become so accustomed to removal of the ovaries, and these organs are so much less essential to womanhood than the testicles are to manhood, that it might be necessary to substitute imprisonment for life in their case."

METEOROLOGICAL RECORD,

For the week ending March 26, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...20	29.89	31	34	27	58	54	56	S.W.	W.	32	28	C.	O.	
M..21	30.31	26	35	17	51	28	40	W.	W.	17	10	C.	C.	
T..22	30.42	31	43	19	49	49	49	W.	S.	7	12	C.	F.	
W. 23	29.98	40	49	30	91	92	92	S.	W.	14	4	R.	O.	.62
T..24	30.06	40	46	34	50	51	50	W.	W.	12	12	C.	C.	
F..25	30.03	42	50	34	58	59	58	W.	E.	12	8	O.	C.	
S..26	29.90	40	47	33	51	69	60	N.W.	S.	4	4	C.	C.	
☞	30.08	36	43	28	58	57	58			14	11			.09

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, March 26, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	872	347	15.48	23.40	3.72	1.44	4.20
Chicago . . .	1,099,850	—	—	—	—	—	—	—
Phila. (Mch. 19)	1,046,964	504	181	15.96	13.11	3.42	1.14	7.79
Brooklyn . .	806,343	397	144	15.00	22.25	3.00	.50	8.00
St. Louis . . .	451,770	206	74	12.25	10.78	.98	3.92	4.90
Boston . . .	448,477	237	79	10.08	14.96	1.26	—	5.46
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	137	57	10.22	12.41	—	2.19	7.30
Cleveland . .	262,000	109	41	11.96	15.64	.92	.92	5.52
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	108	52	13.80	23.92	.92	—	2.76
Milwaukee . .	240,000	87	28	20.23	9.52	1.19	1.19	13.09
Washington .	230,392	116	26	8.60	23.08	—	.86	1.72
Nashville . .	76,168	39	16	10.24	23.04	—	—	2.56
Charleston . .	65,165	38	8	7.89	10.52	—	—	2.63
Portland . . .	36,425	15	7	—	13.33	—	—	—
Worcester . .	84,655	32	9	12.52	6.26	—	3.13	6.26
Lowell . . .	77,696	26	15	26.95	23.10	—	11.55	7.70
Fall River . .	74,398	33	14	18.18	15.15	—	9.09	—
Cambridge . .	70,028	31	10	6.46	6.46	3 23	—	—
Lynn	55,727	20	2	5.00	20.00	—	—	—
Lawrence . .	44,654	24	6	8.32	20.80	4.16	—	—
Springfield . .	44,179	14	6	—	14.28	—	—	—
New Bedford .	40,733	19	9	5.26	10.52	—	—	—
Salem	30,801	10	3	10.00	20.00	—	10.00	—
Chelsea . . .	27,909	9	3	—	—	—	—	—
Haverhill . .	27,412	7	1	—	—	—	—	—
Taunton . . .	25,445	8	3	—	12.50	—	—	—
Gloucester . .	24,651	13	2	7.69	23.07	—	—	—
Newton . . .	24,379	12	2	8.33	8.33	—	—	8.33
Malden . . .	23,031	5	2	20.00	—	—	—	20.00
Fitchburg . .	22,037	5	2	—	—	—	—	—
Waltham . .	18,707	3	2	—	33.33	—	—	—
Pittsfield . .	17,281	6	3	—	50.00	—	—	—
Quincy . . .	16,723	2	1	—	—	—	—	—
Northampton .	14,990	6	2	—	33.33	—	—	—
Newburyport .	13,947	3	2	—	—	—	—	—
Medford . . .	11,079	2	0	—	50.00	—	—	—
Hyde Park . .	10,193	4	2	—	25.00	—	—	—
Peabody . . .	10,158	3	0	—	—	—	—	—

Deaths reported 3,162: under five years of age 1,161; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 427, acute lung diseases 667, consumption 355, diphtheria and croup 174, scarlet fever 74, diarrhœal diseases 39, typhoid fever 35, measles 24, cerebro-spinal meningitis 21, whooping-cough 21, erysipelas 18, malarial fever 7, puerperal fever 7, typhus fever 7.

From typhoid fever Philadelphia 12, New York 4, Cleveland 3, St. Louis, Boston, Pittsburgh, Nashville and Lowell 2 each, Cincinnati, Milwaukee, Washington, Charleston, Cambridge and New Bedford 1 each. From measles New York 15, Brooklyn 3, Philadelphia and Pittsburgh 2 each, Boston and Washington 1 each. From cerebro-spinal meningitis New York 9, Brooklyn 4, Washington 2, Worcester, Fall River, Lynn, Lawrence, Springfield and Gloucester 1 each. From whooping-cough Pittsburgh 6, New York 5, Brooklyn 3, Philadelphia and Washington 2 each, Boston, Cleveland and Charleston 1 each. From erysipelas New York 7, Brooklyn and St. Louis, 3 each, Boston 2, Cleveland, Philadelphia and Washington 1 each. From malarial fever New York 4, Philadelphia 2, Brooklyn 1. From puerperal fever Milwaukee 3, Boston 2, Pittsburgh and Nashville 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 26, 1892, TO APRIL 1, 1892.

The leave of absence granted Captain Marshall W. Wood, assistant surgeon, U. S. A., is extended one month.

Captain C. N. B. Macauley, assistant surgeon, U. S. A., will report for temporary duty at U. S. Military Academy, West Point, N. Y., during the absence of Captain Henry S. Kilbourne, assistant surgeon, U. S. A., as member of the Army Medical Board, New York City, N. Y., and on return of that officer will rejoin his proper station.

First-Lieut. Frank T. Meriwether, assistant surgeon, U. S. A., ordered for temporary duty at Madison Barracks, N. Y., during the absence of Captain Henry S. Turrill, assistant surgeon, as member of Army Medical Board, New York City, and on return of that officer will rejoin station.

First-Lieut Francis A. Winter, assistant surgeon, U. S. A. (recently appointed) will proceed from St. Louis, Mo., to Jefferson Barracks, Mo., and report to the commanding officer of that station for duty.

Major John Van R. Hoff, surgeon, ordered to St. Louis, Mo., to represent the medical department of the army at the meeting of the Association of Surgeons of the National Guard to be held in that city, April 19 to 21, 1892.

The suspension of the operation of Par. 2, S. O. 13, January 16th, A. G. O., relating to Captain Aaron H. Appel, and First-Lieut. Julian M. Cabell, assistant surgeons, is removed.

Leave of absence for one month, on surgeon's certificate of disability, is granted Captain Edwin F. Gardner, assistant surgeon, U. S. A.

The leave of absence granted Captain R. W. Johnson, assistant surgeon, U. S. A., for seven days, is hereby extended fourteen days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 2, 1892.

D. O. Lewis, surgeon, from Naval Hospital, Washington, and to Naval Hospital, Mare Island, Cal.

T. A. Berryhill, passed assistant surgeon, from the U. S. S. "Pensacola" and to the U. S. S. "Ranger."

Merrill W. Barnum commissioned an assistant surgeon in the Navy from March 15, 1892.

W. G. Farwell, surgeon, granted leave of absence for six months with permission to leave the United States.

George W. Woods, medical inspector, from the U. S. S. "Pensacola" and to the Naval Hospital at Mare Island, Cal.

N. L. Bates, medical director, detached from Naval Hospital, Mare Island, Cal., and ordered home.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING MARCH 26, 1892.

Bailhache, P. H., surgeon. To inspect unserviceable property at Port Townsend, Wash., March 9, 1892. Detailed as member of Board for physical examination, officer Revenue Marine Service. March 26, 1892.

Purviance, George, surgeon. Ordered to Washington for temporary duty. March 5, 1892.

Austin, H. W., surgeon. To inspect Service at New Orleans, Savannah and Charleston, and the Gulf and South Atlantic Quarantine Stations. March 3, 1892.

Irwin, Fairfax, surgeon. Detailed as medical inspector of immigrants, port of Boston, Mass. March 3, 1892.

Carmichael, D. A., passed assistant surgeon. To inspect the San Francisco Quarantine Station. March 7, 1892.

White, J. H., passed assistant surgeon. Ordered to South Atlantic Quarantine for temporary duty. March 26, 1892.

Kinyoun, J. J., passed assistant surgeon. To proceed to New York on special duty. March 7, 1892.

Perry, T. B., passed assistant surgeon. Granted leave of absence for thirty days. March 1 and 14, 1892.

Guiteras, G. M., assistant surgeon. Ordered to examination for promotion. March 23, 1892.

Brown, B. W., assistant surgeon. Assigned to temporary duty at San Francisco Quarantine. March 14, 1892.

Eager, J. M., assistant surgeon. Granted leave of absence for thirty days. March 1, 1892.

Decker, C. E., assistant surgeon. Detailed as recorder, Board for physical examination, officer Revenue Marine Service. March 26, 1892.

PROMOTION.

Cobb, J. O., passed assistant surgeon. Commissioned by the president as passed assistant surgeon. March 23, 1892.

AMERICAN ACADEMY OF MEDICINE.

Preliminary Programme.

The following topics are proposed for discussion at the Seventeenth Annual Meeting of the American Academy of Medicine, at the Cadillac Hotel, Detroit, Mich., on Saturday, June 4, and Monday, June 6, 1892.

(1) "Essentials and Non-essentials in Medical Education," the Address of the retiring President, Dr. P. S. Conner, of Cincinnati.

(2) "The Value of the General Preparatory Training afforded by the College as compared with the Special Preparatory Work suggested by the Medical School in the Preliminary Education of the Physician," a paper by Dr. T. F. Moses, of Urbana, O.

(3) "Does a Classical Course enable a Student to Shorten the Period of Professional Study?" a paper by Dr. V. C. Vaughan, of Ann Arbor, Mich.

(4) "The Value of a Collegiate Degree as an Evidence of Fitness for the Study of Medicine," a paper by Dr. L. H. Menter, of Chicago.

(5) "The Value of Academical Training Preparatory to the Study of Medicine," a symposium by Drs. H. B. Allyn, of Philadelphia, W. D. Bidwell, of Washington, and Elbert Wing, of Chicago.

(6) "The Newer Medical Education in the United States," a symposium by Drs. W. J. Herdman, of Ann Arbor, Charles Jewett, of Brooklyn, and Elbert Wing, of Chicago.

(7) A paper on "Some Phase of the State Supervision of the Practice of Medicine," by Perry H. Millard, of St. Paul.

Some other papers are partially promised and the usual reports may be expected from the committees.

Members of the profession are cordially invited to be present at the sessions of the Academy.

ANNUAL MEETING OF THE ASSOCIATION OF MILITARY SURGEONS OF THE NATIONAL GUARD OF THE UNITED STATES.

The second annual meeting of the Association of Military Surgeons of the National Guard of the United States, will be held in St. Louis, Mo., April 19, 20, and 21, 1892.

The railroads have granted one and a third rates. Papers will be read and discussed by regular Army and Navy, and National Guard medical officers.

For any information as to meeting, etc., address,
Col. E. Chancellor, 515 Olive Street, St. Louis, Mo.
Surg.-Gen. N. Senn, *W. N. G. President.*
Lieut. and Asst. Surg. Ralph Chandler, *Corres. Sec'y.*

DELEGATES TO AMERICAN MEDICAL ASSOCIATION.

Members of the Mississippi Valley Medical Association wishing to go as delegates to the American Medical Association at Detroit, will please send names to
Dr. E. S. McKee, *Secretary*, 57 W. 7th Street, Cincinnati.

SOCIETY NOTICES.

Surgical Section of the Suffolk District Medical Society. – There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, May 4, 1892, at 8 o'clock.

Dr. S. J. Mixter, "Median Abdominal Section for Removal of Tumor of the Kidney; Recovery."

Dr. H. W. Cushing, "A Case of Nephrectomy; Recovery."

Dr. John L. Morse, "Tracheotomy with Delayed Removal of the Tube."

Dr. C. L. Scudder, "Diphtheria; Tracheotomy, Curetting the Trachea; Recovery."

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

Boston Society for Medical Improvement. – A regular meeting of the Society will be held on Monday, April 11, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock p. m.

Dr. S. J. Mixter, "Aneurism of External Iliac, Laparotomy and Ligature of Common Iliac; Death."

Dr. J. B. Ayer, "Recuperative Power in Advanced Age."

Dr. F. H. Williams, "Early Local Treatment in Diphtheria."

Election of new members.

G. G. Sears, M.D., *Secretary.*

ERRATUM.

On page 316, Vol. CXXVI, twenty-fifth line from the bottom, first column, for *faculty* read *fraternity*.

RECENT DEATHS.

Sir William Bowman, Bart., M.D., consulting surgeon to the Royal London Ophthalmic Hospital, died in London, March 29th, aged seventy-five years. He was the author of several works on the eye. He received the honorary degree of M.D. from Dublin University in 1867, of LL.D. from Cambridge in 1880, and Edinburgh in 1881. He was made a baronet in 1884. He was first president of the Ophthalmological Society of the United Kingdom, and was an honorary member of many foreign societies.

BOOKS AND PAMPHLETS RECEIVED.

Announcement of the Twenty-ninth Annual Course of Lectures of the Medical Department of the University of California, with Catalogue of Students and Graduates. 1892.

Original Articles.

NITRITES: THEIR THERAPEUTIC ACTION AND SCOPE IN MEDICAL PRACTICE.

BY KENELM WINSLOW, M.D., NEWTON, MASS.

The comparatively recent introduction of the nitrites as therapeutic agencies, and their growing popularity, may serve as an excuse for presenting a paper, the object of which is to point out briefly the value of the nitrites, more especially nitro-glycerine, in certain affections in which they have proved serviceable and to show the rationale of their curative effect in each instance.

The writer must, however, first acknowledge his indebtedness to the following gentlemen for their kindness in assisting him by communications with reference to their experience with nitro-glycerine in practice, doses employed, method of using and views as to its action in the various diseases in which they had employed it, namely, Drs. Francis P. Kinnicutt and H. B. Millard, of New York; Drs. Weir Mitchell, H. C. Wood and Hobart Amory Hare, of Philadelphia; Drs. Robert T. Edes, Francis Minot, Frederick I. Knight, H. F. Vickery and Vincent Y. Bowditch, of Boston, and to Dr. Mary Putnam Jacobi, of New York.

The preparations in common use representing the nitrite group are spirits ætheris, nitrosi, potassii nitras, sodii nitris, amyl nitris and nitro-glycerine.

Sweet spirits of nitre, although a useful preparation as a stimulant, diaphoretic and diuretic, is often useless as a nitrite. The United States Pharmacopæia article should contain four per cent. of ethyl nitrite, but it is said authoritatively that the officinal process called for in making it will only produce a preparation containing three per cent. of ethyl nitrite at best.

In a report[1] containing the result of recent analyses of 68 samples of nitrous ether; seven contained mere traces of ethyl nitrite, 47 were so far below the standard as to be valueless, and there was so much difference between the strongest and the weakest that a teaspoonful of the former was equivalent to a pint of the latter. Frequent exposure to the air, preservation in warm places and errors in preparation explain, for the most part, these deficiencies.

It is doubtful how far the therapeutic effect of nitrate of potash depends upon its action as one of the nitrite group. As a cardiac sedative, renal stimulant and diuretic it does not differ much from the other salts of potassium. When burned, in the form of nitre paper, its fumes contain the nitrite of potassium, which consequently represents the action of this class. In the blood it is uncertain whether it acts as a nitrate or not. Therefore nitre cannot be looked upon as a satisfactory representative of the nitrites.

Nitrite of sodium is not distinguishable from the other nitrites in action except that it is slower, more permanant and not so reliable in its effect on the economy.

Nitrite of amyl and nitro-glycerine are similar in kind of action, but differ in degree. Whereas the action of the first in diminishing vascular tension is observed by means of the sphygmograph[2] to occur within one minute and to last for two to four minutes, with variations from ten to thirty minutes, the action of the second is indicated within six to seven minutes, is most marked for half an hour, and sometimes an hour longer, although varying somewhat with different people. Anæmic persons, or those with weak circulation, may be affected much more easily and for a longer time. Good nitrous ether lowers tension for from forty-five to sixty minutes.

This gives a comparative idea of the duration of action of these representatives of the nitrites. It will be noted, from what has gone before, that nitrite of amyl or nitro-glycerine are the most reliable preparations, and the latter the more permanent of the two.

Without digressing too much to speak of the physical and chemical properties of nitro-glycerine, we may say that it is a nitrate of glyceryl, also called glenoine. Its formula is $C_3H_5\ (NO_3)_3$. It is decomposed by the alkaline blood and two-thirds of its nitric acid is reduced to nitrous acid, and with the alkali forms a nitrite of potassium or sodium, while the remaining third is not reduced and forms a nitrate in the blood. Nitro-glycerine is more powerful than the other nitrites because it is absorbed undecomposed, setting free nascent nitrous acid in the blood. The one per cent. alcoholic solution is the preparation usually employed and as strong a solution as ten per cent. is safe as far as any danger of explosion is concerned. It has been perhaps wisely suggested that in writing prescriptions the synonym glenoine be used, it not having so formidable or suggestive a sound as nitro-glycerine to patients, indicative of violent disturbing consequences.

The action of nitro-glycerine will be taken as a type. Glenoine dilates the arterioles all over the body by relaxing the walls of the vessels. This action is no doubt peripheral, but whether due to impression on the vaso-motor ganglia or muscular fibres is uncertain. The heart beats more quickly in consequence, as the vascular resistance is lessened and because a diminished blood-pressure depresses the vagus centre and often stimulates the accelerator centres. The arterioles being dilated in the heart as elsewhere, increase its blood-supply, nutrition and force. Nitro-glycerine is more of a vascular than a cardiac stimulant, that is, it increases the rapidity of the blood-current by dilating the vessels rather than by increasing the motive force *a tergo*. There is much evidence for believing, however, that in small doses nitro-glycerine usually stimulates the heart. It is shown to some degree physiologically and also clinically, and it would seem as if this action had not been duly appreciated until recently. It is now claimed that nitro-glycerine is better than alcohol in all emergencies, as it acts with much more rapidity, is tasteless, the dose is infinitesimal, and it may be dropped on the tongue and absorbed when swallowing is impossible during unconsciousness. It is also asserted that one minim of glenoine is equivalent to an ounce of brandy.

Lauder-Brunton has found that the general blood-pressure is raised by small doses of nitrite of amyl notwithstanding the vascular dilatation; and Dr. Robert T. Edes writes me that, "There seems to be good reason to suppose that nitro-glycerine also stimulates the heart directly, that is, quickens the pulse by its action on the cardiac ganglia, as well as simply taking off blood-pressure." Digitalis and nitro-glycerine are said to be antagonistic in all respects, save that they both increase the force of the heart.[3] Digitalis slows the heart and increases blood-tension; nitro-glycerine accelerates it and diminishes blood-pressure.

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[1] Druggists Circular, August, 1891.

[2] D. J. Leech, M.D.: British Medical Journal, November 28, 1885.

[3] J. B. Burroughs, M.D.: London Lancet, June 22, 1884.

Digitalis is therefore indicated in the case of a rapid heart which is weak from the lack of rest periods; nitro-glycerine is to be used with a slow heart where the diastole is too prolonged and weakness occurs, not from too little rest, but, on the other hand, from stagnation of the blood-current. So that digitalis is particularly applicable with a frequent pulse of low tension, nitro-glycerine with an infrequent pulse of high tension.

In either case the abnormal pulse is caused to become nearer the normal state in character and frequency. Where frequency, however, is due to weakness of innervation, nitro-glycerine, like alcohol or other stimulants, may not increase but rather diminish rapidity of the cardiac pulsations.

Nervous System. — Nitro-glycerine lessens reflex action by its influence on the spinal cord. It depresses especially the motor centres, and to a less degree the activity of the motor nerves.

Muscles. — Glenoine lowers the functional activity of muscular tissue in large doses, and nitrite of amyl locally applied to the muscles of a frog causes them soon to lose their power of contractility and to become paralyzed. Nitrites relieve spasm of muscular tissue wherever it occurs, owing to their depressing action on motor nerves and muscular tissue.

Blood. — In poisoning by nitro-glycerine, and nitrites generally, the oxidizing function of the blood is interfered with and hæmic respiration is diminished by the conversion of the oxy-hæmoglobin into meth-hæmoglobin. This latter is not so readily de-oxidized but still yields up its oxygen to reducing agents, so that it has been suggested that when the venosity of the blood becomes great, lethal poisoning is prevented by the unoxidized products of tissue waste becoming reducing agents and again restoring internal respiration.

Urine. — Nitro-glycerine augments the amount of urine, increasing the local blood-pressure within the glomeruli by dilating the afferent vessels of the renal artery which supply them.

THERAPEUTICS IN DISEASES OF THE RESPIRATORY ORGANS.

Nitro-glycerine has proven very efficacious in the treatment of acute lobar pneumonia. The theory of its action is based upon its power of dilating arterioles generally and thus relieving the load put upon the right heart due to the pulmonary obstruction. In this way dyspnœa may be averted. The result is somewhat similar to that of venesection without its weakening effect. It is "bleeding a patient into his own blood-vessels." How much of a stimulating effect on the heart nitro-glycerine has, it is difficult to say, but I have certainly not known of its depressing the heart in these cases. It may be used to advantage in combination with such agents as alcohol, ammonia, strychnine or atropine.

Dr. Andrew H. Smith[4] says: "Again and again I have seen a patient with pneumonia somnolent or even comatose, with face gray, the lips livid, respiration superficial and fifty to sixty per minute, and the chest everywhere full of moist râles; but nevertheless rescued from this apparently hopeless condition by minim doses of a one per cent. solution of nitro-glycerine administered every fifteen or thirty minutes." Dr. Frederic I. Knight, of Boston, writes me that he has often seen relief of dyspnœa in acute pneumonia from the use of nitro-glycerine.

Prof. T. R. Frazer[5] has given a practical demonstration of the therapeutic action of nitro-glycerine in chronic bronchitis. It was a case of four months' duration, with snoring, whistling and cooing râles heard all over the chest. One minim of the one per cent. solution of nitro-glycerine caused the râles to immediately disappear, showing that the physical signs could not have been due to either congestion or exudation within the bronchial tubes, for this agent could have diminished neither; but had been the result of spasm.

An asthmatic patient, under my care, subject to repeated attacks of acute bronchitis, was more relieved by nitro-glycerine than by any other single remedy after the pharmacopœal resources had been wellnigh exhausted. This was an old hospital patient who had long been the object of some such treatment as was pursued by a sea captain who came to a friend of mine for consultation. This nautical prescriber was at a loss as to what he should do, for having begun treatment in the northeast corner of his medicine chest, and having tried every remedy in turn with a praiseworthy lack of therapeutical prejudice, he had conscientiously worked around into the southwest corner of said chest, declaring with justifiable astonishment, he could detect no change in his patient notwithstanding.

The acute attacks in my case were followed usually by asthmatic seizures, which lasted for a considerable period. Therefore it is not improbable that the spasmodic element existed during the bronchitis, and the useful effect of nitro-glycerine was thus more apparent, although its action in equalizing the circulation may have been an important factor beside. One minim of the centesimal solution of glenoine, administered in three doses at intervals of fifteen minutes, effectively cut short the asthmatic attacks, although in another case it had to be discontinued on account of the fulness in the head it produced.

Asthma is very commonly treated successfully with nitro-glycerine or nitrite of amyl by inhalation.

Dr. Hobart Amory Hare was kind enough to write as follows: "I have found nitro-glycerine very useful in the treatment of asthma, and have never seen any untoward effects produced by it in this disease, while I have found nitrite of amyl to be of value when used for the purpose of stopping an attack. I have seen one or two instances in which serious cardiac embarrassment seemed to be produced by it, and I believe, under the circumstances, the heart was already so distended with blood that the action of nitrite of amyl simply increased the cardiac difficulty. How drugs do good in asthma is a matter which is not positively decided. Their depressing effect on the nervous system, combined with the vaso-motor changes which they produce, probably explain their beneficial influence."

Dr. Hare's explanation refers to the relief of spasm and equalization of the circulation.

The writer in his service in the Carney Hospital, as interne, where there is always a large number of phthisical patients, observed that minim doses of nitro-glycerine gave more relief in the dyspnœa of advanced cases than alcoholic stimulants or any other one remedy. Nitro-glycerine may accomplish this by acting as a cardiac as well as a vascular stimulant. In emphysema with dilatation of the right heart and venous engorgement owing to pulmonary obstruction, nitro-glycerine is likewise useful, and cases could be cited where it has been employed with considerable benefit.

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[4] American Journal of Medical Sciences, November, 1890.

[5] London Lancet, July 9, 1887.

In acute pulmonary œdema nitro-glycerine acts favorably, especially as a vascular stimulant, thus distributing the blood more freely about the body, and relieving the right heart. Dr. A. Alexander Smith[6] relies upon nitro-glycerine ($\frac{1}{100}$ gr.) given every two hours with strychnine ($\frac{1}{60}$ gr.) subcutaneously. In addition to this, he uses two doses of atropine ($\frac{1}{100}$ gr.) two hours apart at the outset, as respiratory and cardiac stimulants. Nitro-glycerine is recommended by Ringer for hiccough, and by Bartholow for whooping-cough and laryngismus stridulus.

The antispasmodic action of the nitrites would account for any beneficial effect occurring in its use in the treatment of these maladies.

Cardiac Affections. — It is needless to dwell on the usefulness of nitro-glycerine in the treatment of angina.

I am indebted to Dr. Francis Minot, of Boston, for the following communication to me on this subject. He writes: "I think nitro-glycerine is more efficient in angina than nitrite of amyl. I give nitro-glycerine in doses of from one to four drops of the one per cent. solution, repeating it when required. I have never found any injurious effects from it, even when continued for months. It succeeds better than any remedy I have ever employed in angina and orthopnœa from cardiac disease."

Dr. Francis P. Kinnicutt, of New York, in reply to my queries on the subject, tells me he relies largely on nitro-glycerine in the treatment of anterio-sclerosis, with or without renal complications, and that it is especially useful in the mental hebetude accompanying this affection. He gives six to eight doses of one minim each during the twenty-four hours, for long periods.

In the angio-neuroses generally, particularly where there is an irregular distribution of the blood, with pallor of the skin and mucous membranes, or with small rigid arteries, it is indicated (as in migraine), but is to be avoided when the face is congested.

In all these cases the relief of spasm and equalization of the circulation is the true explanation of the effect of nitro-glycerine.

In almost every instance where severe dyspnœa or orthopnœa occurs during cardiac disease I believe nitro-glycerine stands at the head of therapeutic agencies in affording relief. Where there is loss of compensation and passive congestion of the internal organs, it takes the load off the heart and aids in distributing the blood about the body in its proper channels.

The writer has had a case with cardiac disease where the orthopnœa was so great that the patient had not been able to lie down for weeks for a minute at a time, yet was made absolutely comfortable, in this respect, by minim doses of nitro-glycerine given at four-hour intervals. In the interim digitalis or strophanthus was used.

Although digitalis antagonizes to some extent the effect of nitro-glycerine on the vessels, they both stimulate the heart and the combination has been employed with apparent benefit where the pulse was frequent and irregular in heart lesions with dyspnœa. Alcoholic and ammoniacal preparations, atropine and strychnia are not open to the same objection, and therefore are more appropriate as heart stimulants. It has been urged that in aortic regurgitation the prolonged diastole produced by digitalis militates against its use, by allowing more blood to leak back again into the ventricle during the long rest period than is pumped out by the more complete and forcible contraction under digitalis. Here the cardiac stimulants just mentioned, together with strophanthus, may be employed with advantage as is illustrated by a case reported by S. Solis Cohen.[7]

It has always been found advisable as a precaution, to have nitro-glycerine at hand in cardiac cases, even if not regularly in use, to avert attacks of dyspnœa or angina. The writer has a case in mind with aortic stenosis and good compensation usually, but where syncope often occurred on exertion. These attacks were completely relieved by nitro-glycerine. As a heart stimulant, pure and simple, apart from its power to increase the vascular flow by dilatation of the arterioles, nitro-glycerine is more potent than is generally held. It is a substitute for alcohol, although much more rapid and transient in its effect. It is doubtful whether subcutaneous administration is more speedy in its effects than when given by the mouth.

In typhoid, complicated with bronchitis or pneumonia, it has been employed with good results as a stimulant and to alleviate dyspnœa. It is recommended in collapse.

In poisoning by various agents there is undeniable evidence of its life-saving properties on record. In chloroform narcosis, it stimulates the heart and dilates the cerebral vessels. In the syncope and collapse following cocaine poisoning it speedily aids recovery through its cardiac and vascular stimulating powers.[8]

Following toxic doses of opium, nitro-glycerine has been used successfully to stimulate the heart, where the respiration was sustained, and other cardiac stimulants had proved of no avail.[9] Nitro-glycerine has also proved efficacious in poisoning by illuminating gas, probably stimulating the heart and counteracting the effect of the gas on the vagus centres.

Renal Diseases. — Nitro-glycerine reduces arterial tension and relieves headache, dyspnœa and convulsions of uræmic conditions in chronic Bright's disease. Not only this, but it increases the amount of urine and diminishes correspondingly the quantity of albumen.

The uræmic symptoms usually depend upon, or are at any rate associated with, increased arterial tension, and relief follows lowering of blood pressure by nitro-glycerine. It is useful in interstitial as well as chronic parenchymatous nephritis. Dr. Kinnicutt advises beginning with one two-hundredth of a grain of nitro-glycerine in alcoholic solution, to test the patient's susceptibility, and then, if it is well borne, continuing it in one-minim doses of the one per cent. solution each hour till relief of uræmic symptoms occurs or inefficiency of the treatment is demonstrated.

In urgent cases of renal dyspnœa of uræmia it may be given in one-minim doses at intervals of fifteen minutes for two or three times and afterward at one-half-hour intervals. Then, to avert critical attacks, maintain lowered blood-tension and prolong life, it may be employed for years in one-minim doses from four to six times daily.

Dr. Kinnicutt points out that it increases the amount of urine notwithstanding it diminishes general blood-pressure. Dr. H. B. Millard, in his work on Bright's disease, shows that according to the experiments of Goll, Stokvis and Overbeck[10], increased secretion of urine follows *pari passû* an increase of blood-tension, whereas the quantity of albumen depends upon rapidity of the blood-current. Diminished rapidity favors albuminuria. As nitro-glycerine stimulates the heart and dilates the vessels, it is easily seen how increased rapidity of vascular flow is brought about, but it is not so clear how the blood-pressure is heightened. Dr. Millard advances the theory that there is a local vaso-motor spasm which is relieved, or that the renal ganglia are stimulated.

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[6] New York Medical Record, December 19, 1891.

[7] Philadelphia Hospital Records, vol. i, 1890.

[8] Centralb. f. d. gesammte Therap. Schilling, February, 1886.

[9] I. Burroughs, M.D. London Lancet, June 29, 1889.

Brunton[11] believes that the local pressure in the malpighian glomeruli is increased physiologically by nitrites through their action in dilating the afferent branches of the renal artery supplying the malpighian tufts. This theory would reconcile the apparent anomaly of a drug, which generally lowers blood-pressure, increasing the quantity of urine. On the other hand, Dr. Millard reports a case of polyuria, with a hard and tense pulse, passing daily, for three weeks, twenty-four quarts of urine. The sulphate of iron (gr. iii, t. i. d.) brought about a reduction of this quantity to twelve quarts. Subsequently the use of glenoine (one minim of the centesimal solution four times daily) was followed by a diminution of the amount to six quarts per diem. This result may have been due to the fact that lessening of the general tension was the more important factor in the case than increase of local tension, but the therapeutic rationale in such conditions must still be cousidered *sub judice*.

Dr. J. B. Burroughs[12] thinks benefit is derived from the use of nitro-glycerine in acute nephritis, by its relieving renal congestion in dilating vessels elsewhere. He relates the history of a case where there was coma, with feeble pulse of 100, becoming a mere thread, which was given one-minim doses of nitro-glycerine every fifteen minutes for one hour and then every hour for four hours. The pulse was at this latter period 100, but full, the skin dripping and the kidneys had secreted a pint of urine.

I may be permitted in closing this section to append two extracts from letters kindly sent me relative to the matter in hand.

Dr. Francis P. Kinnicutt, of New York, writes that, "In all cases of renal disease, with high arterial tension, and also in other diseases where this condition has obtained, I have been convinced by a rather large clinical experience, both in hospital and private practice, that the effect of nitro-glycerine in ameliorating this condition is more positive than that obtained by other means."

Dr. Mary Putnam Jacobi, of New York, says, "I use nitro-glycerine in renal cirrhosis or in the high tension pulse of lithæmia, without demonstrable renal lesion, and with great benefit as to the various symptoms accompanying the condition."

Nervous Affections. — Epilepsy is one of the maladies more commonly treated with nitrites.

Dr. H. A. Hare, in his communication to the writer on the subject, says, "Nitrite of amyl whenever used has proved itself invaluable in the prevention of epileptic attacks which were preceded by a sufficiently prolonged aura to permit the patient using the drug."

Dr. Mary Putnam Jacobi writes me, "According to Crichton Browne's suggestion in averting an approaching epileptic attack, I consider the nitrite of amyl invaluable and order patients liable to epileptic fits to always have the drug in readiness. In my cases, where the disease was not inveterate, I have seen the the attacks greatly diminished in frequency by its use."

Osler[13] has found only a temporary improvement in most cases where nitrite of amyl was used continuously as an ameliorating agent. He recommends five minims t. i. d., increasing the dose up to eight minims where bromides fail.

The writer's experience has been very limited in this field and not particularly favorable in the use of nitrites as prophylactic agents in epilepsy, as his cases have been apparently "inveterate" ones. The nitrite of amyl is a better preparation for use as a prophylactic agent, given in the form of five-minim glass capsules; to be broken in the handkerchief and inhaled as soon as a premonition of the attack is perceived. It acts favorably in counteracting vaso-motor spasm of the cerebral vessels which is supposed to occur in the seizures.

Migraine, which is accompanied by a somewhat similar pathological condition, may be benefited by nitro-glycerine, especially where the face is pale.

Dr. H. F. Vickery, of Boston, writes me he has stopped a sick-headache with vomiting immediately, by inhalation of nitrite of amyl and also states that a dose of nitro-glycerine, once repeated, cured a case of violent intercostal neuralgia. He believes that nitro-glycerine has a certain sedative effect on the sensory nerves, in curing neuralgia, apart from its action in relieving spasm and in dilating vessels. It has been recommeded by Bartholow in gastralgia for the same reason and also in hepatic colic, reflex vomiting and tetanus, for its power in combating spasmodic conditions. Ringer speaks of its value in sea-sickness.

The nitrites are serviceable in spasmodic dysmenorrhœa. F. W. Kendle[14] advises the use of nitro-glycerine in dysmenorrhœa and the sickness of pregnancy, and reports a case of severe after-pains with a firmly contracted uterus and no clots, cured as if by magic. Hiccough is another spasmodic affection in which nitro-glycerine is remedial. The cold stage of ague, in which there is a vaso-motor spasm of the peripheral vessels, is relieved by nitrites.

We may summarize the therapeutical indications for the employment of nitrites as follows: (1) To dilate the peripheral arterioles and equalize the circulation in internal congestions; (2) To stimulate the heart; (3) To relieve spasm of vascular, nervous or muscular origin; (4) To increase the quantity of urine and diminish the amount of albumen; (5) Possibly to relieve pain.

POISONING BY NITRITES.

Many interesting cases, which practically represent the effects of toxic doses of nitro-glycerine, have been reported by Thomas Darlington, M.D.[15] They occurred in workmen overcome by dynamite fumes (volatilized nitro-glycerine) during the construction of the Croton aqueduct. The symptoms presented were: flushing of the face, succeeded by pallor, nausea and frequently vomiting, trembling sensations, throbbing of the temples, fulness of the head, as if it would burst, followed by intense headache persisting for twenty-four hours. The heart's action was increased and the pulse was full, round and compressible. None of the cases were fatal. The treatment consisted of cold applied to the head, ergotin and atropine subcutaneously, inhalations of ammonia and spirits of aromatic ammonia by mouth. Intense headache is sometimes produced in patients by nitro-glycerine in ordinary doses and precludes its use. Such an unfortunate result cannot be predetermined, as far as we know, although it is more likely to occur in cases treated for dysmenorrhœa.

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[10] Vide Charcot: Leçons sur l'Albuminurie.

[11] Practitioner, vol. xxxii, April and May, 1884.

[12] Ibid.

[13] American Journal of Nervous and Mental Diseases, vol. xiii, No. 1.

[14] London Lancet, March 19, 1887.

[15] New York Medical Record, p. 661, 1890.

Dr. H. F. Vickery reports to the writer a case where nitro-glycerine (gr. $\frac{1}{100}$) given by mouth to an adult caused within a minute the most frightful dyspnœa, pallor and cold extremities. There could be felt no radial pulsations. Alcoholic stimulation gave speedy relief. This exemplifies the rather common occurrence that the toxic effect of many drugs is opposed diametrically to their physiological action in medicinal doses. The depressing effect of overdoses of the nitrites on the heart, together with their paralyzing action on the red blood-corpuscles, interfering with the normal hæmic respiration, leads to syncope, dyspnœa and collapse.

Dr. Kolipinski[16] reports a case where a delicate woman took two drachms of the centesimal solution of nitro-glycerine. She became semi-conscious, her extremities were cold, face pale, she had gastric distress and vomited. Her pulse was strong and regular. She made a good recovery, the only treatment being a mustard foot-bath. The treatment consists in stimulating the heart and respiration and in contracting the blood-vessels. Alcoholic or ammoniacal stimulants may be used and ergotin, atropin and strychnine injected subcutaneously together with cold applications to the head.

Although symptoms of poisoning have been many times reported following the administration of ordinary therapeutic doses of the nitrites, we have yet to learn of any case proving fatal.

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NOTES ON TYPHOID FROM 676 CASES ADMITTED TO THE BOSTON CITY HOSPITAL IN 1890 AND 1891.[1]

BY A. L. MASON, M.D.

(Concluded from No. 14, page 332.)

TABLE I.

Complicating Causes of Death.

	Recovered.	Died.	Total.
Phthisis	4	3	7
Pneumonia	28	6	34
Pleurisy	8	3	11
Bronchitis (severe)	72	2	74
Œdema of lungs	15	10	25
Nephritis	45	15	60
Cardiac	11	4	15
Parotitis	1	1	2
Pregnancy	5	2	7
Phlegmasia	15	4	19
Perforations		9	9
Intestinal hæmorrhages	18	14	32
Delirium tremens	3	5	8

TABLE II.

Occasional Complications and Sequels (Non-Fatal).

	Cases.		Cases.
Abscess	2	Orchitis	1
Acute rheumatism	3	Otitis purulenta	22
Carbuncle	1	Pelvic cellulitis	1
Diphtheria	3	Periostitis	2
Empyema	2	Perityphlitis	1
Epididymitis	2	Purpura	1
Erysipelas	3	Scarlet fever	1
Furunculosis	2	Tonsillitis	7
Insanity	2	Tubercular peritonitis	1
Jaundice	1	Ulcer of leg	1
Neuritis	21		

CASES NOT AMENABLE TO TREATMENT.

In estimating the probable effects of treatment certain classes of cases may be excluded as having little bearing upon the question of therapeutics. Such are cases moribund at entrance; cases of intestinal perforation and hæmorrhage, and those fatal through delirium tremens, phthisis, chronic Bright's disease, chronic endocarditis or syphilis. Pregnancy must also be included as exposing females to an additional danger.

Therefore I have tabulated the following fatal cases on which the treatment would have had little influence, namely:

Moribund at entrance	15
Perforations of bowel (9)	7
Intestinal hæmorrhage (14)	13[8]
Phthisis	3
Chronic nephritis	2
Endocarditis (chronic)	2
Endocarditis with pneumonia	1
Pregnancy with pneumonia	1
Abortion with septicæmia and perforation	1
Delirium tremens	2
Delirium tremens with intestinal hæmorrhage	2
Delirium tremens with chronic Bright's	1
Total	50

The case of abortion with perforation and two cases of delirium tremens with hæmorrhage are entered twice. This leaves us 23 fatal cases in which the acute renal, circulatory and respiratory disturbances, diarrhœa and other conditions were probably due to pyrexial exhaustion. Of these, however, four had lobar pneumonia, of whom two entered on the fifth day of the fever and died on the eleventh and twelfth days, respectively. The pregnant woman with pneumonia, alluded to above, is not included. She entered on the fourth day and died on the eleventh day of the typhoid, in the sixth month of pregnancy.

One case only of fatal lobular pneumonia is recorded. He entered on the fourteenth and died on the thirty-fifth day. This complication is usually a late one.

One case died as mentioned above with acute aortic endocarditis, one with acute pleuritis, pericarditis and nephritis, and one with parotitis; and after defervescence, two from embolism of the pulmonary artery, and two from extensive thrombosis of the iliac and femoral veins.

The 15 autopsies are entered below. They were performed by Dr. Gannett and Dr. Mallory.

AUTOPSIES.

Perforations (5).

Case I. Man, thirty-three. Entered on 7th day. Died on 21st. Perforation one-third inch in diameter at junction of cœcum and ileum. Another, ten inches further up ileum, one and one-half inch long and one-half inch in diameter apparently confined to a Peyer's patch. Typhoidal enteritis. Acute fibrinous peritonitis.

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[1] Read before the Boston Society for Medical Improvement, January 25, 1891.

[16] Philadelphia Medical Times, p. 540, 1890.

[8] Two cases had perforation, and one had fatal hæmorrhage soon after entrance, and are included among the moribund.

Case II. Man, nineteen. Entered on 21st day. Died on 27th. Perforation of ileum a little above ileo-cœcal valve. Typhoidal ulceration of two or three Peyer's patches in ileum. Acute fibrinous peritonitis.

Case III. Female, twenty-nine. Entered on 29th day. Died on 54th. Perforation in cœcum corresponding to ulcer on mucous surface. Fifteen to twenty typhoid ulcers in cœcum and a few in lower ileum. Acute peritonitis.

Case IV. Female, twenty-six. Entered on 8th day. Died in relapse on 42d day. Perforation through Peyer's patch in lower ileum. Few typhoid ulcers in colon and lower part of ileum. Acute general peritonitis. Acute fibrinous pleurisy. Cloudy swelling of kidneys. Chronic mitral endocarditis with stenosis and insufficiency.

Case V. Man, fifty-three. Entered on 28th day. Died on 31st. Perforation two and one-half feet above cœcum, large enough to admit lead pencil. Typhoidal ulceration of Peyer's patches. Acute purulent peritonitis.

Hæmorrhages (4).

Case I. Female, twenty-one. Entered on 7th day. Died on 19th. Large intestine full of dark fluid blood. Typhoidal enteritis. Acute aortic endocarditis.

Case II. Man, twenty-four. Entered on 14th day. Died on 32d. Partly digested blood throughout small and large intestines. Typhoidal ulceration of Peyer's patches in lower ileum and in colon. Cloudy swelling of liver and mesenteric glands. Œdema of lungs.

Case III. Male, twenty-five. Entered on 8th day. Died on 18th. Typhoid ulcerations in lower three feet of ileum. Granular degeneration of liver and kidneys. Emphysema of lungs.

Case IV. Male, nineteen. No history. Typhoidal enteritis. Hæmorrhagic infarction of spleen.

Pneumonia (3).

Case I. Male. Acute fibrinous pneumonia at both bases. Typhoid ulcerations in lower ileum.

Case II. Female, twenty-five. Entered on 5th day. Died on 12th. Acute pneumonia. Acute fibrinous pleurisy. Granular degeneration of kidneys and liver. Typhoid ulcerations in first four feet above cœcum.

Case III. Male, twenty. Entered on 6th day. Died on 21st. Acute fibrinous pericarditis. Acute fibrinous pleurisy. Acute parenchymatous nephritis. Hypostatic pneumonia. Cloudy swelling of heart and liver. Typhoidal enteritis.

Pulmonary Embolism (2).

Case I. Male. No history. Embolism of pulmonary arteries. Hæmorrhagic infarction of lung. Thrombosis of common iliac and internal iliac veins. Acute septic pleurisy. A nodule of septic necrosis of spleen with extension through diaphragm. Cloudy swelling of heart and kidneys. Injection of vessels of brain. Typhoid ulcerations in lower ileum.

Case II. Male, twenty-eight. Entered on 16th day. Died on 43d. Embolism of pulmonary artery. Thrombosis of right external iliac and both femoral veins. Injection of lungs, kidneys and liver. Typhoid ulcerations in lower six inches of ileum.

Exhaustion and Pyrexia (1).

Case I. Female, twenty one. Entered on 5th day. Died on 11th. Cloudy swelling of heart, kidneys and liver. Typhoidal ulcerations in colon and lower ileum.

THERAPEUTICS.

Brand had collected, two years ago, 20,000 cases of typhoid fever treated by his plan, chiefly in Germany and in Lyons, with a mortality of about 7.5%. Most of the physicians who had tried it reported a considerably lower death-rate, this sometimes falling, in small series of cases and under favorable circumstances, to two or three per cent., or even to zero. It is to be noticed, however, that such results usually came from hospitals where many children and young persons were treated, and from the army hospitals in Germany where healthy young soldiers compose the material. Under these conditions many of the causes of a high mortality are eliminated.

In Paris, last year a committee was appointed to report to the Societé Médicale des Hôpitaux as to the mortality from typhoid fever in the Paris hospitals and the influence of treatment. This report[9] was on the whole favorable to Brand's method. It shows that under various modes of treatment, chiefly expectant, the mortality from 1866 to 1881 was 21.5%. From 1882 to 1888 it was 14.1%; in 1889, 13.5%.

Twenty-one reports from various *chefs de service* show 916 cases with 114 deaths, 12.44%, under different kinds of treatment.

In 1888 and 1889, 1,063 cases treated symptomatically showed 133 deaths, 12.51%; whereas, in 323 cases treated by baths, 32 died, or 9.9%.

Jaccoud, with the use of tonics, cold lotions and antipyretics, lost in sixteen years, 71 cases out of 655, or 10.8%.

Bouchard at the Hôpital Lariboisière, since 1884, with baths gradually cooled, intestinal antisepsis, quinine, etc., had a mortality of 11.16% in 421 cases, instead of 21% as before.

In this country, since the cases of Drs. Edes and Stedman at the City Hospital, reported about fifteen years ago, the system of Brand has not been brought before the profession in a practical manner until recently, when Dr. James C. Wilson, in Philadelphia, Dr. Baruch, in New York, and other physicians have reported a few cases. Dr. Wilson, at the German Hospital in Philadelphia, treated 66 cases without a death.

Under the use of prolonged tepid baths, Riess, in 900 cases, had a mortality of 7% to 8%; and under simple expectancy with four or five litres of drinking water daily, Debove, at the Hôpital Andral, of 9.2%.

Dr. James Barr, of Liverpool, England, reports[10] twelve cases of severe typhoid treated successfully by prolonged immersion in a tank filled with water at a temperature of 90° to 98° F. Patients were kept in the tank constantly for periods varying from six to thirty-one days. The inconveniences of such a method are obvious but the results appear to have been very good.

At the City Hospital latterly cold spongings and affusions have been applied very thoroughly, at frequent intervals day and night if necessary, the water being cooled with ice during the warmer months and sponging of the whole surface being continued long enough to lower the temperature materially. As 100 typhoids, more or less, are in the wards for many weeks continuously, this involves more labor probably than the administration of full baths, and the discomfort to the patient is quite as great. The effect upon the pyrexial symptoms, however, has been manifest.

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[9] Gazette Médicale des Hôpitaux, July 10, 1890.
[10] Lancet, March 20, 1890.

It seems, then, that hydro-therapeutic measures in some form or other have received the general approval of the medical profession and the only question is as to the best methods. I think that the full bath of Brand is the most efficient and convenient.

Antipyretic Drugs. — The rapid disfavor into which these drugs have fallen owing to their depressing influence in unsuitable cases has, I think, led to their too general abandonment. Phenacetine, especially, in three, five or ten grain doses often proves valuable in allaying fever and modifying the nervous symptoms. Phenocoll, a newer compound, has been used in a few cases with similar effect.

Laxatives in the first week fulfil a rational indication and of these I think the salines are preferable.

Internal Antisepsis by the use of minute doses of calomel, salol in five-grain doses several times daily, naphthaline, salicylate of bismuth and naphthol, has been attempted in a more or less systematic manner at the City Hospital. Of these agents hydro-naphthol in doses of from two to four grains every two hours has appeared to have influence in modifying diarrhœa and the offensive character of the stools. But it is doubtful whether the infecting germs and poisonous alkaloids can be effectually neutralized in this way by any harmless agent.

Hydro-naphthol. — Between May 9, 1891, and January 1, 1892, 103 cases of typhoid were admitted to the second medical service, 83 males and 20 females; 48 had diarrhœa, 55 had not; 45 were treated with hydro-naphthol, 58 were treated without hydro-naphthol. Of the former series two died; of the latter series seven died. None of those who used hydro-naphthol had hæmorrhage from the bowels, while three of the others had. In 27 patients diarrhœa diminished or ceased while using this drug, often after a few days, sometimes not for two weeks. Relapse took place in six patients who were treated without hydro-naphthol and in four who took this drug.

About 30 patients without regard to the presence or absence of diarrhœa were treated from the time of admission continuously with hydro-naphthol, at first, every two hours, later every four or six hours until convalescence was well established, in the hope of preventing relapse. Two of these patients had relapses, nevertheless, and one died with symptoms of perforation of the bowel. No ill-effects attributable to the drug itself were noticed in any case. These facts were tabulated by Dr. Benjamin Tenney, house-physician, who watched all the cases.

Stimulants. — Too early use of stimulants as well as their over-use, is to be guarded against. But with the large number of alcoholic subjects who come under treatment it is often difficult to decide how far it is prudent to withhold their accustomed stimulus. A weak heart and rapid pulse should be the guides, in spite of nervous symptoms which may supervene. As in pneumonia, delirium tremens often comes on in typhoid patients several days after admission.

In general, careful attention to the digestion and to the eliminating organs, a free supply of drinking-water, correct estimation of danger-signals, and prompt application of such measures as each case may demand are of more importance in the management of this complicated malady than any systematic method, however brilliant its results may appear to be.

But we cannot escape the fact that the mortality from typhoid fever has diminished all the world over during the last twenty-five years, and that Brand's system of bathing is thought by a large number of the best observers to be an important factor in this reduction.

CONCLUSIONS.

(1) That in the Boston City Hospital the mortality in typhoid fever from patients admitted moribund and with grave complications is 4%.

(2) That at least 3% more die from intestinal perforation and hæmorrhage.

(3) That little diminution in the mortality from these causes can be expected under any mode of treatment.

(4) That the mortality from renal, pulmonary and circulatory disturbances, from diarrhœa and pyrexial exhaustion, is about 3.5%.

(5) That, excluding deaths from intestinal perforation and hæmorrhage, the mortality among females is 3.4% greater than among males.

(6) That a diminution of 2% in the general mortality might be expected from the systematic use of cold baths, the reduction being largely in females.

(7) That favorable results followed the trial of intestinal antiseptics, but that relapses were not prevented thereby, and that a much wider experience is necessary to determine their value.

CASES OF LAPAROTOMY PRESENTING FEATURES OF UNUSUAL INTEREST.[1]

BY CHARLES P. STRONG, M.D.

Assistant Surgeon, Free Hospital for Women, Physician to Out-patients, Massachusetts General Hospital, etc.

Many of the operations performed by me during the last eight years, involving opening of the abdomen for various reasons, have been reported; but there remain others, presenting certain points of interest, which have not been reported. I wish to emphasize and illustrate by some cases the following points:

The difficulties of diagnosis of abdominal growths.

Results of removal of the uterine appendages in their influence upon menstrual disorders associated with reflex symptoms.

Change, as of senile atrophy, rapidly following the removal of diseased ovaries.

Certain unexplained results; for example, decrease in tumors with subsidence of symptoms following laparotomies, which are but little more than exploratory incisions.

The difficulties of diagnosis of abdominal growths.

Mrs. L. S., thirty-eight. Married six years. One miscarriage at six months, five years ago, since which time menstruation has been more abundant.

Examination under ether December 10, 1889. The patient had previously to this time been under treatment in the out-patient department for hæmorrhages, very constant and very profuse, confining her to bed for two weeks at a time. During the past three months these hæmorrhages had been almost without cessation. She entered with a diagnosis of submucous fibroid. A mass the size of a pigeon's egg, firmly connected to the uterus, was found on the left. In the median line was felt a mass extending up to the umbilicus, the pubic outline of this induration illy defined. The fundus of the uterus could not be mapped out. On the right side was a firm, movable mass about the size of the kidney, at the level of the umbilicus. The depth of the uterus was four and one-half inches. The curette brought away, through an os that readily admitted two fingers, considerable masses of tissue, which Dr. W. F. Whitney pronounced hyperplastic uterine mucous membrane. The diagnosis of fibroid was apparently confirmed by this examination, in so far as it was possible to make any diagnosis.

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[1] Read before the Obstetrical Society of Boston, February 13, 1892.

The hæmorrhage not being checked by the curetting, the patient was operated upon, and the following condition found: The left tube convoluted and twisted upon itself, and glued to the uterus, its cavity distended with puriform secretion, formed the mass on the left. On the right, the whole broad ligament spread over the intestines like the omentum, and was attached at the level of the umbilicus. The right tube was very much enlarged, holding about four to six ounces of puriform material. This kidney-shaped mass, which felt like a pediculated fibroid, the omentum and the apron-like broad ligament were firmly adherent throughout their extent, and the intestines were also matted together by both chronic and recent adhesions. The case was one of double purulent salpingitis and pelvic peritonitis.

Results of removal of the uterine appendages in their influence upon menstrual disorders; reflex symptoms.

Mrs. H. N. T., thirty-two. Mother of three children. Questionable miscarriage a year and one-half ago, at two months. Seen in June. Always been well previously until March, when it was supposed that she had an attack of malaria, as she had chills and fever. These were accompanied by very little pain on the right side. In bed about half the time. In May a swelling was noticed on the right side; coincident with the appearance of this swelling, there was pain in the right leg along the course of the sciatic nerve, and pain which shot up along the course of the right ureter. The pain was so excessive as to demand frequent and large doses of morphia. Patient much emaciated; general condition very poor; occasionally a high temperature; most of the time the temperature very slightly elevated above normal. Depth of uterus between three and three and one-half inches. No catamenia since March, that is, three months. Had previously been entirely regular.

Under ether there could be felt an enlarged tube on the left side. On the right side there could be felt adhesions; and in the median line a mass about the size of the fœtal head at term — elastic, not distinctly fluctuating, not separated from the uterus, lying toward the right side, and on the anterior surface of the uterus. This tumor had increased somewhat in size since it was first discovered, but not rapidly. The diagnosis was between a uterine fibroid and salpingitis, with the preference rather in favor of the former from the relation of the mass to the uterine body. I operated the first of August, and found the mass overlying the uterus to be a tubo-ovarian abscess, densely adherent to the surrounding tissues. The ovary contained a cyst the size of a man's fist, into which the thickened tube opened freely; this cyst was filled with somewhat offensive pus. In consequence of the manipulations necessary to free it from its adhesions, tears were made into the rectum and into the tube, so that the pus escaped freely into the cavity of the rectum and the abdominal cavity. The rectal tear was stitched up by a continuous suture of fine silk. The left tube was also freed from its adhesions and removed; it was enlarged to the size of the little finger and contained pus. The abdominal cavity was washed out and the patient made a perfect convalescence.

In this case it was impossible to say that the tumor felt before the operation was not fibroid. Its location, the symptoms caused by its presence, were all indicative of fibroid rather than salpingitis. The estimated contents of the two tubes was a pint in the right side, a half a pint in the left.

I operated during December, 1890, upon three cases to bring about cessation of the menstrual flow, and involution of the genital uterine organs.

Miss G. C., school-teacher. Bed-ridden for two years; intense dysmenorrhœa; probably from the history, membranous dysmenorrhœa. Had been dilated, curetted, galvanized, undergone the rest cure, and, in fact, had every treatment that could be suggested, without relief. Removed both tubes and ovaries, which were reported by Dr. Whitney to show increase of cicatricial tissue in the ovaries; tubes slightly catarrhal. The patient has entirely recovered. Superintended and performed a housekeeper's work on a large farm where there were many boarders last summer, and is self-supporting in every way, and entirely free from abdominal pain at the present time.

Miss S. B. Associated with the dysmenorrhœa was intolerable backache and pain in the side. She had been attendant at the out-patient department for nearly four years pretty constantly. Uterus was retroflexed and strongly adherent. By one or two etherizations and manipulations the adhesions were broken up, and the uterus replaced; but it never stayed long in its position. The shortening of the round ligament kept it in place six months; then it went backward, due to the traction of the unruptured adhesions, uniting the uterus and rectum. Both broad ligaments were shortened and thickened. The laparotomy showed that the reason for the falling backward of the uterus was not due to the stretching of the round ligaments, but to the fact that they had each ruptured at the uterine attachment, permitting the fundus to go backward. The patient is now very well; not strong as she will be, but gaining constantly. Her weight has increased from ninety-five to one hundred and fifteen pounds.

Miss K., thirty years of age. Always had dysmenorrhœa, which, during the past few years, has steadily increased, rendering her unable to perform her duties as nurse Headache nearly constant, pain over each ovarian region, nausea. The inter-menstrual periods too short to permit complete recovery of strength. Previous treatment very thorough, including rest, galvanism, drainage of uterus.

Both Fallopian tubes and ovaries removed. Report, December, 1890: "The microscopical examination showed evidence of a former catarrhal salpingitis with cicatricial contraction in both tubes and ovaries." Convalescence uneventful. Since the operation the patient has performed her duties as nurse, and gained flesh and strength, suffers from no reflex phenomena and considers herself entirely well.

These three cases represent the favorable results which may be accomplished by this treatment; but, as I have always taken occasion to state, I never would advise removal of the uterine appendages to overcome symptoms on any account, unless these symptoms were acutely threatening, without first having the patient pass through preliminary palliative treatment of suitable duration and character.

Change, as of senile atrophy, rapidly following the removal of diseased ovaries.

Mrs. L. Was referred to me last December for operation, having a large rectocele and lacerated and sub-involuted uterus. On examination, I found in addition to these lesions, an ovarian cyst upon either side, which I removed by laparotomy, and which proved to be dermoid, and occupied, so far as could be determined, the entire structure of the ovary, consequently these must have formed rapidly, as her child was only eighteen months old at this time. She made a perfectly uninterrupted recovery, and was to report six months later for the plastic operation first advised. At that time there were such marked changes of atrophy occurring, that I deemed it best to wait until further time had elapsed to see if this operation could be avoided.

January, 1892, one year from the operation, I found atrophy of the uterus and the vagina, and a senile-vaginitis with its tendency toward adhesive inflammation, as marked as though she had normally passed the climacteric ten years.

Certain unexplained results; for example, decrease in tumors with subsidence of symptoms following laparotomies, which were but little more than exploratory incisions.

Miss M. S., twenty; single; school-girl.

December 9, 1890. Previous history and family history both good. Three months ago had pain in both ovaries and lumbar region, coincidental with a profuse, greenish discharge from the vagina; frequent and painful micturition. The menstrual history is of interest. Before this, for a number of years, she had been regular, flow lasting four days, and requiring six to eight towels. The first menstruation after this pain began lasted but one day and she used but one towel. The second appeared two weeks late, and then was brought on by medicine which her medical attendant gave her. The third was similarly late, but had appeared without the use of medicine or treatment.

The pains at first lasted about an hour, occurring only two or three times daily, without abdominal tenderness on pressure. These pains grew steadily worse, both in frequency and severity. Ten weeks ago these attacks were followed by fever, intense pain and abdominal soreness, necessitating confinement to bed, with indefinite, but large doses of morphia; a temperature varying from 102° to 104°, and very considerable bladder irritability.

I first saw the patient December 9, 1890. She had then been in bed ten weeks, and was more or less completely narcotized. Her temperature was 102°, abdomen very sore, slightly enlarged. The following day, under ether, I found by examination, that there was atresia of the vagina about two inches within the vulva, through which I could not insert an ordinary sound. Combined rectal and abdominal dilatation showed a mass upon either side of the pelvis, dense, elastic, non-fluctuating, indistinct in its outlines, but extending, apparently, across the whole pelvis. I made a diagnosis of salpingitis and peritoneal adhesions. There was no vaginal discharge of moment, so that I restored the vagina, by curetting and dilating, to its normal dimensions. The posterior cul-de-sac was lacking, the cervix terminating abruptly the upper end of the vagina.

Rest in bed, and the employment of hot douches produced little effect upon the temperature, which continued fluctuating daily between 100° and 102°, with regularity. The patient's general condition seemed quite good, with this exception.

I operated January 2d. Through an incision of two inches it was found that the omentum was glued everywhere to the surface of the abdominal walls. The perineum was much thickened, and everywhere there were light, fresh adhesions which were easily separated. Deflecting the omentum upward and backward, there occurred a discharge of six to eight ounces of clear, serous fluid. There was no evidence of any cyst having been opened, but everywhere, as the finger was swept about, it encountered matted masses of intestines, which in part were easily separated, and the interstices of which were filled with fluid of encysted peritonitis. This line of pelvic peritonitis terminated sharply at the brim of the pelvis, above which were all the intestines except the rectum and some few matted and adherent coils of the smaller intestine.

The adhesions which bound these parts together were, as a rule, well organized and very strong. Many of them existed as long bands, notably one or two which seemed to stretch entirely from one side to the other of the pelvis like a piece of twine. These long bands were, as a rule, about as large as a lead pencil. The largest cavity that was opened, contained perhaps, about six ounces of serum. Multitudes of smaller cysts contained amounts varying from a few drops to an ounce or two.

There were two especially distinct masses to which the tubes could be traced, and which probably contained the ovaries, but an attempt to dissect these out to remove them, showed that the ureter on either side was also implicated in these masses, consequently, I terminated the operation by breaking down all the adhesions possible, by sponging out and rupturing all the cysts, and by replacing, as far as possible, the intestines in their normal position. Convalescence was uninterrupted. Pain ceased from the time of the operation; temperature fell to normal, and remained there. Examination under ether, one month after the operation, showed that there was present two distinct masses; one on the right, about the size of a pigeon's egg, and one on the left, about the size of a hen's egg. The patient has reported from time to time, is perfectly well, going to school again, and menstruation has resumed its normal course.

Miss M., nineteen. Referred to me by Dr. Marion. Gives history of having passed through two severe attacks of pelvic inflammation, accompanied by high fever. It was supposed at that time that she had salpingitis. The last attack had been about two months before I saw her. There was a firm, dense, resisting mass to be felt, filling the left side of the pelvis, crowding the uterus to the right, very tender. The exploratory incision showed this to be a fibroid growth beneath the front of the broad ligament; its seat of attachment to the uterus occupying about two-thirds of the lateral surface of that organ; non-pediculated intramural. The broad ligament and uterus were so matted together, as the result of previous peritoneal attacks, that it seemed unwise to attempt the enucleation of the fibroid. The patient made a good recovery from the exploratory incision, has been able to resume her work, has declared that there is a noticeable decrease in the size of the mass, and that she is entirely free from pain, unless after very prolonged exercise, when she finds that the left side tires more easily than any other part. Exactly what local change, if any, has taken place here beyond that of freeing the adhesions, I am unable to say, but certainly the patient has practically received great benefit.

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PURULENT OPHTHALMIA NEONATORUM AS A CAUSE OF BLINDNESS.[1]

BY FREDERICK E. CHENEY, M.D.
Instructor in Ophthalmoscopy, Harvard Medical School; Assistant Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

The term, purulent ophthalmia neonatorum, is used in preference to ophthalmia neonatorum in this paper, for the reason that the latter seems to me objectionable, including as it does, all inflammation of the conjunctiva occurring in the new-born. A very large proportion of these cases are extremely mild in character; they recover rapidly with the use of "borax and camphor," or some other mild collyrium, and stand in the same relation, as regards importance, to the purulent variety, that simple catarrhal conjunctivis in the adult, does to gonorrhœal ophthalmia. If purulent ophthalmia neonatorum could be more generally applied to the disease so much discussed and written about as a cause of blindness it would undoubtedly save much confusion. The character of this affection is so well-known that more than a brief mention of its symptoms and appearances is unnecessary. It usually begins within three or four days after birth, — occasionally as late as the seventh or eighth. At first, the discharge is thin and watery, but it soon becomes thick, yellow, and copious. The conjunctiva is greatly injected, the lids are considerably swollen, and if they be everted, the palpebral conjunctiva will be found infiltrated and thickened, with an intensely red, velvety look, and will bleed easily on slight irritation. We have, in fact, a purulent inflammation of the conjunctiva caused by infection from some morbid vaginal secretion, and which to all appearances, differs from gonorrhœal ophthalmia only as regards its lesser intensity. By an unfavorable termination of the disease, we understand that a secondary inflammation of the cornea has taken place, which has resulted in an impairment, or entire loss, of sight. It is but natural that the gravity of the affection should be more fully realized by the oculist, who is continually seeing the unfortunate results, than by the other members of the profession who, perhaps, see but one or two such cases in a lifetime. Statistics as to the cause of blindness, from various asylums are, however, so nearly uniform in the per cent. attributed to this disease, that there can be no question of exaggeration as to its importance. For example, the asylums of Switzerland, give 26.02% to this cause, of Germany, 25.83%, of Hungary, 20.47%, while in this country, the New York State Asylum, at Batavia, gives 19.5% (Howe), the Philadelphia Blind Asylum, 20% (Harlem), and the Perkins' Institution for the Blind, with the Kindergarten at Jamaica Plain, 18.6% (Derby).

In an article entitled "Legislation for the Prevention of Blindness," Dr. Howe, of Buffalo, writes concerning this disease as follows: "There is a perfect unanimity of opinion that when these cases are seen at the very outset, the eye can be saved in almost every instance with little or no injury, while, on the other hand, ulceration and perforation often occur when the children are neglected until the disease is far advanced."

If it is a fact, and I believe it is, that purulent ophthalmia neonatorum terminates favorably in almost every instance, when recognized and properly treated from the beginning, neglect or ignorance is accountable for about one-fifth of all the cases of blindness occurring in early life. For obvious reasons, the affection is most prevalent among that class of patients who are the least able to comprehend its serious nature, and who, consequently, often fail in obtaining proper medical advice until it is too late to be of any value. In a hope of rectifying, in a measure, this unfortunate state of affairs, at the recommendation of Dr. Howe, made in a paper read before the New York State Medical Society, February 18, 1886, on "Purulent Conjunctivitis of Infancy and Blindness," the following law, headed "An Act for the Prevention of Blindness," was adopted by the New York legislature:

> SECTION 1. Should any midwife or nurse having charge of an infant in this State notice that one or both eyes of such infant are reddened or inflamed at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant, to report the fact in writing within six hours to the health officer or some equally qualified practitioner of medicine of the city, town or district in which the parent of the child reside.
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> SECT. 2. Any failure to comply with the provisions of this act shall be punishable by a fine, not to exceed one hundred dollars, or imprisonment not to exceed six months or both.
>
> SECT. 3. This act shall take effect on the first day of September, eighteen hundred and ninety.

This law has been in force for so short a time, that it is impossible to arrive at any definite conclusions as to the amount of good it is capable of accomplishing. If the per cent. of blindness from this cause can, however, be decreased in the least decree by the adoption of such laws, other States should not be slow in following the lead taken by New York in this matter. In Boston, the employment of midwives is, I understand, a very much less common practice than formerly, since the establishment of the "Out-Patient Department" in connection with the Lying-in Hospital. In other parts of this State it is probably still considerably practised, and if an act for the "prevention of blindness" should be adopted by the legislature of Massachusetts and properly enforced, some good would undoubtedly result.

The nurse and midwife cannot, however, be held accountable for every unfortunate case. The physician is, in many instances, directly responsible in that precautions are not taken for the prevention of the disease, or it is not properly treated when found to exist. The result of bad treatment in diseases of the eye is apt to be more apparent, both to the physician and patient, than are errors of equal gravity in other situations; and it is probably for this reason that the study of ophthalmology is more neglected by the general practitioner than are the other special branches of medicine, it being thought unnecessary to give much attention to a subject, whose practice is regarded both by the profession and laity, as best confined principally to the hands of the specialist. There are, however, a certain class of cases, and first among them purulent ophthalmia neonatorum, that may be properly considered in the light of emergency cases, and which every practitioner should be as well qualified to treat as he is pneumonia, dysentery, scarlet fever and the various other troubles that are usually considered as falling more within his province. The physician in or near the city can, if he choose, transfer the responsibility of these cases to the oculist, but in the country he must take entire charge, and will be held accountable for any unfortunate result. It is of the first importance, therefore, that the value of prophylactic measures, and the necessity of a thorough and intelligent treatment of the disease, should be more generally recognized by members of the profession. The large number of out-patients that come under the supervision of the Boston Lying-in Hospital, offers, it seems to me, an exceptional opportunity for the practical illustration of the points in question; and if certain regulations could be introduced and systematically carried out, I am confident that results published at the end of five years would emphasize their importance, in this vicinity at least, as no other method would be capable of doing. The custom of washing the vagina before and during labor, as practised in this institution, is certainly to be commended; and if, in addition, a single drop of a two per cent. solution of nitrate of silver could be dropped into the the eyes, after they have been thoroughly cleaned, as recommended by Credé, the chances of this disease making its appearance would be still further lessened. A moderate amount of irritation is usually produced by this procedure, the eyes being red and watery for two or three days. If, however, but one or two drops have been used, nothing more serious is to be looked for. Dr. Noyes, in his text-book on "Diseases of the Eye," expresses the opinion that a one per cent. solution can be employed with equally good results, and in the hands of the inexperienced it would probably be safer to use it. If, in spite of these precautions, a purulent inflammation develops, the child might be referred at once to the Massachusetts Charitable Eye and Ear Infirmary, or some other institution, where a record could be kept of the case, as to the severity of the inflammation, condition of the eyes at time of discharge, etc., and made use of later, if desirable. It would not be difficult to arrange some such system and it would undoubtedly produce satisfactory results, not only in directly preventing a few cases of blindness, but also in impressing upon the minds of future practitioners, the fact that purulent ophthalmia neonatorum is a serious trouble and one that must not be neglected.

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[1] Read by invitation before the Obstetrical Society of Boston, February 13, 1892.

There is very little difference of opinion as to the value of nitrate of silver in the treatment of this disease, and if this agent is properly used, in connection, of course, with thorough cleanliness, that is, in keeping the eye as free as possible from the purulent discharge, the results will be almost invariably satisfactory. Its daily application in a one or two per cent. solution to the palpebral conjunction, as long as the lids remain infiltrated, and there is the least purulent discharge, seems to me of the utmost importance. It is not at all unusual to meet with cases where this treatment has been discontinued too early, and the inflammation again becomes decidedly active in consequence. It is certainly a safer plan to continue its use for a few days after the discharge has entirely ceased.

Clinical Department.

TWO CASES OF PREGNANCY AND LABOR AT TERM, FOLLOWING THE ALEXANDER-ADAMS OPERATION.

BY F. W. JOHNSON, M.D.,
Visting Gynecologist, Carney Hospital; Visiting Gynecologist, St. Elizabeth's Hospital.

Case I. J. K., married, thirty years of age, mother of two children, was sent to me by Dr. J. J. McCann, September, 1889.

Since last confinement, five years ago, has aborted four times; at seven, five, seven, and three months respectively. Last abortion occurred in June, 1889. At this time there was excessive flowing, but no history of inflammatory trouble. Dated her trouble from the third abortion, which occurred Christmas, 1888. As in June, there was excessive flowing, but no symptoms of inflammatory trouble. Menstruates every twenty-five days. Flows three to four days. Flows but little. No dysmenorrhœa. Complained of sagging and dragging down, and leucorrhœa. She was one of those fat, flabby neurasthenics so well described by Dr. Mitchell.

Diagnosis: Ruptured perineum; retroflexion; bilateral laceration of the cervix; left ovary prolapsed and adherent beside the uterus at the base of the left broad ligament. This diagnosis was verified, under ether, by Dr. Conant and myself.

After using the packing for a few weeks the uterus became perfectly movable, but a pessary could not be worn owing to the so-called "thickening" at the base of the left broad ligament, which "thickening" I have always found to be due to a prolapsed ovary or tube, or both, and not in any way caused by a thickening in the broad ligament.

In a very large experience with examinations under ether, both through the rectum and with the fingers inside the abdominal cavity, I have never found any alteration in any way, shape or manner in either broad ligament that would suggest a previous attack of inflammation in the cellular tissue. Except in cases of sepsis following an abortion or labor, pelvic cellulitis is rare.

The sagging and dragging down still continuing she was advised to have the lacerated cervix repaired, and to have the round ligaments shortened to correct the retroflexion.

February 21, 1890. Operation. Dr. W. M. Conant assisted. Both the operation on the cervix and the Alexander-Adams were a success, and relief was obtained from all pelvic symptoms. I saw her every month or two, and she remained perfectly well as far as the contents of the pelvis were concerned. November, 1890, she became pregnant, and was delivered August, 1891.

In answer to several questions, Dr. McCann, who attended her, wrote the following concerning the case: "There was one thing peculiar about the pregnancy.

She carried the child much higher than ever before. Had much better health and less sickness during the nine months. These three facts are in strong contrast with similar conditions in every previous conception."

Length of labor? "About one and three-fourths hours."

Sex and weight of child? "Boy: nine and one-half pounds."

Character of labor? "She had good pains, better than ever before."

Puerperium? "She remained in bed fourteen days. She flowed a good deal — not post-partum hæmorrhage — but during her stay in bed she lost considerable blood, although there was good and permanent contraction of uterus. She was weak on getting up, but nothing of interest occurred. She nursed the baby."

What is the condition and position of the uterus? "The womb seems a little heavy, but in normal position. It does not seem lower or dependent, yet she passes a considerable yellowish discharge."

October 29, 1891. Examined at my office. Uterus in perfect position. Cavity measured two and one-half inches. No discharge from vagina or cervix.

Case II. M. McG., married, twenty-seven years of age, was sent to me by Dr. J. J. McCann, December 29, 1890. She complained of pain in the back and in the left ovarian region. Every month for the past year, midway between each menstrual period, suffers from nausea and vomiting. Menstruation began at sixteen; regular every four weeks. Flows moderately for three days. Some dysmenorrhœa for the first two days of the flow. No children. No abortions. General health good. She sought relief for sterility.

Diagnosis: Retroversion with adhesions; left ovary prolapsed; chronic endometritis.

January 21, 1891. Operation. Dr. Conant assisted. Cervix dilated for drainage. Round ligaments shortened. Ligaments fastened with silk-worm-gut. Incision closed with silk.

January 27th. Superficial abscess on the right side.

January 29th. Small superficial abscess on the left side.

February 21st. Uterus in perfect position, except that it was drawn over towards the right side. The right ligament was probably so shortened that during healing it drew the uterus away from the left side. Discharged well.

March 7, 1892. Reported at my office. Menstruated for the last time March 25, 1891. Confined December 28, 1891.

During the third and fourth months there was some morning sickness, "about every other morning." During the last two months of pregnancy she had considerable pain in the right side with bearing-down. In labor seven hours. Staid in bed fourteen days. There was a bloody discharge from the vagina for four weeks after confinement.

The child was a female, and weighed about five pounds. Examination found the uterus in the same position that it was when she went home, February 21, 1891. The left ovary could not be found. Since the operation there had been complete relief of all backache and of the pain in the left ovarian region. There was present endometritis.

A Moral City. — A Chicago paper states that a manufacturing chemist of that city recently received an order for five million aphrodisiac pills.

Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.

PROLAPSE OF THE FEMALE URETHRA.

Kleinwächter[1] has found in the literature of the subject the records of nearly a hundred cases. As a result of a careful study of the cases, he has come to the following conclusions:

(1) Urethral prolapse is by no means so rare an occurrence as has been generally supposed.

(2) The cause of the prolapse is as yet not fully understood; this much is sure, however, that the age of the patient plays the most important part.

(3) Children are most frequently affected, probably as a result of the peculiar typographical anatomical relations of the bladder and urethra.

(4) Next to children, but much less often, women who have passed the menopause are affected. This is probably the result of senile involution.

(5) Women in the height of sexual activity are most rarely the subject of this affection, in spite of the fact that they are apparently most exposed to those injurious influences which might cause prolapse.

(6) Prolapse of the urethra is of varying importance according to the place where the separation of the mucosa from its underlying structure begins, and in consequence calls for different operative measures.

(8) The separation of the mucosa in the lower part of the urethra with consequent prolapse requires only a simple operation, the removing with knife or scissors of the prolapsed mucous membrane and uniting the cut edges.

(8) If the mucosa becomes separated higher up in the urethra and later is crowded down, this is not a simple prolapse but an inversion of the mucous membrane with prolapse. Such a condition requires the opening of the urethra and the removal of a portion of the separated mucous membrane with subsequent suturing of the wound.

(9) If the prolapsed mucous membrane is removed regardless of the form of prolapse present, much damage may be done.

(10) Ligating the prolapsed part is entirely contrary to the principles of antiseptic surgery.

DRAINING AFTER ABDOMINAL SECTION.

Dr. R. B. Hall[2] makes a strong plea for drainage after abdominal section. He claims that in the majority of fatal cases of laparotomy, the cause is sepsis from the absorption of septic fluids in the peritoneum. For this reason he would keep the peritoneum drained until the fluid removed is straw-colored. It has been his practice to do this in every case, simple or complicated, removing the tubes if it is found unnecessary, in from eight to ten hours. He has never had bad results, either in the way of its being a source of septic infection, or a cause of hernia, or from the omentum being caught in the perforations, and he says he has saved the lives of several patients by putting in a drainage-tube when it was apparently not indicated.

DRAINAGE OF THE UTERUS.

Dr. W. M. Polk[3] describes a method of draining the uterus for chronic endometritis and metritis, not only when these conditions exist independently of salpingitis or other forms of perimetritis, but also when they are associated with such disorders. His conclusions are based on the results in forty cases that he has operated on.

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[1] Zeit. für Geb. und Gyn., Band xxii, Heft 1.

[2] Medical Record, December 12, 1891.

[3] New York Journal of Gynecology and Obstetrics, February, 1892.

He refers to the fear which has prevailed of invading the uterine cavity, especially if there is disease of the appendages, and claims that there is no ground for such fear if scrupulous cleanliness is observed, and the escape of infecting material is provided for.

His method is to thoroughly disinfect the genital tract, dilate the cervix, introduce the cervical speculum, which should have an anterior diameter of about five-sixteenths of an inch, irrigate the interior of the uterus with bichloride, curette, and then pack the cavity with gauze. This may be left in until the sixth day. As a rule, only one packing is needed, but if a second is desirable, it can be done without anæsthesia at the time of the withdrawal of the first.

The results gained are depletion of the uterus, reduction in size in cases of sub-involution, cessation of endometrial discharge and the diminution in size of peri-uterine masses. There is very little febrile action following this procedure.

TREDELENBURG POSTURE FOR GYNECOLOGICAL EXAMINATION.

Stroynowski[4] recommends this position not only in abdominal operations where a clear view of the pelvis is desirable, but also in simple gynecological examinations where the pathological condition of the pelvic organs is difficult to make out. In one case where there was considerable free fluid in the peritoneal cavity and it was of importance to determine the relations of the appendages to the uterus, this position, which allowed the fluid to gravitate towards the diaphragm, enabled the author to make a satisfactory examination. He finds that in all difficult cases it makes the exploration easier.

VAGINAL OÖPHORECTOMY.

Dr. H. T. Byford[5] makes a plea for the more frequent employment of vaginal oöphorectomy for the removal of diseases of ovaries, and small ovarian tumors. In sixty-two cases of vaginal section he has had but one death, twenty-seven being vaginal hysterectomies, one of which died, and thirty-five vaginal oöphorectomies with no death. He prefers it in suitable cases, if for no other reason, because it avoids the danger of hernia. He gives the history of a case which presented more than the ordinary difficulties, including extensive adhesions, a right ovary buried in solid adhesions, and persistent hæmorrhage requiring a Mikulicz drainage, all of which difficulties were easily met, and the patient did well.

He claims that where the trouble is low down in the pelvis, an exploratory incision through the vagina will be more satisfactory, and less of an operative procedure than an abdominal section. Usually the vagina can be rapidly dilated sufficient for the manipulation, even in the case of virgins who have passed the menopause. In only one case was perineal incision necessary.

As regards reaching the diseased parts, if the uterus is retroverted or the cervix can be pulled forward and the fundus easily pushed down into the cul-de-sac of Douglas, Dr. Byford is confident the ovaries can be also pulled down into the vaginal opening. If the cervix is back and the fundus forward, he prefers the ventral incision. The same principles apply to the danger of wounding adherent intestines. If the structures are low down in the pelvis, there is not much likelihood of extensive adhesions to the bowel; if high up, such adhesions are more likely to occur, and they had better be approached by the abdominal route.

HYDRASTININ IN HEMORRHAGE FROM THE UTERUS.

Abel,[6] as a result of the trial of this drug, first recommended about two years ago by Falk, in cases of meno- and metrorrhagia, considers it a valuable addition to our means of controlling hemorrhage. He found it efficacious in cases of primary bleeding in endometritis and myomata, and in secondary hemorrhage from disease of the appendages, as parametritis, tubal cysts, and tubo-ovarial tumors; also in cases of so-called ovarian or congestive hemorrhage, where no disease is found. Abel always uses it subcutaneously, and for the details of the method as regards dosage and frequency in the varying conditions present, the reader is referred to the original article. Three cases of bleeding during pregnancy were checked, and the drug showed no tendency to produce abortion.

The author considers it the best means we have of controlling hemorrhage from the uterus. Its good results show themselves only after prolonged use, hence it is of no avail in acute hemorrhages. The cause of the bleeding must be clearly made out first before the drug can be intelligently used. If used in proper cases it will often render curetting unnecessary.

ELECTRICITY IN THE TREATMENT OF MYOMATA.

The question of the value of electricity in the treatment of myomata of the uterus is again discussed in a paper by A. Martin and Mackenrodt,[7] of Berlin. As material on which to base their conclusions, the authors have made use both of the cases which have come to them originally for treatment and in which the Apostoli method was employed, and also those where electricity had been used elsewhere, and owing to farther trouble had sought relief. In all, there were sixty-six cases, of which thirty-six were treated in the hospital; sixteen who had been treated elsewhere came for operation, and fourteen came for advice and occasional observation, but not for treatment. The last cases were rightly included as they gave valuable indications as to the final results. All were treated strictly according to Apostoli.

Of the thirty-six patients treated originally at the hospital, twenty were suffering from myomata of small size, and in all these a symptomatic improvement was noticeable as regards hemorrhage, pain and the general condition in the first-half year. In no case was there either a disappearance of the tumor, or an undoubted lessening in size. Of the twenty, eight were over forty-five years of age, and the coming on of the menopause contributed to the good result. Of the remaining twelve, the majority showed later a return of the flowing and pain, and were treated preferably in other ways.

The second class of cases, of which there were sixteen, so far from showing improvement, were on the contrary made worse, and three died.

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[4] Cent. für Gyn., January 10, 1891.

[5] American Journal of Obstetrics, March, 1892.

[6] Berl. Klin. Woch., January 18, 1892.

[7] Deutsche. Med. Woch., January 14, 1892.

By a comparison of these results with those of other operators who look with favor on this method of treatment, it is seen that while the proportion of those made worse is less with them, yet in no case has the tumor disappeared, and the improvement has been lasting only when the patients are treated near the time of, or after, the menopause. The authors, therefore, consider electro-therapy as merely one of the various palliative measures for the treatment of these cases, and when the bad results and deaths are taken into consideration as a decidedly dangerous one.

Looking the whole subject over in the light of these cases treated by electricity, and of three hundred and fifty-six cases of myomata which have come to operation in Martin's clinic, the writers come to the following conclusions:

They regard the electrical treatment of myomata as an inappropriate procedure, which causes the patient pain and loss of time, results in symptomatic improvement in only a third of the cases, and makes the patient's condition worse in more than a third; they, therefore, advise against its employment.

In the case of fibroids which cause none or only slight symptoms, they employ no local treatment. If serious disturbances occur they advise operation, the character of the operation depending upon the nature of the case.

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, February 13, 1892.

Dr. F. E. Cheney read, by invitation, a paper on

PURULENT OPHTHALMIA NEONATORUM AS A CAUSE OF BLINDNESS.[1]

Dr. C. E. Stedman said he had seen no case of ophthalmia for a long time until last summer, when he had a severe case which for a long time resisted treatment. He was particularly surprised at the occurrence of this case, for the most careful antiseptic precautions had been taken and the trained nurse was one of the best.

Dr. McCollom said that he had had a few cases of ophthalmia neonatorum at the Chardon Street Home, and he had used nitrate of silver and zinc in the treatment, but he considered frequent washing and strict cleanliness to be the most important measure.

Dr. Wm. Ingalls, out of a large number of obstetrical cases seen in private practice, had had but two or three cases of ophthalmia, and they had all recovered. He believed that his freedom from this trouble was due to the fact that he always made a practice of wiping the babies' eyes immediately the head was delivered.

Dr. A. D. Sinclair had had but one case of ophthalmia neonatorum where the eye was lost, and that was in a wretched case in Edinburgh where the treatment of cleanliness was not properly carried out. He felt sure, however, that he would have lost other cases if he had not always insisted on very frequent washing of the affected eyes.

Dr. Withington referred to an instructive case of ophthalmia which occurred in his practice a year ago, and the only case he had had. The patient was first seen three days before delivery, and a pessary that had been worn nineteen months was removed from the vagina. Frequent antiseptic douches were given to combat the resulting vaginitis, but even with the greatest care the child had a violent conjunctivitis which lasted a month but left no injury. He treated the case with water and with a solution of alum.

Dr. Gavin said that most physicians were not provided with a retractor for the eyelids such as the reader referred to, and he had found that one could easily be extemporized from a hair-pin bent at right angles. In the few cases of ophthalmia that had occurred in his practice he had used alum in the strength of ten or fifteen grains to the ounce.

Dr. Clement spoke of three cases that he had seen, which made good recoveries. The treatment consisted of frequent cleansing and the use of a bichloride of mercury solution in the strength of 1–5000, which seemed to do more good than anything else.

Dr. Dunbar saw a case a year ago, the cause of which he was at a loss to discover, until he found that another practitioner was treating the father for gonorrhœa.

Dr. Gerry referred to two cases of ophthalmia, the first of which was of a severe nature, no doubt of gonorrhœal origin. The mother had cystitis and the father had a persistent rheumatism of a gonorrhœal character, although the latter disease was denied by the man. He succeeded in saving the eyes, using a weak solution of corrosive sublimate and also a solution of nitrate of silver which accomplished what the corrosive solution did not. In the second case, of mild nature, the mother an intelligent woman and a reader of "Babyhood," evidently thought that he had done wrong in not washing out the vagina before labor.

Dr. J. Stedman insisted on the importance of wiping the eyes with a clean napkin as soon as the head is delivered.

Dr. C. W. Townsend said that the reader had suggested the advisability of the routine use of nitrate of silver after delivery in the clinic of the out-patient department of the Lying-in Hospital. Nearly a thousand cases were attended during the last year, counting in the two hundred in the obstetrical department of the Boston Dispensary. Out of those, although nitrate of silver is not used at birth, but very few cases of ophthalmia are seen, and these, as a rule, respond readily to treatment by washing with water and the use of nitrate of silver, and he could not recall a single case where the eyes had been lost. Under these circumstances he questioned very much whether it would be advisable to use nitrate of silver as a routine practice at birth, especially as the ignorant mothers would object and would attribute any conjunctivitis due to the introduction of dirt to this treatment. In the hospital, before the days of antisepsis, ophthalmia was very common. The routine use of nitrate of silver at birth almost did away with the trouble, but it was found that with antisepsis during labor and careful washing of the eyes at birth, as good results could be obtained.

Dr. Edward Reynolds would object to the use of nitrate of silver in every case, for he believed that the slight serous discharge occasioned by it would cause much anxiety to the parents.

Dr. G. J. Blake had formerly seen a good many cases of ophthalmia in the hands of the midwives. Frequent washing and the use of nitrate of silver had been his treatment. He remembered the objection of a prominent occulist that the solution might stain the tissues.

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[1] See page 362 of the Journal.

Dr. Cheney, in closing, said that undoubtedly cases could be cured without the use of nitrate of silver, although he believed that this treatment was the most successful. The disease had, as in a case spoken of by Dr. Green, developed as late as the eighth day, although contracted at birth.

Dr. C. P. Strong reported

CASES OF LAPAROTOMY PRESENTING FEATURES OF UNUSUAL INTEREST.[2]

Dr. Davenport said that he considered the question of the advisability of the removal of the appendages for symptoms alone as the most important one suggested by the paper. While it is true that a reaction has set in against the indiscriminate operating of a few years ago, yet the best surgeons would probably not refuse to operate in certain cases, even though no appreciable pathological change were present. His own opinion was that, where severe symptoms were present, which were either connected with the pelvic organs or were associated with the menstrual epoch, and other appropriate measures had been tried for their relief without success, that then an exploratory incision was justified. This was the more so, since the most careful examination in competent hands, under ether, may fail to recognize the existing conditions.

In the few cases which he had operated on for symptoms, he could not say that any had been made worse. One or two cases, however, had not improved, but in this way, that though the particular symptoms for which the laparotomy was performed, were relieved, yet other perhaps quite as troublesome ones took their place. One case of persistent menorrhagia with intense pain, which had resisted all treatment for years, was relieved of the flowing, but now suffers from constant pain below the scar, in the bladder and rectum, and cannot do any more work than she could before. He does not consider it justifiable to operate where the symptoms are those of neurasthenia, without special reference to the pelvic organs; but, under the conditions described above, it is the surgeon's duty to give the patient the chance of an operation.

Dr. F. B. Harrington believed that certain carefully selected neurasthenic cases could be relieved by ovariotomy. There are other neurasthenic cases, however, where this operation would be of no value, for if a local trouble is relieved at one point, it is sure to recur at another. As an illustration of the sort of cases that could be relieved, he referred to one who had been bed-ridden for three or four years. The tubes and ovaries were removed, and the patient is now well and about. The tubes were found dark and congested, and the ovaries contained some cysts.

Dr. G. W. Gay said: One of the early subjects of this operation has been a patient of mine for many years. She is highly neurotic, so much so, that a neuralgia in some part of her body has come to be her natural condition. The removal of the left ovary had not the least effect upon the pain, from which she had suffered for years, and from which she continued to suffer for about three years after the operation. This patient, like many other neurotics, gets along much more comfortably without medicine and medical treatment, than she ever did with them, for the reason, I presume, that her attention is not so constantly directed to herself.

Several cases of öophorectomy for neuralgia have come to my personal knowledge, in which no relief followed the operation. Under these circumstances it is fair to conclude, that the cause of the pain was not local in its character, but had to do with the general nervous system. Too often pain, distress and all sorts of suffering seem to be the fate of these unfortunate women, however they may be treated.

I have not yet arrived at such a stage of development, as to have no respect for the peritoneum. Such a doctrine is hardly safe for the youngest members of the profession, despite the fact that a few surgeons have done scores of laparotomies without a fatality. The operation in the hands of most surgeons is not free from danger.

For these two reasons then, unless some organic change could be detected, I should hesitate a long time before removing the ovaries for simple neuralgia.

Dr. Bowles agreed with Dr. Harrington that ovariotomy should not be performed in some cases of neurasthenia as nothing was accomplished, although in others carefully selected it was of value. In one case he had seen from time to time, the ovaries had been removed, but the neurasthenic symptoms remained as bad as ever. She was a uterine crank.

In another case he was asked as to the advisability of doing an operation. He was unable to find any disease on examination, which was followed by an hysterical attack of pain and fever, and he declined to operate. She was taken to a hospital for neurasthenics which took fire and she has been better ever since.

Another case where there had been much pain and a small tumor was found, he had operated on a few days ago and removed a small dermoid cyst. A good many years ago while making autopsies he was surprised at the frequency of small cysts of the ovary or fimbriated extremity of the tubes, perhaps as many as one in five, where there had been no symptoms, the patient being under observation at the City Hospital. They may therefore exist without causing any harm, and they should only be removed when there were symptoms referable to them.

Dr. G. Haven spoke of two cases where ovariotomy gave relief from severe neurasthenic symptoms. The first case had had severe pain at each menstrual period keeping her in bed most of the time. She had been treated in institutions and outside without any relief. As a last resort he performed ovariotomy two years ago, finding only a small cyst in one ovary. She made a good convalescence, has been much relieved and able to do a certain amount of work. The second case had been suffering much pain for seven years, spent a good part of the time in bed and at various institutions, treatment being of no avail. A short time ago he removed the tubes and ovaries, which were reported to be slightly thickened and œdematous by Dr. Mallory. Since then she has felt and slept much better and three or four days ago walked half a mile.

Dr. C. P. Strong, in conclusion, said, he did not wish to be understood to be an advocate of ovariotomy except in carefully chosen cases. Of a very large number of cases seen in his hospital services, in only a small proportion would this operation be thought of and in those only after thorough treatment for a year by galvanism, etc. If after that time there is no improvement it seems to be our duty to consider the operation especially in the case of those who work and cannot afford to lie idle. He would advocate conservatism first and then be prepared to do something rather than to fold our hands and do nothing.

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[2] See page 359 of the Journal.

Dr. E. J. Forster showed a hair-pin which a patient had introduced into the uterus for purposes of abortion. He had introduced a sponge tent to dilate the cervix in order to remove the pin, and on taking out the tent, the hair-pin shot out onto the floor. It had been there four weeks.

Dr. F. H. Davenport showed some pus tubes he had removed that morning. The patient was first seen a year ago and the probable diagnosis of purulent salpingitis made at that time. She refused operation and gained twenty-three pounds under treatment. Lately she began to have pain with an increase in size of the tubes and an escape of pus into the peritoneal cavity and he operated at once.

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NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, March 21, 1892.

The President, **Dr. S. B. W. McLeod**, in the Chair.

Dr. J. Lewis Smith read a paper on

RECENT INVESTIGATIONS RELATING TO THE PREVENTION OF DIPHTHERIA AND SCARLET FEVER.

The germ of scarlet fever, he said, though its precise character had not as yet been demonstrated, surpassed that of every other disease with the exception of smallpox in its tenacity to objects, its portability and its activity and virulence. Having given instances illustrating these points, he said that in cities, there was reason to believe that the contagion was often conveyed by means of books which children, ill with scarlet fever, handled. The most recent investigations tended to show that the disease was controlled, and its spread prevented in a marked degree by the frequent antiseptic treatment of the fauces from the commencement of the attack. The secretions from the faucial surface and the faucial surface itself contained numerous microbes, of which the streptococcus was far the most abundant, and was presumably an active agent in producing the inflammation. This streptococcus, as Professor Hutinal, of Paris, had claimed, was apparently identical with that which occurs in suppuration processes, the Rosenbach pyogenic streptococcus. Since these dangerous microbes were located primarily upon the faucial, nasal and post-nasal surfaces, the early and repeated use of germicidal applications was now considered of the first importance, and this consideration undoubtedly enlarged the scope of prophylaxis.

As regards diphtheria, it was now almost universally acknowledged that the Klebs-Loeffler bacillus was the specific gum of the disease, and Brieger and Fraenkel had demonstrated in diphtheria a virulent toxine which was believed to be elaborated by this microbe, which recent investigations had shown to be of itself comparatively innocuous. These observers also showed that slight variations in the chemical composition of the toxine named destroyed its virulence. It was true that the fact, that sometimes on the mucous membranes of perfectly healthy individuals a benign bacillus was discovered which as regards appearance and behavior was not distinguishable from the Klebs-Loeffler bacillus, tended to militate against the efficiency of the latter in the production of diphtheria; but this was now explained by the hypothesis that the benign bacillus in question was simply the Klebs-Loeffler bacillus deprived of its virulence. As confirming this supposition, it might be mentioned that the benign bacillus was sometimes found in those who had recently recovered from diphtheria. While scarlatina and other diseases were capable of producing pseudo-membranous exudations, Dr. Smith believed that no case should be designated as true diphtheria unless it was produced from the Klebs-Loeffler bacillus.

Certain French authors, however, had pointed out that, while the phenomena observed in diphtheria were mainly attributable to the poison elaborated by the Klebs-Loeffler bacillus, we should not forget that other morbific agents were also concerned in their production, such as the streptococcus and the staphylococcus, which were often found in internal organs where the former did not exist.

Having related instances to show the extreme contagiousness of diphtheria and the tenacity of its germs, Dr. Smith alluded to the fact that damp, foul places such as sewers either have the power to propagate the Klebs-Loeffler bacillus or by means of the emanations from them to convert the benign bacillus mentioned into the latter. In this way, was no doubt to be explained the constant prevalence of diphtheria in large cities like New York where, notwithstanding all precautions, people were often exposed to the contamination of sewer gas. Another mode of communicating diphtheria was by means of walking cases. The disease was often so mild in character as to escape notice, and thus children in schools, in city conveyances, in churches and in dispensaries were exposed to the contagion. Diphtheria had also been known to be communicated by milk and frequently through the agency of domestic animals, especially the cat.

Although much had been learned concerning the prevention of this disease, it was still the cause of a heavy mortality in all civilized countries. How much could be accomplished by intelligent prophylaxis, however, was shown by the wonderful results obtained by Grancher, who succeeded in preventing a large number of children, who were sent to diphtheria hospital wards under a mistaken diagnosis, from contracting the disease. Out of one hundred and fifty-three such instances not a single case of diphtheria occurred. Grancher's method of preventing the spread of diphtheria included a metallic screen placed about the patient's bed, the wearing of blouses by all nurses and orderlies, the washing of all napkins, spoons, and other articles used by the patients in a solution of one ounce of bicarbonate of sodium to the pint of water, the daily disinfection of the nurses' blouses, and the repeated washing of the nurses' persons in solutions of corrosive sublimate or carbolic acid. The success attending these prophylactic measures justified the belief that it is possible in almost every instance to limit each attack of diphtheria or scarlet fever to one or two cases. Dr. Smith advised that the physician, before entering the sick room, should take off his coat and waistcoat, and put on a blouse or envelope himself in a sheet. Most medical men, he said, in examining the fauces sat in front of the patient, and thus when coughing was excited they were exceedingly likely to receive infectious matter upon their persons. Repeated instances had been reported in which the disease was conveyed in this way. In order to avoid this, he should sit beside or behind the patient. Another excellent way was to make the examination through a pane of clear glass. Upon leaving the sick room, he should wash his face, head and hands in a solution of corrosive sublimate or other antiseptic. All articles not actually required for the comfort of the patient should be removed from the room as soon as the diagnosis was made.

In regard to other children in the family, Dr. Smith said that he had formerly contented himself with sending them away. But this was not enough. Their entire persons should be bathed in bichloride solution, and a complete change of clothing made. Every three hours for a week their mouths and fauces should be washed with a solution of peroxide of hydrogen. It was also advised that after seeing a case of diphtheria or scarlet fever the physician should not visit another child for at least one or two hours. The Health Board of New York was to be commended for the excellent work it had accomplished in the last five years. Smallpox, which was formerly quite prevalent, had been practically stamped out: and it was no doubt true that the other infectious diseases were much less prevalent than they would be but for the precautions enforced. It was probable, however, that scarlet fever and diphtheria would never be entirely suppressed. The conditions of tenement-house life were such as to constantly perpetuate infection, and notwithstanding all that had been accomplished, it was a common thing for the brothers and sisters of children ill with diphtheria to attend the public schools. At the meeting of the American Pediatric Association, in 1890, Dr. Auguste Caillé had proposed very wisely that each schoolhouse should be provided with a sanitary inspector, one of whose duties it should be to examine daily (without using a tongue-depressor), the throat of every child when it came to school in the morning. In case of any trouble being found the child could be at once sent home, with a note addressed to the parents stating that it was sick, and that the family, or dispensary doctor should be at once communicated with. The late Dr. Wm. Budd, of England, stated in the *British Medical Journal*, in 1869, that he had never known scarlet fever to extend beyond the house where a case occurred. The means he used for preventing the spread of the disease were, (1) separation, and (2) disinfection.

Dr. Smith said it was his practice to have the bedstead, floors, etc., of the sick room washed every day with bichloride solution, and also to use the following disinfectant: one ounce each of oil of eucalyptus and carbolic acid were mixed with eight ounces of turpentine and of this two tablespoonfuls mixed with a quart of water were allowed to simmer continually near the sick child. The vapor thus produced, while strong and pungent, was not unpleasant, and he believed that it had a decidedly prophylactic effect. Mr. Charles Smith, now of Australia, employed a similar, though rather stronger solution, with which he saturated cloths which were placed on paper on the bed, and he stated that since he had adopted this plan he had never seen paralysis follow a case of diphtheria. This corresponded also with his own experience in cases in which the disinfection mentioned was resorted to. In scarlatina, the skin should be anointed every three hours, until desquamation was completed, with a mixture consisting of one drachm each of oil of eucalyptus and carbolic acid dissolved in seven ounces of sweet oil. As a spray in both scarlet fever and diphtheria peroxide of hydrogen had a decided prophylactic effect. It should be used in the strength of one part to two or three of water for the fauces, and of one part to six for the nostrils. Of course, the most careful disinfection of the bedding and all utensils used was called for.

Dr. Smith did not believe that sulphur fumigations after a case of infectious disease were of much value, though he thought that Dr. Squibb was right in stating that they were rendered much more efficient when moisture was secured by burning the sulphur over water. A more effective plan, in his opinion, was to wash the bedstead and floor with bichloride solution, and to paint or whitewash the floors and ceiling.

Dr. C. A. Leale considered that diphtheria was the most terrible scourge with which the medical profession had to deal, and that its prevention in large cities was attended with the most serious difficulties. The conditions existing in our tenement-houses were such as to render them almost insuperable, and while the Board of Health was doing all that it could in the circumstances, the constantly increasing tide of immigration from Europe continually tended to increase the obstacles to be contended against. With larger appropriations, and entire freedom from political influences, however, he believed that the Board could accomplish much more than it had as yet been able to do. In the early stages of diphtheritic infection he believed that the use of fruit acids, especially lemon juice, and of the mineral acids, are exceedingly useful in preventing serious trouble. He did not agree with Dr. Smith in regard to sulphur fumigations, but believed that sulphurous acid when combined with moisture was a most efficient disinfectant.

Dr. Heplich advocated the establishments by the Board of Health of hospitals, to which the children of the poor when suffering from diphtheria or scarlet fever should be taken, even against the will of the parents. This seemed to him the only efficient way of controlling these diseases, and he hoped that in time the public would be educated up to this idea.

Recent Literature.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., Professor of Medicine in Johns Hopkins University, etc. New York: D. Appleton & Co. 1892.

This volume exhibits originality at the very beginning, inasmuch as there is no preface. The author does not take us into his confidence as to his motive for adding another book on the "Principles and Practice of Medicine" to those which have preceded his. He does not tell us whether it is because there were too many good ones or too many bad ones; whether the publisher tempted him, or his University demanded it; or whether it was simply that he had noticed that "they all do it." He skips into the public presence without a word, but with a sort of air which suggests: Here I am! Take me, or leave me, but you had better do the former! He had probably heard that good wine needs no bush; and as he has written a good book, with an excellent dedication and some sound aphorisms from the Greek on the first sheet, it mattered less about his motives. At any rate, after the table of contents and a list of charts and illustrations, we find ourselves plunging immediately into typhoid fever, which heads Section I, (on "Specific Infectious Diseases,") of this royal octavo volume of 1,080 pages. No preliminaries are devoted to such abstract subjects as nosology, symptomatology, ætiology, inflammation, fever, etc. In this respect Osler's book resembles Strümpell's.

This first section of specific infectious diseases has thirty sub-headings, and embraces more than a quarter of the book. It is in the title of the section and in dealing with the description of the diseases included under this section that the work of the bacteriologist and the changes of the last ten years become apparent. It is, perhaps, needless to say that in this important department this book exhibits discreet judgment and an acquaintance with the subject well up to date.

The second section is on constitutional diseases; there are twelve sub-headings, the most important of which are rheumatism, gout and diabetes. Then follow the usual sections based upon an anatomical classification — diseases of the digestive, respiratory and circulatory systems; of the blood, of the kidneys, of the muscles. Then comes a polymorphous section devoted to the intoxications, sunstroke and obesity; and lastly a section covering diseases due to animal parasites.

The sections on specific infectious diseases and on diseases of the nervous system are the most considerable of the book, making up together about one-half of its contents, and, considering the intrinsic importance of the subjects as well as the advances made in them in recent years, this is as it should be. The comparatively short section on diseases of the blood and ductless glands is concise but thorough, and, though most of the charts inserted through the volume are clear and distinct, the blood charts seem to us particularly pleasing and graphic. In the treatment of essential anæmia the author relies greatly upon rest in bed.

With the limited space and time at our disposal, we cannot undertake to call attention to all that is good or to affirm that there is nothing which might not be better in Dr. Osler's book. His attitude in regard to a few important and debated points may be noted. For the treatment of typhoid fever he is a very temperate advocate of the Brand method for institutions, though personally sympathizing with those who designate it as entirely barbarous. The employment of medicinal antipyretics he abandoned some years ago; the choice for him, if they are used, lies between antifebrin and antipyrine, with a preference for the former; nothing is said of phenacetine, which he apparently regards simply as an analgesic.

The quotation from Hirsch, "Die Geschichte des Typhus ist die des menschlichen Elends," introduced by the author as tersely stating the etiology of typhus fever, should be before the eyes of our immigration commissioners and quarantine and sanitary officials at the present time.

Dr. Osler admits at once the existence and the rarity of pulmonary syphilis. In the treatment of secondary syphilis the use of gray powder with Dover's powder by the mouth, is, we are glad to note, warmly endorsed. In regard to the question of syphilis and marriage, he thinks the family physician should insist upon the necessity of two full years elapsing between the date of infection and the contracting of marriage, and there should be at least one year of complete immunity from all manifestations of the disease. He is an advocate of licensing, but to the unmarried man he recommends continence in alluring terms.

Dr. Osler's remarks upon the tuberculin treatment are moderate and judicious. He points out that we are at present in the reaction wave, and that it will probably be several years before we can speak with decision upon the true position of this remedy. The importance of bacteriological examinations in suspected tuberculosis and suspected malaria is strongly insisted upon.

Cases of leprosy, our author states, should be isolated, although the risk of catching the disease is "extremely slight." We are glad to notice that credit is given Beavan Rake for studies in this disease carried out at the hospital in Trinidad.

The pages on perityphlitis and appendicitis give the latest conclusions as to the pathology and management of these perplexing cases.

The pages upon malignant endocarditis reflect the author's Gulstonian lecture, and are, of course, excellent.

Our author seems somewhat sceptical, or at least open to further proof, as to the causation of arsenical poisoning by absorption from wall-papers and fabrics.

The style in which Dr. Osler's book is written is clear, concise and at the same time animated. The type is very good. The finish of the paper is excellent, but the texture is not strong, and we doubt whether it stands well the strain of the eager student who will certainly want to use it often and much, or the inadvertence of the busy practitioner who will sometimes consult it hastily. The book has evidently been "trained down" as much as possible to secure handiness without sacrificing even more important essentials.

We should be glad to be able to think and speak as highly of every medical book presented for review, as we can of this. In truth, had our enemy written it, we should be unable to find much consolation in his commitment.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P., Edin.; F.R.S., Edin. Assistant Physician to the Edinburgh Royal Infirmary, etc., Vol. I, Parts I, II and III. Edinburgh: Printed by T. & A. Constable, at the University Press. 1891.

We justly reproach ourselves with so tardy a notice of this superb Edinburgh publication, though the delay enables us to form our judgment upon more than one fasciculus and to assure ourselves that the promise of the first part has so far been steadily realized.

As the announcement suggests, the work might, perhaps, be better styled "An Illustrated Treatise on Clinical and Systematic Medicine." The letter-press is worthy of the plates, beautiful and accurate as they are, and Dr. Bryom Bramwell's name is a guarantee of accurate, discriminating and intelligent work in the word-description which supplements the illustration of the artist and the photographer.

The plates are for the most part original, and copies of the water-color paintings and photographs in the possession of the author; they are colored, black and white, and photogravure plates, measuring 14½ by 10½ inches. The original paintings have been drawn from life under the supervision of the author.

The first and second fasciculi contain 48, and the third 44 folio pages. Each fasciculus is announced to contain at least 32 folio pages. Each annual volume will contain four fasciculi and about 30 plates. It is expected to complete the work in three annual volumes containing 90 plates. A volume will not be broken, but subscriptions may be made to single volumes. The price of the first volume to original subscribers is £1, 11s. 6d.

The first fasciculus is taken up with myxœdema, sporadic cretinism, and Friedreich's ataxia. The first two subjects are especially interesting at the present time in connection with the experiments which are being made with transplantation of the thyroid gland.

Among the illustrations of Friedreich's ataxia we notice a reproduction of the striking case described by the late Dr. Everett Smith in these columns.

A very beautiful plate showing a typical case of lymphadenoma and one of melancholia with fear finish the first fasciculus.

The plates of the second part are on Addison's Disease and Hodgkin's Disease, with supplementary plates of molluscum fibrosum, xeroderma pigmentosum and mania. The plates of the third part exhibit progressive unilateral atrophy of the face, chronic progressive bulbar paralysis, ophthalmophlegia externa, and additional plates on molluscum fibrosum and xeroderma pigmentosum.

We regret to learn that the recent epidemic of influenza selected the author as a victim, and hence a slight but unavoidable delay occurs in the issue of Parts III and IV. We sympathize with such a visitation and must plead the same excuse for our own shortcomings. We must, however, remind the author that he is to blame if we are impatient for more.

The press-work of these pages does credit even to the house of Constable.

Ninth Biennial Report of the State Board of Health of Maryland, for the two years ending, December 31, 1891. Pp. 381. Annapolis, 1892.

This Report of the operations of the State Board of Health of Maryland is conveniently divided into chapters upon the following subjects: (1) Introductory; (2) Review of the Operations of the Board; (3) Quarterly and Special Reports; (4) Correspondence; (5) Life History of the State and Special Diseases; (6) Adulteration of Food; (7) Mortality and Vital Statistics.

During the past two years the Board has accomplished much valuable sanitary work, under the direction of its efficient Secretary, Dr. Chancellor. Several thousand circulars upon sanitary subjects have been distributed. Attention was called to the need of a properly equipped hygienic laboratory. Good work has been done in the line of food inspection. A special report follows upon the pollution of Lake Roland and upon certain sources of water-supply, notably that of Cumberland, where 587 cases of typhoid (or as it is termed in the Report, entero-miasmatic) fever occurred with 52 deaths.

In the chapter upon the Life History of the State, many valuable suggestions are presented as to the management and control of infectious diseases; but the paragraphs upon alcoholism might as well have been omitted, since the oft-quoted and fallacious statistics of the inquiry of the British Medical Association have already been shown to have no bearing whatever upon the subject. Notwithstanding the fallacy of the statement that "hard drinkers and drunkards have an average life of 52 years and 14 days, and total abstainers 51 years and 80 days," every trade journal devoted to the liquor interest in England and America had appropriated the statement for its own ends. And yet Dr. Owen, the author and compiler of these remarkable statistics, virtually retracted them at the recent Congress of Hygiene at London in these words: "I have been misquoted frequently, and have never arrived at the conclusion, indicated by the figures, that the total abstainer's life was a worse one than the chronic drunkard's."

Insomnia and its Therapeutics. By A. W. MacFarlane, M.D., F.R.C.P.E., etc. 8vo, pp. v, 298. New York: Wm. Wood & Co. 1891.

The work before us can hardly be called satisfactory. In his effort to be comprehensive the author has included almost every affection in which insomnia may be a symptom, apparently forgetful of the famous advice of the judge to the young lawyer, that this court may be expected to know a little something. Few, even among the laity, need to be reminded that the flea or the mosquito can produce insomnia, nor is insomnia usually the distressing symptom in acute cystitis. The result is that the author has written what is practically a treatise on general medicine, and, although there is a good deal that is suggestive in the work, neither his pathology nor his therapeutics can be considered as up to date. We find frequent mention of cerebral hyperæmia and plethora, for example. In his therapeutics the author is an advocate of hypnotics, and in many respects his advice is hardly sound. One half the cases of functional insomnia are due, he believes, to an inherent instability in the cerebral textures, and, in 273 cases, he finds the chief causes to be neurasthenia, worry, gout, overwork, menopause, dyspepsia, alcoholism and senility.

Pulmonary Consumption a Nervous Disease. By Thomas J. Mays, M.D. Detroit: George S. Davis. 1891.

From a consideration of the published cases in which phthisis and vagus disease coexisted, Dr. Mays has arrived at the conclusion that pulmonary consumption is a neurosis in which the vagi are primarily involved. Among other conclusions which he has drawn may be mentioned that "there is no testimony whatever to show that infection occurs through houses or food" and "that diabetes, beri-beri, leprosy and probably lupus and pellagra, are intimately associated with pulmonary consumption, because fundamentally the evidence appears to show that they are nervous diseases." We fear that to the average reader the evidence and reasoning on which these results are based will not seem absolutely satisfying, and doubt will arise if some cases of phthisis do not exist which are due to other than nervous causes. The therapeutics based on such a pathology do not seem to differ greatly from those advocated by eminent men who still fatuously cling to a belief in the bacillary theory.

Nursing in Abdominal Surgery, and Diseases of Women. By Anna M. Fullerton, M.D. Philadelphia: P. Blakiston, Son & Co. 1891.

This book contains the lectures delivered to the pupils of the training-school for nurses connected with the Woman's Hospital of Philadelphia. It supplies not only what is too often looked upon as the only knowledge necessary for a nurse, the actual care of the patient, but also in addition such facts as will enable the nurse to be an intelligent and competent assistant to the surgeon. Some of these are preparation of room, sterilization of instruments, anæsthesia, names and uses of instruments, etc. In fact, many of these directions might be very profitably studied by the average medical student.

The book ought to be a useful one, and seems well adapted for its purpose.

Principles of Surgery. By Nicholas Senn, M.D., Ph.D., Professor of the Principles of Surgical Pathology in the Rush Medical College, Chicago, Ill., etc. Philadelphia: F. A. Davis. 1891.

A captious critic might be inclined to question the accuracy of the title of this book, for it deals more with the principles of surgical pathology, as pathology is generally understood. It is a most satisfactory work. Dr. Senn's indefatigable labors in the field of experimental surgery have entitled his work to most careful attention; and this book, treating as it does of the fundamental principles of modern surgery, is of great interest.

Dr. Senn discusses at length the processes of inflammation, of necrosis, of suppuration, septicæmia, pyæmia, erysipelas, tetanus, hydrophobia, surgical tuberculosis of the various organs, actinomycosis hominis, anthrax and glanders. Each is considered in a very complete manner; full attention being paid, not alone to the pathology, but to the etiology, symptoms, diagnosis, prognosis and treatment. His description of tetanus is a masterpiece; and while the book will not be attractive to the general practitioner who simply desires therapeutic points, to the thinking surgeon the book is indispensable.

The reader here finds subjects presented in new lights; and occasionally one is inclined to question the truth of the deductions, yet, in this element lies a great value. It is full of thought and experimental research, and is an addition to any library. The print is too small to be read easily, and the binding is defective.

Surgical Diseases of the Ovaries and Fallopian Tubes, including Tubal Pregnancy. By J. Bland Sutton, F.R.C.S. With 119 engravings, and five colored plates. Philadelphia: Lea Brothers & Co.

It is a pleasure to review a book of this character; first, because of the great and growing importance of the subject at the present time; and, second, on account of the admirable way in which the subject is treated. There is no book which so clearly presents the pathology of the branch of gynecology, nor any which combines so happily original research, and a just estimate of the work of others.

It is divided into four parts: (1) Diseases of the ovaries; (2) Diseases of the Fallopian tubes; (3) Tubal pregnancy; (4) Methods of performing operations for ovarian and tubal disease.

The greater part of the book is occupied with the pathology of the subject, only the last fifty odd pages being devoted to the methods of operating. This is fortunate, for our knowledge of the methods of origin and growth of ovarian tumors, the changes which occur in the mucous membrane of the Fallopian tube as a result of disease, and the causes of tubal pregnancy lags far behind our knowledge of how to treat these conditions. This work is therefore a very welcome addition to the literature of this subject.

The illustrations, most of which are original, add much to the elucidation of the text.

A Treatise on Bright's Disease of the Kidneys: Its Pathology, Diagnosis and Treatment; with Chapters on the Anatomy of the Kidney, Albuminuria and the Urinary Secretion. By Henry B. Millard, M.A., M.D., etc. With numerous original illustrations. Third edition, revised and enlarged. New York: William Wood & Co. 1892.

There are a number of important changes in this new edition of Dr. Millard's well-known book. The author has re-written the chapter on Tests for Albumen in the Urine. He still considers his own test, that with phenic-acetic acid and potash, the most delicate, certain and practical, especially for albumina minima. The other re-agents considered by him, are: nitric acid, heat, the nitric-magnesian test (Roberts), and Tanret's with the double iodide of mercury and potash.

New matter has been added upon the albuminuria of pregnancy, the ocular lesions and mental disturbances attendant upon Bright's disease, the use of anæsthetics in nephritis, curability, the dietary, the use of mineral waters, and the treatment.

The author has renounced his former opinions and conclusions recognizing the existence of "physiological" or "normal" albuminuria. A revision of the material upon which his previous position was based, in addition to the consideration of extremely careful and accurate experiments made by Lecorché and Talamon, has led him to the present conclusion that albumen, when secreted by the kidneys, can never be surely predicted to exist in health; that it is never physiological but always pathological and dependent upon histological changes in the kidneys.

The Mediterranean Shores of America—Southern California: Its Climatic, Physical, and Meteorological Conditions. By P. C. Remondino, M.D., etc. Fully illustrated. Philadelphia and London: The F. A. Davis Co. 1892.

The author writes from San Diego, but seems to write impartially of the whole of Southern California, without any attempt to promote any particular locality. He considers the nice adjustment between temperature and relative humidity — the humidity diminishing as the temperature increases and *vice versa* — to be, at once, the distinguishing peculiarity of the region of which he writes, and the key to its beneficial effects. There is, we believe, much truth in this statement.

The author divides the climates of Southern California into six distinct classes, all having a therapeutic value and application, as follows: (1) A purely insular climate; (2) a peninsular climate; (3) a coast climate; (4) a foot-hill and valley climate, 200 to 2,500 feet elevation; (5) a mountain climate, 2,500 to 9,000 feet elevation; (6) a desert climate, from 360 feet below sea level to 2,500 feet elevation.

This book will be found of interest and of service to those who advise others about climates, or to those thinking of going themselves to Southern California.

The Mayor of Barfleur (France) has forbidden the wearing of low-neck dresses by the women of the commune, as being prejudicial to peace and social morality.

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RECENT RESEARCHES ON BILIARY INFECTIONS.

The bacteriology of biliary infections has been but recently studied.

Netter[1] claims priority in investigations of this kind, he found various benign and pathological microbes in morbid states of the bile and bile-passages. Naunyn and Duclaux, Vignal, Gilbert and especially Ernest Dupré have still more recently done good work in this department of experimental inquiry.

Normally, like pancreatic juice and freshly voided urine, the bile is aseptic. Though the common bile-duct opens into a cavity which is itself markedly septic (the duodenum), the bile-ducts, like the bile, are normally free from microbes. Only the entrance of the excretory canal is infected; the mucus and epithelium lining the ducts do not constitute a good culture field for germs, and bile is itself toxic to microbes.

In certain diseased conditions, the opposing barrier is broken, and microbes of various kinds, the staphylococci, the streptococcus pyogenes, the bacterium coli, the typhoid bacillus, or the bacillus tuberculosis may penetrate the biliary passages and the hepatic parenchyma from the duodenum, and produce an infectious icterus of mild or grave nature, according to the kind of resistance offered by the organism and the quality of the infectious agent.

The liver may become infected in four different ways: (1) through the peripheral lymphatics (but this is a rare event); (2) through branches of the vena portæ which may bring pathogenic germs from the intestine as occurs in the abscesses of dysentery; (3) by the hepatic artery, as when, in the course of general septicæmia, the microbes of suppuration are conveyed in the arterial blood to the parenchyma of the liver, constituting the miliary abscesses and metastatic purulent collections of pyæmia; lastly, by the bile-ducts, and this infection may come about by two orders of lesions, mechanical and septic.

Nowhere have we found so complete and so clear an account of these infections as in the lately published treatise of Ernest Dupré.[2]

The mechanical lesions of obstruction causing infection are foreign bodies, calculi, compression of the bile-ducts by tumors, extrinsic or intrinsic, etc. The septic lesions are inflammatory, catarrhal, or suppurative, and constitute the angiocholites.

In infections secondary to mechanical lesions, the obstruction produces stagnation, then alteration of the bile, which becomes thick (like mud), and mal-nutrition and degeneration of the protective epithelium of the ducts; the medium is favorable for microbes if they can only obtain access thereto. When the obstruction is extrinsic, the compressing agent, which may be a tumor or a hydatid cyst, while opposing an obstacle to the outflow of bile, also presents a barrier to the passage of infecting germs upwards. It is quite possible, as Dupré has proved by numerous experiments on animals (tying the choledochus under rigidly aseptic conditions), to have a completely aseptic obstruction of the bile-duct. The symptoms will be icterus by retention, augmentation of volume, then shrinkage of the liver and gall-bladder, without fever or signs of local inflammation. Anatomically, there will be mechanical dilatation of the bile-ducts, vascular engorgement, then cloudy tumefaction or stenosis of the hepatic cells; these cell-degenerations being probably dependent on the irritation exercised on the cells by the resorbed bile. It is probable that in nature the conditions are seldom favorable for a continuance of asepsis; sooner or later the appearance of fever of a remittent or intermittent character and the signs of local inflammation give evidence that microbes have penetrated either the bile-ducts or the gland tissue proper.

The foreign bodies which may by their presence in the bile-duct cause obstruction and favor infection are generally of intestinal origin; worms (ascarides distomata), cherry-stones, various seeds, etc. Frerichs, in 1877, reckoned thirty-seven cases of biliary helminthiasis. If such bacteriferous causes of infection are rare, this is not the case with calculi, which when lodging in some part of the duct, cause biliary stasis by retention, dilatation of the ducts, ulcerative folliculitis of the mucosa and diffuse peri-lobular sclerosis. The more cachectic the patient from any cause (alcoholism, malaria, tuberculosis, senescence), the less feeble the resistance, and the more speedy and thorough the infection. The form of the calculus has its rôle in the biliary infection: thus sharp points and edges wound the epithelium of the ducts and favor the invasion of bacteria. Numerous small calculi in the choledochus or cystic duct are much more likely than a large solitary calculus to multiply points of contact with the mucosa and occasions of traumatism.

(To be continued.)

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[1] Progrès Méd., 1886; Archiv. de Phys., 1886.

[2] Les Infections Biliaires; Etude Bacteriologique et Clinique, Paris, 1891.

THE VITAL STATISTICS OF MASSACHUSETTS FOR THE YEAR 1890.[1]

WITH a census population of 2,238,943 in Massachusetts, of whom 51.42% were females, there were 57,777 births, 20,838 marriages, 654 divorces, and 53,528 deaths in 1890, showing a birth-rate of 25.81, a marriage-rate of 9.31, a death-rate of 19.44, the averages for five years (1886–90) being 25.8; 9.3; 19.4.

The excess of births over deaths in the five years ending in 1890 was 68,298, or 205,409 less than the increase in population in the same time, showing the effect of immigration.

The average rate of increase of the population (excess of birth-rate over death-rate) is about half that of Germany, England and Scotland, somewhat more than that of Ireland and more than double that of France. The proportion of children born of native parents has decreased from 41.62% in 1881, still further to 34.82% in 1890. The illegitimate births were 2.03% of all births.

The average age at marriage was, of men, 28.8 years; of women 25.5. Marriages of native-born were 46.11% of the total; of foreign-born 31.50; of one native and one foreign-born 22.32, the latter showing a steady increase.

From birth to five years of age, the deaths per 1,000 living were between 60 and 70; from ten to fifteen 3.7; and again from seventy to eighty over 70. The death-rate of males like the birth-rate somewhat exceeds that of females.

The registration of deaths shows only 1.19% where the causes of death were not returned; and 519 deaths were reported as from unknown or ill-defined causes, not including 175 deaths from dropsy, 12 from ascites, 161 from infantile, 700 premature and 1,235 from paralysis.

The mortality from the infection-diseases, 3.61 per 1,000 of population, was considerably less than for either of the previous three years 4.09, 4.14, 4.14, in spite of the excessive number of deaths from influenza, which caused 411 deaths, as compared with 27 in 1889 and 11 in 1888. There was only one death from small-pox. For 1890 and the previous four years in order the rates were, per 1,000, measles .050, .088, .112, .234, .067; scarlet fever .087, .095, .259, .305, .170; diphtheria and croup .726, 1.140, .942, .848, .802; cerebro-spinal meningitis .070, .077, .088, .066, .053; whooping-cough .162, .159, .126, .119, .139; typhoid fever .373, .459, .485, .475, .412; erysipelas .078, .091, .109, .095, .090; influenza .184, .014, .006, .009, .007; diarrhœal diseases 1.52, 1.61, 1.60, 1.56, 1.42; ague and remittent fever .027, .039, .033, .024, .014; pneumonia 1.80, 1.77, 1.91, 1.72, 1.46; hydrophobia caused 16 deaths as compared with 14 in 1889, 2 in 1888, and none in the previous two years.

The decrease in reported mortality from pulmonary consumption continues, 5,791 deaths were returned or a rate of 2.59 as compared with 3.39 in 1871, or 13.3% of all deaths, which is the least ever recorded in our State.

The death-rates from brain diseases (apoplexy, softening of the brain, paralysis, insanity, cephalitis and brain disorders) have increased, as given by census years, from 1.21 in 1860; 1.43 in 1865; 1.43 in 1870; 1.64 in 1875; 1.70 in 1880; 2.00 in 1885 to an estimated rate of 2.2 in 1888 and 1.96 in the census year 1890.

The reported death-rate from cancer has steadily increased from .33 per 1,000 living in 1871 to .62 in 1890, partly a result, probably, of better diagnosis. In a similar way part, at least, of the great increase in kidney diseases (27 deaths in 1851 to 1,273 in 1890) and all the decrease from dropsy (390 to 175) may be accounted for.

The number of deaths reported from heart disease increased from 352 in 1850 to 3,417 in 1890, while the ratio to the living population increased from .354 per 1,000 to 1.53.

Since the beginning of our registration the increase of the urban population has been steady and rapid. In 1842, the population of towns having more than 10,000 inhabitants (of which there were only six) was 24% of the total population, while in 1890 the population of the twenty-eight cities was 61.3% of the total population. The facts bearing upon the distribution of the people in the State and vital statistics of the cities and rural population are most interestingly brought out in tables 130 and 131. The average death-rate for the twenty-eight cities, for the last five census years, is 21.4, as compared with 17.5 in the rest of the State, but the birth-rates are respectively 28.4 and 22.0.

An increase of deaths from illuminating-gas poisoning has very quickly followed the introduction of water-gas. The number of these deaths, 11 in 1890, was greater than the whole number from that cause in Massachusetts, for the entire period of nearly fifty years previous to the introduction of that dangerous agent.

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THE TREATMENT OF TYPHOID FEVER.

As long as typhoid fever is as widespread and as frequent a disease as it is now, and has been in the past, attacking every year in all parts of the world a considerable percentage of the vigorous and active element of urban and rural populations, causing a mortality of from seven to fourteen per cent. of those attacked, and, even under the best of results where life itself is spared, incapacitating its victims for participation in the world's work for a period measured by weeks or months — so long its treatment will be a subject of great professional interest. And, notwithstanding a more intelligent prophylaxis, greater attention to ventilation. and improved water-supplies and drainage, until all men become prudent and wise, typhoid fever, like the poor and like syphilis, is likely to be about us to offer this source of professional interest.

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[1] Forty-ninth Report to the Legislature of Massachusetts, relating to the Registry and Return of Births, Marriages and Deaths in the Commonwealth for the year ending December 31, 1890: together with the Reports relating to the Returns of Libels for Divorce and to the Returns of Deaths investigated by the Medical Examiners for the year 1890. Prepared by the Secretary of the Commonwealth, with editorial remarks by Samuel W. Abbott, M.D. Boston: Wright & Potter Printing Co., State Printers, 18 Post-Office Square, 1891.

This winter is no exception to others in bringing its quota of papers, of books, and of discussions upon this important subject. In fact, it may be said that such contributions have been rather more numerous than usual. The cold-water treatment by Brand's and other methods is receiving more consideration in our cities, and is being tested in some of the large hospitals. We shall await the results, after a sufficient trial has been made with such material as presents itself at our hospitals and under the conditions which prevail there, with some curiosity. The aim, of course, should be to get the actual results of a given method, not to prove a given method to be either a good or a bad one. Typhoid fever in our hospitals is a different thing from so-called typhoid fever in a German army corps under the charge of a disciple of Brand, and the facilities for service differ. We do not know positively how far such an army corps is more prone to have typhoid as well as more prone to recover from it, than another corps similarly situated and of the same number of men under different medical management.

Some of the Philadelphia daily papers were much occupied last autumn by the use of Brand's method in the German Hospital there; we have published in our last issue and in this, a paper by Dr. A. L. Mason (which was read at one of our societies) on typhoid at the Boston City Hospital; the New York *Record* publishes in its last issue an abstract of a discussion of the treatment of typhoid fever, held at the Practitioners' Society of that city; and we have before us an octavo volume of two hundred pages, by Dr. James Barr, of Liverpool, upon treatment by continuous immersion for a week or ten days at a time, in a tank of water at a temperature of from 90° F. to 98° F., according as the body temperature of the patient is above 100° F., or approaches normal. Dr. Anderson, of Edinburgh, is very successful with a little perchloride of iron, administered every hour, day and night, and another practitioner has admirable results from a tablespoonful of a one per cent. solution of chloroform hourly, day and night.[1]

The general sentiment at the Practitioners' Society seemed to be in favor of the use of the tub, and represented a moderate amount of experience at St. Luke's, the New York, Bellevue, and the Presbyterian Hospitals; though all the speakers were not equally impressed with its merits. The President, Dr. G. L. Peabody, thought the only drawback to the Brand method, as a method, was its expense. It required an abundance of fresh water, sometimes ice, and at least four able-bodied men to apply it — two for day service and two for night service. An interne at the New York Hospital had devised a so-called bed-bath, a rubber sheet was put under the patient, and the depression was filled with water which was kept cold with ice. This was superior, he thought, to cold sponging. The cold coil was serviceable, but not equal to the tub.

It is to be hoped that in the investigation of the merits of the Brand method by our American physicians, the patient as an individual entity will not be forgotten. And it is also reasonable to hope that, if cold and humid cold is positively shown to be the most desirable agent at command to diminish the trying symptoms and the mortality of typhoid fever, American ingenuity may devise some less disturbing, cumbrous and barbarous mode of application than frequent "tubbing."

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MEDICAL NOTES.

Surgeon-General of the Navy. — The President has appointed John Mills Browne, to be Surgeon-General and Chief of the Bureau of Medicine and Surgery in the navy, with the rank of commodore.

The Population of New York State. — According to the recent State census, the population of New York State is 6,479,730. The Federal census of 1890 gave the population at 5,997,853. This increase comes principally from the cities.

New Chairs and Professors at the Jefferson Medical College. — The Board of Trustees of the Jefferson Medical College, at their meeting, April 7, 1892, instituted a Chair of Clinical Gynecology, with a seat in the Faculty, and elected to the new Chair Dr. E. E. Montgomery, who has been for a number of years Professor of Gynecology in the Medico-Chirurgical College. They also established the following Clinical Professorships, electing Dr. F. X. Dercum, Professor of Nervous Diseases; Dr. E. E. Graham, Professor of Children's Diseases; Dr. H. Augustus Wilson, Professor of Orthopedic Surgery; Dr. H. W. Stelwagon, Professor of Dermatology, and Dr. W. M. L. Coplin, Adjunct Professor of Hygiene.

Victor Horsley on Epileptic Disturbance. — Victor Horsley reaches the following conclusions in summing up a recent address on the origin and seat of epileptic disturbance: "Whatever be the point which the epileptogenous agency first attacks, we must conclude that the principal seat of the disturbance of a general or idiopathic fit must be the cerebral hemispheres, and especially their cortical mantle. Further, that the condition of the cortex during the attack is one of congestion, and not anæmia; and finally that in all probability this portion of the encephalon is actually the place of origin of the disturbance."

Caution in Dispensing Poisons. — The value to a druggist of extreme care in dispensing poisonous substances was forcibly brought out in the recent Harris trial in New York. The apothecary was able to show that the assistant who prepared the medicine took from the closet morphine contained in a black bottle, labelled poison; that he weighed out the directed quantity of the drug, and that this operation was witnessed by another assistant. The second assistant testified that he had seen the proper weight in one pan of the scale and just enough morphine in the other to balance it, and that he then noted his observation in a book kept for the purpose.

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[1] See Therapeutic Notes, p. 378.

Virginia Medical Law. — The Supreme Court of Virginia has decided that the medical law of the State is unconstitutional. The case before them at which this decision was given was that of a largely advertised doctor from Boston against whom complaint had been brought by the State Medical Board, alleging that he had no right to practice under the laws of the State.

The Teeth of School-Children. — Last year the British Dental Association undertook the examination of a large number of school-children to determine the condition of their teeth. As a result a record was obtained of about twenty thousand teeth. They found in this number that about eighteen hundred temporary teeth required attention, while of the total number of children examined, there were only fifteen per cent. whose teeth were sound and called for no interference on the part of a dentist. A very large number of permanent teeth required filling. The authors of the report draw attention to the fact that by neglect of the teeth at the age at which children attend school, a large amount of unnecessary trouble and suffering arises in later years. A large amount of good would be done if the teeth of school-children could be systematically cared for by competent dentists.

Changes in the Regulations of the Army Medical Corps. — By a recent law no medical officer in the army can be promoted to the rank of captain until he has passed an examination for promotion. Heretofore the medical officers of the army have been promoted to the rank referred to at the end of five years' service without an examination, while their less favored brethren of the navy and of the marine-hospital service have had to prepare at the end of three and four years' service, respectively, for an examination preliminary to promotion that was quite as rigorous as that given for admission into the corps. The Senate has recently passed a bill giving to officers of the medical corps holding the rank of colonel the grade of assistant surgeon-generals, and to those holding the rank of lieutenant-colonel the grade of deputy surgeon-generals. These are new titles in our army and are similar to those of the British army medical corps.

Pharmacopœias. — At the recent meeting of the Naturforscher Society, Dr. Thoms mentioned some of the results of a comparison of the various pharmacopœias, made by Dr. B. Hirsch and himself, with a view to drawing up propositions for securing uniformity of composition and characters in medicinal preparations in general use. The number of names of drugs, chemicals and galenical preparations contained in all the pharmacopœias at present legally authorized was stated to be 3,762. Of these, 2,069 occur in only one pharmacopœia, and 613 in two, whilst no more than 154, or about four per cent., are included in all. But if the calculation be limited to the six pharmacopœias issued recently, those for Austria, Germany, Hungary, Japan, Netherlands and Russia, the approximation to uniformity appears to be greater, for out of the 1,162 articles made officinal in these works, 224, or 19.28 per cent., are included in all of them.

NEW ENGLAND.

Mortality in Boston. — The number of deaths reported last week was 231, a death-rate of 26.1. The deaths from consumption were 34, pneumonia 34, persons over sixty years of age 42.

A Bichloride-of-Gold Hospital. — The Massachusetts House at Lexington has been leased, and is to be used as an establishment for the "Keeley Cure for Drunkenness." This house was the one erected in Philadelphia by the State of Massachusetts at the time of the Centennial Exhibition, and in 1878 was purchased and removed to Lexington, Mass., where for some years it was used as a hotel.

Boston City Hospital. — Rough drafts are being made by the city architect for enlargements of the City Hospital. The additions contemplate an entirely new group of buildings, some of one story and none over two stories in height. These buildings are to include an autopsy house, boiler house, a new morgue, and a new ward for contagious diseases — scarlet fever and diphtheria. The plans are still incomplete, subject to more or less essential modification. The new buildings will occupy the lot recently added by the closing of a portion of Springfield Street, throwing it into the hospital site, and the land on the opposite side of Springfield Street. The wards will be directly in the rear of the Nurses' Hall.

The Baby-Farm Bill. — The bill recently reported to the Massachusetts Legislature to regulate baby-farming is recommended by many charitable societies. The bill changes the licensing power from local Boards of Health to the State Board of Lunacy and Charity, and is not opposed by the local boards. The State Board is now charged with investigating parentage of foundlings and deserted infants, and many of these children come from baby-farms. Recent developments prove the necessity of inspecting places where illegitimate infants are boarded. The bill is also designed to prevent the buying and selling of infants, and the irresponsible and reckless handling of them from one person to another for mere money gain or reward. It is not intended that any responsible person cannot help another to the adoption of an infant. The bill also permits public authorities and incorporated charitable institutions to assist in procuring adoption for such compensation toward the support of an infant as the parent may be able to pay. One important section is that proving the identity of an infant and establishing his legal rights under law; another section protects and gives temporary aid to persons in distress and unable to provide for themselves.

NEW YORK.

The Orthopedic Hospital. — At a recent mid-lent fête, lasting two days, which was given at Sherry's for the benefit of the New York Orthopedic Hospital and Dispensary, the handsome sum of $3,200 was realized.

Criminal Charity. — What may well be called a case of criminal charity is reported from Hackettstown, N. J. Five children in a single poor family were taken with malignant scarlet fever; of whom three died, and the other two are hardly expected to recover. In investigating the cause of the disease it was found that the family had been presented with a bundle of clothing that had belonged to a child who had died of scarlatina.

Deaths for the Week. — The number of deaths reported during the week ending April 2d was 874, which, while two in excess of the mortality of the preceding, was fifty-five below the average of the corresponding week in the past five years. There were no deaths from either small-pox or typhus fever; but since then one of the female nurses employed at the hospital on North Brother Island, died of the latter disease.

Typhus Fever. — The three new cases of typhus fever mentioned in the Journal of April 7th, were all discovered on April 4th. One was a female patient at Mount Sinai Hospital, and the other two were male inmates of institutions on Blackwells Island, one of the workhouse, and the other of the almshouse. The Mount Sinai Hospital patient, who had come from a down-town tenement house on the east side of the city, had evidently contracted the disease from some of the Russian immigrants. One of the Blackwells Island cases was traced to Bellevue Hospital, where the man had come in contact with typhus patients; but in the other one it is not known in what manner the infection was caught. In the institutions on the island the most vigorous measures were at once taken to prevent a spread of the disease, including the detention beyond their terms of sentence of a number of prisoners at the workhouse. On April 6th, a fourth case of typhus was discovered, the patient in this instance being an immigrant who had been in the country four months, but who is known to have been in communication with the infected Russians; and on the following day a fifth case was reported from Bellevue Hospital. This patient is a woman thirty years of age, and it is not known in what way she contracted the disease. According to the last reports from North Brother Island, the number of typhus patients under treatment, including these five new cases, was twenty-three.

Small-Pox. — A number of cases of small-pox have been discovered during the past ten days. Four of these were reported on April 5th, and no less than eight on April 7th, in different parts of the city. It was ascertained that two of the patients removed to North Brother Island on April 5th, both young women, had been visitors at a certain low resort on Bleecker Street, and an investigation of the place, which is almost within a stone's throw of the Health Department buildings, revealed the unpleasant fact that the mistress of the house, a woman sixty-six years of age, had been ill with small-pox for nearly three weeks. During all this time the house was kept open, and men and women came and went at all hours of the day and night. The woman, who was then convalescent, professed to be ignorant of the name of the physician who had attended her and whose criminal neglect to report the case had imperiled so many lives.

Miscellany.

PUBLIC INCUBATORS.

A number of the towns in France have been studying measures to prevent the steady decrease in population in the country, and have adopted one notion that may have its application, if extended to other places.[1] It is to prevent the death of the children born before term, by establishing artificial maternities, where the use of the hatching-machine, or "*couveuse*," could be given to the public at a small rate or for nothing, depending on the case. Some of the cities, like Marseilles, have had a meeting of the city councils, and have passed laws regulating such establishments, and have voted certain sums towards their maintenance, and charitable persons have been asked to contribute towards them, not only as a charity, but also as a patriotic saving of soldiers to the country. An automatic *couveuse* is used, based on Dr. Auvard's model, which has been improved. Each room of the place used may contain a dozen of the hatching-machines, and one or two attendants can attend to the children placed in them. It is hoped in this way to save many infants born before term, belonging to poor people who either could not, or would not, provide such treatment. It is also thought that, raised in this way, away from the hospitals, such children will have a better chance than when put into such apparatus in the obstetric wards of the hospitals, as at present.

ASPIRATION, FROM THE PATIENT'S STANDPOINT.

Dr. Walter Bensel describes, in the *New York Medical Journal*, his own sensations as follows: "Shortly after the blizzard of a few years ago I contracted a pleurisy with effusion, from exposure during the storm. The effusion became so large and caused such considerable dyspnœa, dysphagia, and displacement of the heart that it was deemed advisable to aspirate and withdraw some of the fluid. The first needle that was introduced was a small hypodermic-syringe needle, simply for diagnostic purposes. The only thing that I observed at this time was that the pain was much more considerable than I had supposed it would be. Soon afterward another larger-sized needle was introduced to remove the fluid, and then I noticed that there were two distinct sensations of pain, equal in intensity, but different in character, one as the point of the needle passed through the skin, and the other just before the fluid was reached. The second was precisely the same as the "stitch in the side" felt with a dry pleurisy. A re-accumulation of serum occurring in a few days, a needle was again introduced. Only a small amount of fluid was removed before the lumen became obstructed in some way and the needle was withdrawn and re-introduced in another situation. A few minutes before each of these two aspirations, a four per cent. solution of cocaine was injected hypodermically, so that no pain was felt as the needle passed through the skin. The same degree of pain occurred as before, however, when the needle passed through the pleura. These facts would seem to indicate that the pleura possesses nearly, if not quite, as great sensibility as the skin itself."

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[1] Archives of Pediatrics, March.

LISTER ON ANTISEPSIS.

In his contribution to the *Virchow Festschrift* Lister reviews the history of antiseptic surgery, and gives his opinions of antisepsis as now practised, from which the following is abstracted:

The attempt to exclude microbes entirely from wounds was followed by results which more than fulfilled the highest hopes entertained of it. Yet the advance of knowledge has shown that to carry out such an idea in its entirety is on the one hand impossible, and on the other hand unnecessary. It has been ascertained that many common bacteric forms produce spores which resist for a long time the germicidal action of all known agents which could be used in operations. Hence to exclude living microbes entirely from wounds is an impossibility.

It is, on the other hand, happily unnecessary. In the first place, it appears that none of the bacteria which can cause mischief in wounds are of the spore-bearing kinds (exceptional occurrence of anthrax from infected catgut noted), while the sporeless bacteria have been shown by the most careful recent investigations to be deprived of life within a minute by a 1 to 20 solution of carbolic acid, the agent which we have always trusted for the purification of sponges and instruments, the hands of the operator, and the integument of the patient at the seat of operation.

These are the points of greatest importance to attend to during the performance of an operation, the once dreaded atmospheric dust being, as it would seem, a matter that may be disregarded. . . . The effects of micro-organisms upon the living body are greatly influenced by the dose — that is to say, by the numbers in which they are present at the seat of introduction. This seems to provide a clue to understanding how bacteria, in the attenuated and subdivided form in which they are present in the atmosphere, may be effectually disposed of by the natural antiseptic action of the blood and tissues.

The glowing accounts published by Koch two years ago of the antiseptic properties of corrosive sublimate led us to adopt solutions of that substance in place of the 1 to 40 carbolic lotion for washing and irrigating our wounds. But it turns out that the effects of the bichloride, supposed to be due to germicidal action, were in reality caused by the inhibitory power which that agent possesses even when present in extremely minute proportions. We cannot suppose that corrosive sublimate can have acted with germicidal effect upon the staphylococcus pyogenes aureus. My practice has been to abstain from irrigation during the operation, and at its conclusion to wash the wound with 1 to 500 solution, and irrigate during the application of the sutures with a 1 to 4,000 lotion.

It would be a mistake to suppose that no good can ever be done by corrosive sublimate used in the manner which I have described. Resisting as the staphylococci have shown themselves to that agent, there are other microbes very mischievous to wounds — such as the streptococcus pyogenes, the streptococcus of erysipelas, and the sporeless bacillus pyocyaneus, which are destroyed by very much weaker solutions.

If we think it prudent to wash our wounds before stitching them, it will be wise for us, in the present state of our knowledge, to revert to the 1 to 40 solution of carbolic acid. This agent has been shown to be far more uniform in its action upon micrococci than corrosive sublimate.

When first I witnessed the entire cessation of suppuration as a result of relieving abscesses of their contents, and at the same time preventing the access of organisms from without, I inferred that microbes could have nothing to do with the production of the pus. This was disproved with regard to acute abcesses by Ogston, and with regard to chronic ones by Koch's discovery of the tubercle bacillus. I conceive that the acrid products of putrefaction act injuriously upon the pyogenic membrane, and prevent destruction of the micrococci by the natural antisepsis which is always disposed to operate, but, so long as the abscess is unopened, is hindered by the disturbing influence of tension caused by the rapidly accumulating pus.

THERAPEUTIC NOTES.

Exodyne and Quickine. — According to the *Pharmaceutishe Zeitung*,[1] *Exodyne*, an American antipyretic, an analysis of which was made by Dr. F. Goldmann, contains approximately ninety per cent. acetanilide, five per cent. sodium salicylate and five per cent. sodium bicarbonate; alkaloids could not be detected in this mixture. *Quickine*, an American antiseptic is said to contain one part carbolic acid and 0.02 parts mercuric chloride in 1,000 parts of a mixture of alcohol and water.

Typhoid Fever. — Among the many methods of treating this disease, recently recommended, is that by Dr. Anderson, of Edinburgh, which consists in administering five drops of the solution of the perchloride of iron in a little water with glycerine or syrup and a few drops of the tincture of ginger, every hour, day and night.[2] If the patient has nausea this is relieved by four-grain doses of subnitrate of bismuth given before each dose of the perchloride of iron.

Dr. Werner has published a *résumé* of 130 cases of typhoid fever treated by a one per cent. solution of chloroform with the greatest success.[3] The patients take a tablespoonful of the solution every hour, night and day, during the acute period of the malady. When the symptoms abate the dose is diminished, but the treatment is not abandoned for several days after the complete cessation of the fever.

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[1] American Journal of Pharmacy, March.

[2] Satellite.

[3] Medical Press.

Crystallized Artificial Carlsbad Salt. — According to the German Unofficial Formulary,[1] this may be made as follows:

℞	Sodium sulphate (cryst.)	5 parts.
	Sodium carbonate (cryst.) . . .	2 parts.
	Sodium chloride	1 part.
	Hot water	12 parts. M.

Dissolve the salts in the hot water, filter the solution, and evaporate it until a film begins to form on the surface, then set it aside to crystallize. Separate the crystals from the mother liquid and transfer them (without washing them with water) to bottles. The mother liquid is to be rejected.

The resulting crystals are colorless, with a tendency to effloresce, and are soluble in 2.5 parts of water.

Fat Soap, or Mollin.[2]

℞	Solution of potassa (18.75 per cent.),	40 parts.
	Lard	40 parts.
	Alcohol	4 parts.
	Glycerin	15 parts. M.

Heat the solution of potassa, add the lard, and stir well during half an hour; then add the alcohol, maintaining the temperature, during twelve hours, at 50° to 60° C., and lastly add the glycerine.

Diuretin in Children.[3] — According to Demme this drug can be given to children between two and five years of age in doses of 0.50 gramme daily, and in doses of 1.50 grammes to those between six and ten. In infants under one year it is liable to cause gastro-intestinal irritation. It has proved of service in the dropsy of scarlatinal nephritis as well as in that due to mitral disease, after digitalis had proved ineffectual. Its action is not cumulative, but in one case of amyloid degeneration of the liver, kidneys, and spleen its use caused an erythematous rash, accompanied with profuse diarrhœa.

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Correspondence.

A NEW USE FOR AN OLD REMEDY.

Cambridge, April 7, 1892.

Mr. Editor: — After reading an article in the *Lancet* upon a new method of intestinal anastomosis, in which Woefler's solution — compound tincture of benzoin, containing a small quantity of iodoform, was employed for sealing the line of excision, it occurred to me that this would be an excellent substance for protecting the wound in perineal operations. The success of this operation, especially when buried animal sutures have been employed, depends not only upon the aseptic precautions during the operation, but also upon the maintenance of the aseptic condition of the wound after the operation. The latter is the more difficult part of the procedure, since the urine is liable to get into the wound and do harm, and the wound may also be contaminated by discharges from the rectum. To protect it from this danger, a seal of absorbent cotton and collodion has been employed, but this will not adhere to a mucous surface and therefore is imperfect.

The compound tincture of benzoin answers this function very well. In recent work on the perineum, I have applied three coats at the time of operating, and an additional coat every time I wished to draw the urine. I have not tested it as yet in primary restoration of these parts, but think it may be useful. Applied in this manner, it protects very satisfactorily the scratch-like remains of the wound that is left after its closure with buried sutures.

Yours truly, Albert H. Tuttle, M.D.

METEOROLOGICAL RECORD,

For the week ending April 2, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...27	29.63	37	39	34	69	68	68	N.E.	N.	19	9	C.	C.	
M..28	29.78	41	50	32	43	33	38	N.	N.W.	9	24	O.	O.	
T..29	30.06	42	48	35	35	34	34	N.W	N.W.	21	18	C.	C.	
W.30	30.26	38	45	31	40	56	48	N.W.	S.E.	12	8	C.	C.	
T..31	30.44	37	42	32	56	57	56	N.	S.E.	4	9	C.	C.	
F.. 1	30.51	46	58	34	55	40	48	S.W.	S.W.	4	19	C.	C.	
S.. 2	30.20	52	66	37	67	78	72	S.W.	S.W.	18	24	F.	O.	
☞	30.13	42	50	34	52	52	52			12	16			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 2, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	874	322	14.41	22.77	3.52	1.43	5.39
Chicago . . .	1,099,850	—	—	—	—	—	—	—
Phila. (Mch. 19)	1,046,964	430	137	12.98	12.19	3 22	1.38	5.75
Brooklyn . .	806,343	432	155	15.64	23.92	4.60	.46	7.59
St. Louis . . .	451,770	191	57	9.54	11.66	.53	5.30	2.12
Boston . . .	448,477	240	70	9.24	18.48	2.94	.42	4.20
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	127	52	12.06	12 64	.79	1.58	5.53
Cleveland . .	262,000	107	49	9.30	9.30	—	.93	2.79
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	110	53	14.56	20.02	—	2.73	7.28
Milwaukee . .	240,000	82	27	23.18	14.64	—	1.22	20.74
Washington .	230,392	100	32	9.00	17.00	1.00	3.00	1.00
Nashville . .	76,168	37	9	—	14.80	—	—	—
Charleston . .	65,165	17	5	—	5.88	—	—	—
Portland . . .	36,425	14	2	14.28	14.28	—	—	7.14
Worcester . .	84,655	27	10	11.11	14.80	3.70	3.70	3.70
Lowell . . .	77,696	41	14	4.88	19.52	2.44	2.44	—
Fall River . .	74,398	37	12	2.70	24.30	—	2.70	—
Cambridge . .	70,028	34	11	17.64	26.46	2.94	2.94	8.82
Lynn	55,727	20	6	—	10.00	—	—	—
Lawrence . .	44,654	—	—	—	—	—	—	—
Springfield . .	44,179	—	—	—	—	—	—	—
New Bedford .	40,733	23	8	4.35	4.35	—	—	4.35
Salem	30,801	13	7	—	7.69	—	—	—
Chelsea . . .	27,909	13	4	—	15.38	—	—	—
Haverhill . .	27,412	15	1	—	6.66	—	—	—
Taunton . . .	25,445	8	2	—	—	—	—	—
Gloucester . .	24,651	10	4	—	10.00	—	—	—
Newton . . .	24,379	4	1	—	50.00	—	—	—
Malden . . .	23,031	7	1	14.28	—	—	—	—
Fitchburg . .	22,037	3	0	—	—	—	—	—
Waltham . .	18,707	5	1	—	20.00	—	—	—
Pittsfield . .	17,281	5	2	40.00	20.00	20.00	—	—
Quincy . . .	16,723	7	2	14.28	—	—	—	—
Northampton .	14,990	10	1	—	10.00	—	—	—
Newburyport .	13,947	4	1	25.00	—	—	—	25.00
Medford . . .	11,079	6	1	—	16.66	—	—	—
Hyde Park . .	10,193	2	1	—	—	—	—	—
Peabody . . .	10,158	4	2	25.00	—	25.00	—	—

Deaths reported 3,026: under five years of age 1,090; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 388, acute lung diseases 557, consumption 380, diphtheria and croup 164, scarlet fever 81, diarrhœal diseases 46, typhoid fever 29, measles 18, erysipelas 15, whooping-cough 12, cerebro-spinal meningitis 11, malarial fever 10, puerperal fever 2.

From typhoid fever New York 7, Philadelphia 6, Brooklyn and Cleveland 3 each, St. Louis, Boston, Cincinnati and Washington 2 each, Pittsburgh and Cambridge 1 each. From measles New York 12, Cleveland 3, Brooklyn 2, Philadelphia 1. From erysipelas New York 5, Brooklyn 4, St. Louis, Milwaukee and Portland 1 each. From whooping-cough Philadelphia 3, New York, Cincinnati and Pittsburgh 2 each, Brooklyn, Boston and Washington 1 each. From cerebro-spinal meningitis New

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[1] American Druggist.
[2] Ibid.
[3] Lancet.

York 6, Washington 2, Philadelphia, Boston and Quincy 1 each. From malarial fever New York 5, Brooklyn 3, Pittsburgh 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending March 19th, the death-rate was 24.8. Deaths reported 4,848: acute diseases of the respiratory organs (London) 523, whooping-cough 196, measles 146, diphtheria and croup 51, diarrhœal diseases 36, fever 24, scarlet fever 22, small-pox (London) 2.

The death-rates ranged from 13.8 in Croydon to 33.4 in Oldham; Birmingham 23 4, Bradford 24.7, Gateshead 21.8, Hull 21.1, Liecester 21.8, Liverpool 33 1, London 24.3, Manchester 29.4, Newcastle-on-Tyne 17.4, Nottingham 20.8, Portsmouth 21.3, Sheffield 24.8, Sunderland 25.9, Swansea 27.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 2, 1892, TO APRIL 9, 1892.

Major Albert Hartsuff, surgeon, U. S. A., granted leave of absence for six months, to take effect on or about July 10, 1892, with permission to go beyond the sea, and to apply for an extension of two months.

First-Lieut. Alfred E. Bradley, assistant surgeon, U. S. A., ordered to Columbus Barracks, Ohio, for temporary duty at that station, during the illness of **Captain Augustus A. De Soffre**, assistant surgeon, U. S. A.

First-Lieut. William E. Purviance, assistant surgeon, U. S. A. (recently appointed) will proceed from Rossville, Illinois, to Fort Riley, Kansas, and report for duty at that station.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 9, 1892.

J. Mills, Browne, re-appointed Chief of Bureau and surgeon-general, U. S. N.

J. C. Boyd, detailed as assistant to the Bureau of Medicine and Surgery.

M. W. Barnum, assistant surgeon, ordered to the Naval Hospital, Washington, D. C.

Howard Smith, surgeon, granted leave of absence for six months with permission to leave the United States.

Champ Carter McCullough, commissioned an assistant surgeon in the navy.

SOCIETY NOTICES.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, April 20th, at 7.45 o'clock.

Drs. Lena V. Ingraham and Grace Walcott, "Ulcerative Endocarditis, with Rupture of Valve." Autopsy and specimen.
Dr. George B. Shattuck, "Malignant Endocarditis following Typhoid Fever." Autopsy.
Dr. F. C. Shattuck will open the discussion.
Dr. Myles Standish, "Ocular Headaches."
Albert N. Blodgett, M.D., *Sec'y*, 390 Boylston St.
E. G. Cutler, M.D., *Chairman*.

Iowa State Medical Society. — The forty-first annual session of the Iowa State Medical Society will be held at Des Moines, Ia., Wednesday, Thursday and Friday, May 18, 19 and 20, 1892.

Medical Association of Georgia. — The forty-third annual session of the Medical Association of Georgia, will be held in Columbus, Ga., April 20, 21 and 22, 1892. Members of the medical profession are cordially invited to attend.
Dan. H. Howell, M.D., *Secretary*, Atlanta, Ga.

RECENT DEATHS.

Edgar Parker, M.D., M.M S.S., died in Bridgewater, April 9th, aged fifty-one years. He served in the war as assistant surgeon of the Thirteenth Massachusetts Regiment and was severely wounded at Gettysburg. He received the degree of M.D. from Harvard in 1863. He practised medicine in Saxonville, Mass., until 1867, when he went to sea as surgeon of the steamship *Ontario*. He subsequently devoted himself to portrait painting and was an active member of the Papyrus and Boston Art Clubs.

BOOKS AND PAMPHLETS RECEIVED.

Clinical Report of Six Surgical Cases. By G. W. Cale, M.D., St. Louis, Mo.

Supracotyloid Dislocation. By John Ridlon, M.D., New York. Reprint. 1891.

Obstetric Problems By D. T. Smith, M.D. Louisville: John P. Morton & Co. 1892.

Neuroma. (With report of a case.) By Edmund J. A. Rogers, M.D., Denver, Col. Reprint. 1892.

A Remarkable Case of Laryngeal Œdema. By James I. Tucker, A.M., M.D., Harv. Reprint. 1892.

Seventy-eighth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Asylum, 1891.

Transactions of the New Hampshire Medical Society at the Centennial Anniversary, held at Concord, June 15, 16, and 17, 1891.

Epidemic Influenza. Notes on its Origin and Method of Spread. By Richard Sisley, M.D. London: Longmans, Green & Co. 1891.

Human Monstrosities. By Barton Cooke Hirst, M.D., and George A. Piersol, M.D. Part II. Philadelphia: Lea Brothers & Co. 1892.

Contributions to the Physiology and Pathology of the Nervous System from the private laboratory of Dr. Isaac Ott, Easton, Pa. Part XI. 1891.

Progress in Surgery in 1891. The Annual Oration before the Academy of Surgery of Philadelphia. By Thomas G. Morton, M.D. Reprint. 1882.

Living Larvæ in the Conjunctival Sac. By R. J. Phillips, M.D., Ophthalmic Surgeon to the Presbyterian Hospital, Philadelphia. Reprint. 1892.

Ideality of Medical Science. The Evil Events of the Profession, and an Available Device for its Reformation. By Maurice J. Burstein, A.M., M.D., New York. Reprint. 1892.

A Clinical Study of the Ocular Symptoms found in the so-called Mongolian Type of Idiocy. By Charles A. Oliver, M.D., Philadelphia. Reprint. 1891.

Die Behandlung der Tuberkulose mit Tuberkulocidin. Vorläufige Mitteilung von Professor Dr. E. Klebs, in Zürich. Zweite Auflage. Hamburg und Leipzig: Leopold Voss. 1892.

The Pathology and Prevention of Influenza. By Julius Althous, M.D , M.R.C.P., Senior Physician to the Hospital for Epilepsy and Paralysis, London. New York: G. P. Putnam's Sons. 1892.

Tenotomy by Open and Subcutaneous Incision, Tubercular Synovitis and Osteitis of Shoulder. By H. Augustus Wilson, M.D., Philadelphia. Detroit, Mich.: George S. Davis. Reprint. 1892.

Miner's New Complete Obstetric Record, combining with the usual record, all desirable Medical Statistics, together with a Medical History of the Pregnancy. Joel A. Miner, Ann Arbor, Mich.

Fifth and Sixth Annual Reports of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Transmitted December 1, 1889 and 1890. Harrisburgh. 1891 and 1892.

The Etiology, Pathology and Treatment of Diseases of the Hip-joint. By Robert W. Lovett, M.D., Out-patient Surgeon to the Boston City Hospital, etc. Fiske Prize Fund Dissertation No. xlii. Boston. 1891.

A Manual of Diseases of the Nervous System, By W. R. Gowers, M.D., F.R.C.P., F.R S. Second edition. Volume I, Diseases of the Nerves and Spinal Cord. Philadelphia: P. Blakiston, Son & Co. 1892.

Abdominal and Uterine Tolerance in Pregnant Women; as Shown by the Low Rate of Mortality under Severe Lacerated and other Wounds, the Result of Direct Violence. By Robert P. Harris, A.M., M D., Philadelphia.

A Manual of Autopsies designed for the Use of Hospitals for the Insane and other Public Institutions. By I. W. Blackburn, M.D., Pathologist to the Government Hospital for the Insane, Washington. Philadelphia: P. Blakiston, Son & Co. 1892.

Lectures on Pathology delivered at the London Hospital. By the late Henry Gawen Sutton, M.B., F.R.C.P. Edited by Maurice Eden Paul, M.D., and revised by Samuel Wilks, M.D., LL.D , F.R S. Philadelphia: P. Blakiston, Son & Co. 1892.

The Pocket Pharmacy, with Therapeutic Index: A *Résumé* of the Clinical Applications of Remedies Adapted to the Pocket Case, for the Treatment of Emergencies and Acute Diseases. By John Aulde, M.D. New York: D. Appleton & Co. 1892.

The Mütter Lectures on Surgical Pathology. By Roswell Park, A.M., M.D., Professor of Surgery in the University of Buffalo, etc. Delivered before the College of Physicians in Philadelphia, 1890-91. St. Louis: J. H. Chambers & Co. 1892.

The Principles and Practice of Medicine, designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., F.R.C.P., Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore, etc. New York: D. Appleton & Co. 1892.

Original Articles.

ON THE VALUE OF ELECTRICITY IN MINOR GYNECOLOGY.[1]

BY EDWARD REYNOLDS, M.D., BOSTON.

The current literature of the day is constantly occupied with statements and counter-statements of the value and the worthlessness of electro-therapeutics in gynecology; but, in looking over the statements which are made upon one side and the other, I think it will be found that there is a marked difference between its advocates and opponents, in that all the former speak of its use in definite terms by differing methods of application, and with the use of different currents; while the majority of the latter condemn the use of electricity undefined, usually speaking of it as dangerous and painful. I cannot but believe that this difference of method indicates the reason for the difference of opinion; that is, that those whose experience has been unfavorable are, for the most part, men who have attempted the use of an agent as powerful for good and evil as perhaps any other in general use in medicine, without a sufficient preliminary study of the natural laws which govern its production, and of the natural history of the effects of the different currents upon the human tissues.

Since the different varieties of the electric current produce almost exactly opposite effects upon the tissues, one current stimulating, another soothing, a third encouraging, and yet another controlling hæmorrhage, it is almost self-evident that their indiscriminate use must sooner or later be attended by considerable danger and severe pain.

Personally, I do not rank myself among the most enthusiastic advocates of the use of the current for each and every gynecological trouble, but I certainly wish to be regarded as one of those who believe it to be a most valuable agent in a large proportion of cases, holding it as I do to be, upon the whole, more frequently valuable than any one of our other conservative agents. I should feel that if I were obliged to give up some one of the methods which I habitually pursue in office practice, I should more readily abandon the use of the glycerine tampon, tincture of iodine, tamponade of the vagina, or massage of the uterus and its adnexa, than to lay aside my battery.

In this paper, it is my object to describe a simple armamentarium, with which it seems to me that most cases can be treated, in the absence of more elaborate preparations for the use of the current; to state briefly the amount and kind of electrical knowledge which I think essential to success in gynecological therapeutics, together with the technique of the applications; and, finally, to speak briefly of a few of the pathological conditions which are most uniformly benefited in this way, noticing in passing the indications and contra-indications for the current in each case, and occasionally giving a brief outline of a specimen case.

The greater the knowledge of electrical physics which the physician possesses, the more sure is he to apply it to the needs of his patients with intelligence and skill, and to contribute to the progress of medical science; but for practical purposes comparatively little will suffice. He who thoroughly understands and can apply Ohm's law, that, the electro-motive force is equal to the potential divided by the resistance, together with its numerous corollaries, knows all that is absolutely necessary for the comprehension of electro-therapeutics: but in making such a statement, I wish to emphasize the fact that he must possess this law and its corollaries with the utmost thoroughness, with the most complete understanding, and not by a mere mechanical effort of the memory. Such a knowledge can be acquired by any educated man with but a comparatively few hours' study of any of the more ordinary electrical text-books.

When once equipped with this knowledge, the physician must further acquire a clear understanding of the effects of the galvanic and faradic currents upon the human tissues, and must learn the modifications of their action which are produced by the use of one or the other pole as the active electrode, by the form of electrode employed, and by the degree of tension, or potential, of the current.

The situation and character of the organs with which we, as gynecologists, deal, enables us to use much more powerful galvanic currents than are within the reach of other electro-therapeutists. The insensitive condition of the mucous membranes, their separation from the skin of the abdominal wall by but a few inches of tissue, and the large expanse of surface which is there offered for the application of the dispersing electrode, are advantages enjoyed by no other body of specialists.

ARMAMENTARIUM.

If we except the use of electricity for the destruction of fibroid tumors and other new growths, we, however, seldom need to employ a galvanic current of more than from 80 to 120 milliampères; and for ordinary office use, a battery with a maximum potential of 40 volts is usually sufficient. Any battery which is convenient, and furnishes a tolerably stable current, may be used for the purpose; but it may be remarked that the latter requisite implies necessarily the use of fairly large cells, since the resistances in gynecological work are so low that the portable chloride of silver and other small cells are exhausted with extreme rapidity. I have, myself, used for some years with satisfaction, a twenty-cell bichromate of potash battery, for the generation of the galvanic current.

In order to obtain the full benefit which it is possible to derive from the faradic current, it is necessary to possess a battery which is furnished with two induction coils, one composed of coarse, and the other of fine wire, and which is also possessed of several interruptors of varying rapidity, such as that devised by Dr. Engelmann, of St. Louis. Then, in addition to the batteries, it is necessary that the physician should supply himself with a reliable milliampère-meter; it is highly desirable that he should possess a rheostat, or current controller; and finally, his outfit should include a set of flexible abdominal electrodes of various sizes, and a number of others for vaginal and intra-uterine use.

For the negative, or dispersing pole, upon the abdominal wall, the wire gauze instruments now commonly sold have seemed to me as valuable as any, and more convenient than most. I have them covered upon one side with a thick layer of absorbent cotton and a single thickness of cotton cloth, upon the other with oiled silk. For the active pole, a vaginal electrode of a size which permits the metallic surface to be thickly covered with clay or absorbent cotton, a set of olive-tipped intra-uterine bougies with insulated stems, an intra-uterine electrode insulated to within two inches of its tip, and shaped like the common applicator, to be wrapped with cotton, and one whose last two inches are of the shape and proportion of the ordinary uterine sound, are all that are strictly necessary; though the possession of a large metallic vaginal electrode, and one for bi-polar intra-uterine use, is occasionally an advantage. The entire outfit may probably be purchased for about one hundred dollars.

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[1] Read before the Fall River Medical Society.

The technique of the application is simple. The patient should be placed in the ordinary dorsal position. It is unnecessary to remove or even loosen any of her clothing, unless an unusually powerful current is to be employed, since the smaller sizes of abdominal electrodes which are used with mild and medium currents can easily be slipped under the clothing from between the thighs.

The abdominal electrode, if not already prepared, should be covered with a clean piece of absorbent cotton of from one quarter to half an inch in thickness, when wet. This should be dipped in very hot water, and the superfluous fluid expressed until its moisture is just such that the water will not drip from it and wet the patient's clothing. It should be carefully arranged upon the electrode in such a way that the edges and angles are fully protected, placed upon the abdomen while still warm, and allowed to remain there during the few minutes that will be occupied by preparing and testing the battery; the object of this preliminary placing of the abdominal electrode being to permit the dried epidermis to become thoroughly moistened, thus greatly lessening its resistance. The battery and milliampère-meter should then be connected, and the connections tested by passing a weak current through the resistance of the rheostat, in order to see that everything is in working order. The vagina should be exposed by a speculum, and disinfected with the utmost care. If an intra-uterine electrode is to be used, it should be introduced with the utmost gentleness, any abrasion of the mucous membrane being certain to be followed by local cauterization; and should be allowed to remain in position, unconnected with the battery, until the sensations due to its passage have been forgotten.

The connection with the electrode should then be made while the battery is shut off from the circuit. The current should be turned on so gradually that the patient receives no shock, that being a phenomenon which is only experienced from an abrupt change in the electro-motive force. When the patient first begins to complain of uncomfortable sensations, the current should be checked, maintained at that height for from two to five minutes, and as gradually decreased; great care being taken that the connections are not broken until the battery has been wholly shut off from the circuit.

In administering the galvanic current, its strength may be increased by either one of two methods; the choice depending upon the variety of current which is desired. When the current of low tension is used, its increase is secured by the gradual addition of new cells to the circuit, by means of the cell collector. When the case requires a current of high tension, the whole resistance of the rheostat is at first included in the circuit. The force of the battery is then gradually turned on by the cell collector, until the desired effect has been secured; or until its whole electro-motive force is in use. In the latter case, the current is again decreased by gradual diminution of the resistance of the rheostat.

ACTION OF THE DIFFERENT CURRENTS.

Before proceeding to the discussion of the various conditions in which electricity is of use in gynæcology, it is necessary to define briefly the effect of the different currents, and to speak of the contra-indications to their use.

The Galvanic Current. — The galvanic current of high tension is that which is produced by a large number of cells and then reduced to the amount desired by the interposition of a high resistance. The galvanic current of low tension, or of quantity, is that produced by a small number of cells acting through a low resistance. The first excels in power of cauterization, the second in electrolytic action. Cauterization is most marked when a metallic electrode is used, electrolysis when it is moist and non-metallic.

When the negative current of low tension is used with a non-metallic electrode, its action is almost wholly limited to intra-polar electrolysis; that is, the stimulation of retrograde metamorphosis and the partial reduction of the interposing tissues into the ordinary products of such metamorphosis. The lowly organized tissues, such as the pelvic exudates, are much more actively affected by this process than the more highly developed, normal tissues. The effect upon the mucous membrane which is in contact with the electrode, is in this application reduced to its minimum.

When the negative current of high tension is used with a metallic electrode, much less electrolysis of the intra-polar tissues is to be expected; but the tissues in contact with the electrode are likely to be somewhat extensively cauterized. The use of the negative pole as the active pole, in general, tends to the increase of hæmorrhage, and is perhaps more likely to increase than decrease pelvic pain, at least for the few days which immediately succeed its use. It may often be advantageously combined with the sedative action of the faradic current of high tension.

The positive current of low tension with the non-metallic electrode is somewhat sedative in its effect and may be used for electrolysis; but it is mainly useful for the decrease of any hæmorrhagic tendency, since it has no other advantage over the corresponding negative current and its use necessitates the application of the more painful negative pole to the sensitive abdominal wall.

The positive current of high tension with a metallic electrode is a highly effective chemical cautery which is attended by but little pain, and tends to decrease hæmorrhage. Its advantages over other forms of cauterization are due to the fact that while when properly used its effect is limited to the mucous membrane, it tends from simple laws of electrical conduction to extend itself to the whole of the mucous surface, even including the recesses of the crypts, an advantage which can be claimed for no other caustic.

The positive current as a whole tends to decrease hæmorrhage and relieve pain.

The Faradic Current. — The faradic current of high tension is that produced by an induction coil made up of many turns of fine wire, while the faradic current of low tension is produced by a coil which contains but a few turns of coarse wire. The effects of both varieties of current are much modified by the number of interruptions per minute which is employed.

The faradic current of high tension with many interruptions to the minute, is perhaps more potent in alleviating pelvic pain than any other therapeutic agent which we possess. It has but little other effect. The faradic current of tension with few interruptions produces less marked relief of pain. It has a decided tendency to render the tissues anæmic, and is therefore often of value.

The faradic current of quantity, or low tension, is a sharp stimulant, and promotes contraction of both striped and unstriped muscular fibres, and thus relieves congestion and engorgment by hastening the current in the veins and lymphatics of the tissues through which it passes. Its effect is intensified by any reduction of the number of interruptions to the minute.

CONTRA-INDICATIONS TO ELECTRICITY.

Any acute inflammatory condition in the pelvis contra-indicates the use of electricity and must be most carefully excluded before the current is applied. The faradic current of tension has been recommended for use in acute pelvic inflammations. I have not myself as yet had sufficient courage to undertake its application, but have preferred to trust to slower, and, it seems to me, less dangerous methods; and indeed, am even accustomed to restrict myself to the less active of subacute cases.

The presence of pus in the pelvis, and of tubes whose uterine ends are occluded, is a contra-indication for any use of electricity, except electro-puncture, which I have never attempted and can say nothing about; believing as I do that where drainage is necessary, the use of the knife is the preferable procedure.

When much tenderness is present, the early applications should be restricted to the faradic current of tension. As this grows less, gentle galvanic currents may be resorted to, preferably in combination with it. The faradic current of low tension should never be used in the presence of inflamed tissues.

INDICATIONS.

It can be readily seen that the use of so many and such different agents as the various electric currents, either alone or in combination, opens up a field of such complexity that its complete discussion might well occupy a volume; and it seems to me that the only method by which discussion can be profitably elicited by a single brief paper, is the description of the methods employed in a few given affections, and a brief report of typical cases.

CONGESTION OF THE PELVIC ORGANS AND STENOSIS OF THE INTERNAL OS.

Case I. Mrs. X., thirty years old, came to my office with the following history:

Her menstruation had always been irregular. She had been married six years, and had never been pregnant. Had always been liable to dysmenorrhœa, which had, however, increased greatly since marriage, and of late was becoming rapidly worse. Connection was frequent, but not improperly so. Physical examination demonstrated the presence of moderately well-marked anteflexion of the cervix, and intense congestion of all the pelvic organs. She had not seen her catemenia for nearly three months, and was complaining, as was usual at such times, of heat, discomfort, and bearing-down sensations, referred to the pelvis. There was no pelvic tendernesss. She was given the negative galvanic current of low tension, with a non-metallic intra-uterine electrode, for ten minutes, and was directed to use four quarts of the hottest water bearable, under a hydrostatic force of three feet, twice daily.

At the end of two weeks, she returned, and reported that within three days she had menstruated more freely than for some years, and with but little pain. The same application was made and she was directed to continue the use of hot water; to insert a glycerine tampon after each injection, and return before the next catamenial period. The congestion of the vagina and cervix was greatly decreased. Feeling much better, she neglected to report until after the next period; but as this was less free and much more painful, in spite of the persistent use of hot water and glycerine, she returned for another application of the current. Her next period was preceded by a fourth application of the same character, and was free and painless. She then left town for the summer. On her return in the autumn, she reported that she had continued well, and had now no complaint to make, except of her sterility, which appeared to me to be due to a stenosis of the internal os, caused by the sharp bend in the canal. The posterior cul-de-sac was deep, the external os was not directed forward to any unusual degree, and I believed that if the canal were freely patulous, conception would follow, and the permanency of the cure would be assured.

In this belief, I applied the negative galvanic current of 20 to 25 milliampères through an intra-uterine sound electrode (metallic) for five minutes; and this application was repeated four times; the first three at intervals of from five to seven days; the last after an interval of three weeks, due to her failure to report sooner.

This application was made October 31, 1891. She has not menstruated since, and from repeated vaginal examinations I have now every reason to believe that she is about three months' pregnant.

This case illustrates both the action of the faradic current of low tension in stimulating the functions of the uterus and the activity of the pelvic circulation, and also the electrolytic action of the negative galvanic current; it being plainly evident that each succeeding passage of the sound through the internal os was easier and less painful than that which had preceded it. The metallic electrode was used in accordance with my belief that the stenosis was partly due to a congestion and hypertrophy of the mucous membrane which would be best relieved by cauterization.

CHRONIC SUB-INVOLUTION OF THE UTERUS AND ITS LIGAMENTS.

Case II. Mrs. B., thirty-seven years old, married sixteen years, the mother of six children, complains of a dragging sensation, great nervousness, unexplained crying spells, inability to leave the house alone. Physical examination resulted as follows: Moderate laceration of the pelvic floor, deep bi-lateral laceration of the cervix, its lips enlarged and everted; uterus large, soft, and low in the pelvis, freely movable; both ovaries large, heavy, and somewhat low; tubes normal. No pelvic tenderness. The faradic current of low tension was applied, at first through a vaginal, later through an intra-uterine non-metallic electrode, in sittings of six to ten minutes, repeated every week. The uterus was supported by a suitable pessary. The patient was recommended an operation for the repair of the cervix and perineum, but told that better results would follow if she submitted to some weeks or months of preparatory treatment by electricity.

At the end of four months, the uterine body was of normal size, the cervix much smaller and less everted: the ovaries were as a rule in normal position, though subject to prolapse when the patient was fatigued; the vagina had decreased in size so greatly that the pessary which she then wore was of about two-thirds the width of that which was at first employed. She was able to go to New York with her husband, and spend the day in shopping, alone, without discomfort, an event of which she spoke to me as, "Something which I never expected to do again." During the summer months which succeeded, she came to town each month for the adjustment of the pessary; but owing to the fatigues of the journey, was not subjected to any electrical treatment. In the autumn, she considered herself well, and when told that nothing but the most constant care could insure her remaining in that condition, so long as the lacerations were not repaired, she decided that in view of her improved condition, she would prefer to remain under observation and defer the operation,

She has remained in good health for more than a year, and no longer requires a pessary, but is again considering the question of operation, which is now advisable chiefly on account of the liability of a relapse from want of support.

This case is an illustration of what I consider one of the chief advantages of the faradic current; that of promoting the return of relaxed sub-involuted organs to their normal size. It is of great value as a preparation for an operation, whenever the condition is due to a lack of support; and in assisting in enabling the patient to dispense with the pessary in cases of retroversion from laxity of the ligaments, where the supports are unimpaired.

PELVIC EFFUSIONS AND DISPLACEMENTS DUE TO CONTRACTED LIGAMENTS.

Case III. Miss S., single, twenty-six, tailoress, complains of backache and pain in the right groin, running down into the thigh, of about two years' duration. Physical examination shows the uterus to be retroverted and adherent; the right broad ligament shortened, much thickened and very sensitive, especially on motion of the cervix toward the left side. Directed to use glycerine tampons.

At the end of three weeks, the pelvic tenderness was decidedly less; the uterus somewhat more movable. The negative galvanic current was applied, for five minutes, at each visit, through a non-metallic vaginal electrode, with a strength of 20 to 25 milliampères, increased after a few sittings to between 40 and 45, and was followed at each visit by systematic tamponade of the vagina through a Sim's speculum. At the end of eight weeks the mobility of the uterus had greatly increased; it was in nearly normal position, and the patient was able to tolerate a retroversion pessary, which, with occasional intermissions on account of exacerbations of pelvic tenderness, she has now worn for two years.

This case is a type of those of its class which I have subjected to electrical treatment. If I am unable to report the brilliant successes in the rapid dispersion of large pelvic exudates which some other observers have seen, it is because I have hesitated to apply the current to acute affections, in the belief that success could be as surely and more safely, although certainly more slowly, effected by other means; and also because in more chronic cases I have never as yet trusted to the current alone, but have thought it best to supplement its effects by the other and more familiar methods which are at our disposal.

CHRONIC PELVIC PERITONITIS, PARA- AND PERI-METRITIS, SALPINGITIS AND OVARITIS.

Case IV. Mrs. M., thirty-eight, mother of five children, two years ago complained of slight pain in the right side soon after the birth of the last child. Was recommended by her physician, without vaginal examination, to apply hot vaginal douches. She used one, and was attacked by severe burning pain in the right groin, for which morphia was administered for several days, and which in less severe form has never left her since, On examination, universal pelvic tenderness, most marked on right side and over uterine body. Faradic current of high tension, with moist vaginal electrode, about 1,500 interruptions to the minute for five minutes; used glycerine tampons. One week later, stated that though she still felt some pain, it had been distinctly less from the time of the electrical application. The same current was re-applied; patient not seen since; is reported to have continued well.

This case is an extreme example of the favorable effects of the faradic current of high tension in chronic pelvic tenderness, due to a slight inflammation of one or more of the pelvic organs. In my experience, its influence is usually favorable, but as marked an effect as this cannot always be expected.

ENDOMETRITIS.

Case V. Mrs. F., forty-five, slight backache, especially when tired, moderate but increasing dismenorrhœa since one year after birth of last child; when during an unusually painful catamenial period, she passed a small oblong body, which, on rough inspection appeared to be an ovum of from a week to ten days' advance in gestation. On microscopical examination by an embryologist, it was declared to be a cast of the uterus from a case of pseudo-membranous dysmenorrhœa. Application of the positive galvanic current, 65 milliampères strength, from the metallic intra-uterine electrode, for about fifteen minutes; use of hot-water douches recommended; patient not seen again for six months, when she stated that since the application of the electricity, menstruation had been but slightly painful, though it was somewhat more scanty than before, and she had considered herself well. Had used the hot water faithfully during all that time, and was recommended to discontinue it. A large amount of froth had oozed from the external os at the time of the application, and it was felt that a thorough cauterization of the uterine cavity had been made. The patient's menstruation was always somewhat scanty, and it was probably an error of judgment to have used the positive, in place of the negative, current. She did not return for treatment until nearly a year later. At that time she considered herself well, but thought that her dysmenorrhœa was somewhat worse. After six applications of the negative galvanic current, 50 to 60 milliampères of five minutes each, she menstruated much more freely and with less pain than usual, and said that she felt much more cheerful and in better condition than for some years. A metallic intra-uterine electrode was used, in the belief that the dysmenorrhœa was dependent on the existence of endometritis.

CONSTIPATION.

Case VI. Mrs. F., sixty-three, pelvic organs senile, complains of pain in back. This was thought to be due to shortened sacro-uterine ligaments and constipation. Vagina packed, and given elixir rhamnus Purshiana Co., N. F., teaspoonful t. i. d. In the course of six weeks, some relief from pain. Packing somewhat inefficient from laxity of the vaginal outlet. Cathartic increased to two teaspoonfuls t. i. d., without satisfactory effect. Given faradic current of low tension, with small sacral and abdominal electrodes, twice weekly. After five applications, was able to obtain a daily motion with one teaspoonful of the cathartic three times daily. Bowels have since continued in fair condition under the continued use of the same prescription.

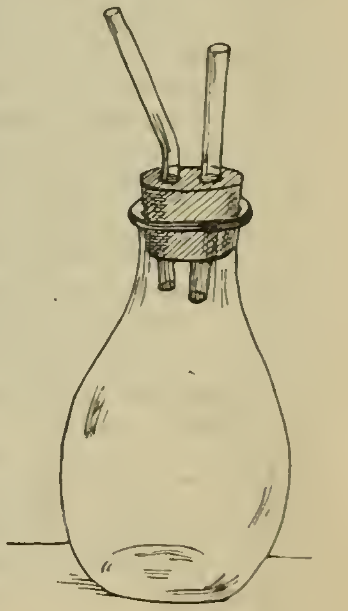
If it be urged, in discussion of these cases, that they have been selected as favorable instances of the value of the current, I must at once plead guilty to the indictment. All cases do not make as favorable a showing as this. These were successful cases, and selected as an argument in support of the use of electricity, and of the view which I myself personally support warmly, that in properly selected cases it is a therapeutic agent of great efficiency. If in cases which are less fit for its employment it acts less well, and in improper cases does harm, that is no more than must be admitted for every potent therapeutic agent. The use of electricity is an art which must be carefully studied, which requires in its application much care and judgment, and, above all things, an accurate diagnosis of the presence or absence of its contra-indications. I must freely confess that when I first began to use the current, in many of my cases the result was not satisfactory, and I was obliged to discontinue electricity and resort to other means. In one of my early cases, positive harm resulted from an injudicious application of the faradic current of low tension, in the presence of a subacute inflammation; but with increaing experience, the proportion of marked successes has become considerable; the proportion of cases in which I have secured the alleviation of symptoms has become large, while the percentage of unbenefited cases steadily decreases: and I find that as time goes on the proportion of cases in which I use it is steadily though slowly increasing. I cannot help believing that in the hands of well-trained practitioners of intelligence, it is likely to be more and more highly rated year by year.

Ether Drinking. — Russia has become infected with the vice of ether drinking, and the pernicious habit has spread so rapidly that the Government has judged it necessary to prohibit the free sale of ether and of certain of its compounds, and to schedule it among the poisons the sale of which, even by pharmaceutical chemists, is surrounded with severe restrictions, as was lately done in Ireland at the suggestion of Mr. Ernest Hart. The measure has been very effectual in Ireland, and we hope it may be so in Russia.

CASES OF DYSPEPSIA WITH TREATMENT BASED UPON AN EXAMINATION OF THE GASTRIC JUICE.[1]

BY GERTRUDE W. VAN PELT, M.D., BOSTON.

The hope of a scientific basis for treatment in gastric disorders, and the fascinating possibilities suggested by the chemical analysis of the juices, aroused in the early days of this study, a natural enthusiasm; but, as the looked-for results often failed to follow the administration of the chemicals so clearly indicated, there has perhaps been a decrease in the general interest. Possibly too much was expected of it, for the truth of the text-books' teachings — that the stomach is outside the body — must not be forgotten. In treating it we are but at the threshhold of the domain which is to be put in order, and the folly of considering any one symptom here, rather than in its relation to other symptoms and to their underlying causes, is true of dyspepsia, as of any disease. Still, a knowledge of the condition of the stomach is a certainty amid uncertainties. Even though that condition be dependent upon distant or obscure causes, such knowledge affords an aid too valuable to be discarded, and often plays an important rôle in helping to solve the varied and intricate problems which each separate case presents. In support of this belief I would like to present to you the histories of a few cases.



Before passing on to them, however, I will take occasion to show an arrangement for extracting the gastric juice, which I have found to facilitate very much the operation. To the tubes inserted in this glass can be attached by rubber tubings, the stomach-tube and an aspirator, and the glass can be held in place and concealed from the patient by placing it in a partly closed table drawer. Then after the introduction of the tube, if its eye happens to be in the liquid, and the air in the glass has previously been rarefied; the moment the stopcock is turned, a little liquid is forced into the glass. If the liquid does not run, it is due either to the stomach's being empty; to the eye of the tube being occluded, or what is more common, to the tube being pushed in too far or not far enough, so that the eye does not dip in the liquid. Always, before readjusting the tube, or withdrawing it, the air must, of course, be allowed to re-enter, so as to avoid any possible irritation from suction on the mucous membrane.

Case I. Patient had been nervously tired for four or five years and at times had suffered from dyspepsia. For four months before treatment she had suffered constantly from it. Her symptoms were, heaviness in the epigastrium, occasional acidity and burning, failure of appetite, constipation, much loss of strength, nervous depression, sleeplessness and sudden attacks of dizziness, coincident with a distress in the region of the heart. During these four months, there were a few days when the symptoms were much aggravated, as she could take only milk gruels in small quantities, and was unable to leave her bed. The first examination of the gastric contents was made five hours after a test-meal of soup, roast beef, potatoes and bread. The juice contained .17% of lactic acid. HCl was absent. There was much mucus, and much of the meat was undigested. Forty drops of a four per cent. solution of HCl were prescribed, to be taken in a glass of water during the first hour after meals, and the stomach was washed daily. This treatment was continued for three weeks, without any marked change in the symptoms, except that the patient was relieved for a while after each washing, and passed better nights. About this time she complained of a burning sensation, which was relieved by the washing, and which was, she thought, like the burning she had often felt before. Another specimen was taken, and what was surprising, it bore all the characteristics of a specimen taken from a patient suffering from hyperacidity; that is to say, there was an abundance of clear liquid, and a sediment of farinaceous food, which fell at once to the bottom. On examination there was found .45% of HCl, no organic acids, no mucus. The burning sensation before washing was, of course, due to the excess of HCl, as it had previously, no doubt, been due to the presence of organic acids. From symptoms alone, it would have been difficult, if not impossible to have recognized the change. The administration of HCl was stopped, and there was considerable difficulty in quieting the irritation of the gastric glands. The daily washing was continued and alkalies given, but the condition did not improve decidedly until coffee was given up, and only the blandest food eaten. Since this experience, I have begun treatment, in most cases, with smaller doses of HCl, and watched its effect more carefully.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, February 17, 1892.

At the end of six weeks, or nine weeks from beginning treatment, the secretion was normal; the appetite was much improved; the patient slept better; the sudden attacks of dizziness had entirely disappeared, and there was no distress in the stomach. The constipation was a more obstinate symptom, and did not disappear until several months later, after there was a gain in general strength. As soon as possible after the digestion became normal, the amount of nourishment was increased gradually, as the patient could bear it. During the year following, she gained fifteen pounds in weight, and very much in general strength. At times, after some unusual exertion, she suffered from dyspepsia, but rest, and a few washings always restored her.

CASE II. Miss K., thirty-one years of age. Had dyspepsia of ten years' standing, for which she had at various times been treated. She was subject to attacks of vomiting, so that, at times, for days together she could retain but little food. After an attack of pneumonia two years previous, her health was worse, and later the dyspepsia grew more serious, as she was often kept awake by it the greater part of the night. She suffered at time of beginning treatment from occasional vomiting of froth, with or without food, but the most distressing symptom was a constant sensation of gas rolling about in the stomach, which sometimes caused palpitation with a feeling of great weakness. There were attacks of gastric pain, which were relieved by mustard plasters; acid eructations; constipation and anorexia. She did not notice that certain kinds of food disagreed. Tongue was flabby and pale, and she was very anæmic.

Physical examination. Stomach extended on left side to a point half way between umbilicus and pubes, and was not found at all to right of umbilicus; tenderness on pressure over this region; heart sounds normal; apex beat on a line with nipple; pulse 90, and irregular, full and compressible. Urinalysis, normal. Analysis of the gastric juice three hours after a test-meal; total acidity .37%; HCl absent.

As the patient dreaded having her stomach washed, the following treatment was ordered: eight drops of the fluid extract of Pinus Canadensis, in a glass of hot water, to be taken half an hour before meals; three drops of the dilute HCl in half a pint of water, to be taken during the first hour after meals. Her bowels were regulated; and she was treated with the constant current, 30 milliampères, twice a week, one electrode being over the stomach, the other opposite it on the back. At the end of two weeks she was feeling somewhat better, and a second analysis of the gastric juice was made, medicine having been omitted for that day. It was as follows: total acidity .4%, HCl .02%. Artificial digestion complete in 3 hrs. 39 m. With HCl added to the juice to make it .2%, it was complete in 2 hrs. 27 m., and with HCl to .2% and pepsin added, complete in 3 hrs. As the progress did not seem to be sufficiently rapid, the patient was persuaded to have her stomach washed daily; and the HCl, and galvanic current were continued also; in two weeks iron was added to the treatment.

The symptoms of dyspepsia rapidly disappeared, and four weeks later she said her stomach had not felt so well for years. Examination of the juice at that time showed the following condition: Total acidity .3%, all of which was due to HCl; artificial digestion complete in 1½ hrs. The constant current and HCl were stopped; and an analysis three weeks later showed the total acidity to be .1%; all of it due to HCl. She had at this time no symptoms of dyspepsia, if she confined herself to a simple diet, and her appetite was good. She remained free of dyspepsia for four months, until she caught a heavy cold. She is of a delicate constitution, has a marked strumous diathesis, and is subject to severe colds. These always reproduce the same gastric condition, which is, however, relieved by the same measures.

I will say, in regard to the galvanic current, that my employment of it was based upon some experiments made in Germany, which showed that it had the power to increase the secretion of gastric juice. I have since applied it for the same indication, directly to the walls of the stomach, by means of a deglutible electrode, devised by Dr. Max Einhorn, and described in the *Medical Record* of May 9, 1891. I used, on grounds purely theoretical at that time, the positive pole. Later I had this electrode, which I will pass around, made for me by Codman & Shurtleff. It is patterned after Dr. Einhorn's, but differs in being much smaller, in having a stronger and stiffer wire, so that the electrode can be pushed down, which makes it easier of introduction and less disagreeable to the patient; and in being much more securely fastened, so that there is no danger of leaving the electrode within the stomach. The copper-tip unscrews, so that if the wire should show signs of weakening at any point, it can easily be replaced by a new one.

To test the immediate effect of electricity upon the secretions, I have begun a few experiments, which were conducted as follows: The stomach was thoroughly washed, and the water, when clean, analyzed for HCl. If none was present, 200 cm. of tepid water was given, and allowed to remain in the stomach ten minutes, then withdrawn and analyzed quantitatively. The same procedure, with the deglutible electrode in the stomach ten minutes, using the positive pole and a current of 25 ma. The same was repeated at another time, applying a current of 25 ma. externally. These experiments were so few that I will not report them in detail, but mention simply that the positive pole increased the secretion of HCl, as did also, to a less extent, the external application. In the case which I will report next, however, there was no secretion of HCl after the use of the current, but as she greatly improved under these applications, I inferred that they in some way improved the nervous tone of the stomach, and this is, I am inclined to think, the most important result of this therapeutic measure. Dr. Einhorn has published a most interesting article on this subject in the *Medical Record* of January 30, 1892.

Case III. March, 1891. Mrs. T., fifty-nine years of age. Had never been very strong, but did not consider herself an invalid until about two years previous. During that time she had been a great sufferer, and had been confined to bed about half the time, with much pain and loss of strength. When she presented herself for treatment, she had almost abandoned hope of relief, and said she found life unendurable. Her chief symptoms were pain, loss of strength and attacks of vomiting. For months she had not been free from a burning pain in the middle of the back, which rendered her very nervous and prevented sleep. She had acid and gaseous eructations, no nausea as a rule, and rarely headache, but great loss of strength and enormous development of adipose tissue. Appetite was good, but as all food caused distress, she ate but little. Constipation and hæmorrhoids. Examination showed no enlargement of the liver, but bowels and stomach much distended with gas. Heart sounds normal. Analysis of gastric juice four hours after a test-meal: Total acidity .27%; HCl absent. Liquid abundant and greenish. Gmelin's bile test, negative. Residue contained an enormous quantity of mucus, some starchy food and large particles of meat. Stomach was washed thoroughly after removing the specimen, and for the remainder of that day and the night following, there was great relief from the pain in the back, so that she slept six hours, a thing she had not done for a long time. As indicated by the analysis, HCl was prescribed. In two days her symptoms were aggravated and other specimen was taken. A quart of liquid was easily removed, bearing all the appearance of hypersecretion of HCl. Analysis showed it to contain .25% of acid, all of which was HCl. After this, a daily lavage of the stomach with a weak solution of Pinus Canadensis (which she soon learned to do herself) and the faradic current twice a week, constituted the treatment.

Frequent analyses of the gastric contents were made, with no uniformity in the results. The secretion of HCl was once as high as .3%, and often was completely lacking. Artificial digestion was attempted once when .25% of free HCl was present, but it was incomplete in eight and one-half hours, both with and without the addition of pepsin. The only constant condition seemed to be that there was always very much in the stomach, and food was often removed which had been eaten twenty-four hours or more before. The stomach was clearly dilated, though on account of the quantity of fat in the abdominal walls, physical examination was difficult. After six weeks' time the patient was much improved. She slept well and was relieved entirely of the pain in her back soon after beginning lavage of the stomach. But she was still weak, and seemed as incapable as ever of digesting more than a small amount of the food she ate. It seemed doubtful whether she would ever be materially better, and she was told that relief from pain was all she must expect, and that possibly she might always need to wash her stomach. She possessed great courage and perseverance and said that seemed to her as nothing in consideration of the relief which it afforded.

The apparent irregularity in the secretions, suggested some nervous disturbance, and in the hope of influencing that, she was treated twice a week for two weeks with the constant current (10 ma.) over the pneumogastric nerve. A specimen removed after this contained what had been found once previously, a normal amount of free HCl, and no organic acids, but there was no added improvement after this treatment. The application of the galvanic current directly to the mucous membrane of the stomach was then tried by means of the deglutible electrode. The negative electrode four by six inches in size was applied over the liver or stomach anteriorly. This seemed to act very beneficially. She digested better; was able to eat more; and said she never felt the burning in the stomach, which had been so frequent up to that time. These applications were made twice a week, for six weeks, with a medium strength of 20 ma. During this whole time and four months after, the secretion of HCl was normal, varying from .15% to .2%, and no organic acids were present three hours after eating. On seeing her again two months later, it was found, that, although the other conditions continued improved, mucus was still present in quantities, and the muscular tone of the stomach remained defective. For these conditions the stomach was washed three times a week with a solution of silver nitrate, twelve grains to a pint of water; which was immediately preceded and followed by a washing with clear water; and twice a week the faradic current (with the coarse wire of Gaiffe's battery) was used within the stomach. In four weeks' time there was no perceptible mucus and but little food at the washings. Her general health at this time was wonderfully improved. She was obliged to attend closely to hygiene, but was free from pain, could do her own light housework, and was able to walk four miles at times without fatigue.

A satisfactory explanation of this case has not suggested itself to me, and I hope that some one here may be able to throw more light on it than I can. I do not understand why there should have been in the beginning such a difference in the secretions from day to day. The secretion of mucus was unusual in amount, out of proportion to the other symptoms in a case of gastric catarrh, and I have thought that, possibly, owing to this, the muscular atony and consequent dilatation, the food swallowed did not practically come in contact with the walls of the stomach, and that therefore the gastric glands were not stimulated to secretion; while at other times, owing perhaps to a difference in the character of the food, or to some different mechanical condition, the gastric glands were stimulated.

Case IV. Miss E., aged eighteen years, was a delicate girl, of scrofulous history and somewhat anæmic. She complained of distress after eating, which was not great but constant, and her stomach felt raw after taking a cold. Appetite was poor, bowels regular. As I disliked to propose stomach washing in this case, and as the symptoms seemed to indicate a slight gastric catarrh, HCl was given from time to time during a period of three months. But as there was no constant or decided improvement, a specimen of gastric juice was removed five hours after a test-meal. The total acidity was .33%, free HCl .16%. The solid residue which was small, contained considerable mucus and amylaceous material. Albumen digested in one and one-half hours in the oven.

Owing to a bad cough, which interfered with the use of the stomach-tube, she was ordered to drink half a pint of a weak solution of Pinus Canadensis, as hot as possible, one-half an hour before each meal; but four weeks later, there being little improvement, the stomach was washed daily with a weak solution of Pinus Canadensis, for six weeks, when she left the city. At first there was much food in the stomach at the washings, but this gradually decreased, so that towards the end, the stomach was generally empty. A specimen taken shortly before her departure contained .18% of HCl, and no organic acids nor mucus. She had distress in the stomach occasionally, but it was much decreased. Six months later she wrote that her stomach was not troubling her.

Case V is a case of Dr. Morton's, for whom I made one analysis, and who has kindly permitted me to report it.

Mrs. R., sixty-eight years of age, was strong when young, but for fifteen or twenty years had suffered from dyspepsia. It began by distress after eating and a weak feeling in the stomach. At one time she had had catarrh of the bowels badly, which had disappeared. She used also to have pyrosis. At time of beginning treatment, suffered only from loss of appetite and weakness. Bowels, though regular, were sometimes much distended with gas. Never pain, but there was often a full feeling after eating a small amount. Weight 98 pounds, once weighed 130 pounds. Pulse 92. Stomach, somewhat dilated. Gastric juice three hours after a test-meal contained .29% of free HCl, and no organic acids. Peptones abundant. Artificial digestion complete in fifty-five minutes. Solid residue contained mucus and bloody mucus. This seems to me to be an instructive case, and illustrates well the difficulty of making a diagnosis from symptoms alone. A treatment by HCl would have been suggested in this case, almost, if not quite as much as in the last one, and yet there was a hypersecretion, whereas in the other, there was a normal amount only after several weeks' use of the drug. Had treatment been instituted to increase this secretion, it is quite possible that gastric ulcer might have resulted. For although the etiology of gastric ulcer is not yet determined, recent study has shown that in the majority of cases, this condition of hypersecretion and irritability exists. As the patient lived at a distance, and only came to the city once for a few days, she could not be closely watched, but under a general treatment tending to quiet the irritation and improve the nutrition. Dr. Morton tells me she has improved.

Case VI. Mrs. T., forty-eight years of age. She had had for three weeks a constant burning pain in the stomach. Was nervous and frightened about herself. For some time she had had a domestic trouble, which had been a source of great anxiety. Stomach not dilated. Specimen of gastric juice three and one-half hours after a test-meal: Total acid .1%, all of which was lactic acid. HCl was given and the stomach washed almost every day. After each washing she was relieved from the burning pain for the rest of that day, but the result was not permanent, and the treatment was not persisted in. Later, after a removal of the cause of mental anxiety, the dyspepsia disappeared.

Case VII. Miss S., aged thirty, was extremely anxious, apprehensive and nervously depressed. She had suffered much from dyspepsia for over two years, and had been steadily growing weaker. Appetite poor. Troubled much with eructations and rolling of gas in the stomach, but suffered no pain, except much headache. She slept poorly, was very thin, having lost a great deal of flesh. She unfortunately was obliged to work hard, and was never free from worry. She had been treated in various ways for a long time without any great improvement. Heart sounds, normal. Stomach extended three fingers below umbilicus and was entirely on the left side. Specimen of gastric juice four and one-half hours after a test-meal: Quantity of fluid very abundant, total acidity .46%, HCl absent, peptones present, mucus abundant. The diet was first carefully regulated, HCl was ordered, and the stomach washed daily with a solution of Pinus Canadensis. In two weeks there was a normal secretion of HCl and .25% of organic acids. Once a week the stomach was washed with nitrate of silver (gr. xv to a pint of water). In four weeks there was no mucus observed, and these washings were discontinued. The secretion of HCl failed once again and the drug was renewed; also the positive pole of the galvanic current, with a strength of 25 ma. was applied directly to the stomach. After four treatments extending over four weeks, the secretion was normal, and she was feeling better. But as digestion was still very slow, faradism was used four times within the stomach, with the coarse wire of Gaiffe's battery. At the same time, washings with salicylate of soda, and salol internally, were used successively to control the abnormal fermentation.

She has had twelve treatments in all, which have been very irregular, owing to her living at a distance, and she is still under treatment. The secretion of HCl has been normal for a long time, but fermentation from organic acids has not been controlled. The lower border of the stomach is at the umbilicus, and there is so little food at the washings, that it is only washed occasionally. Her appetite is excellent, and she sleeps well. She has no headaches, but is troubled with rolling of gas more or less. Her strength has greatly increased. She is cheerful and able to do much work without fatigue.

The next case is especially interesting to me because I questioned at first whether I had not a disturbance of purely nervous origin to deal with, which could not be cured by treatment directed alone to the stomach. Results, however, seemed to indicate that it was a case in which removal of a peripheral irritation was able to avert a threatened nervous disturbance in a person who had such tendencies.

Case VIII. Miss P., forty-eight years of age. Father died of apoplexy, and one sister has for years suffered from a severe form of migraine. Patient herself has never been very strong, though generally well and is able to work at the millinery business regularly. She comes for treatment on account of severe attacks of pain in the stomach, which occur every five to seven days usually, but are occasionally delayed as long as two weeks, never longer. They are preceded by a nervous, restless and apprehensive feeling, which lasts from several hours to a day. She has occasionally, pain in the back of the head, and along the left side, in the arm and leg, and she thinks she is more apt to have that at the time of a gastric attack. In the intervals of these pains in the stomach, she is troubled very much with a distress which is relieved by eructations of gas. She has had this trouble for about ten years, but lately it is worse. She is well nourished, weight, 190 pounds. Bowels regular, but movements never well formed. Sleeps well, except just before one of her attacks. Urine, normal. The stomach-tube was passed twice after a test-meal, but the apertures became clogged with large pieces of meat, and the operation was not persisted in. A drop of the juice which remained at the bottom of the tube, did not affect Congo paper, showing that HCl was probably absent and certainly insufficient. She was ordered to take five drops of dilute HCl in a glass of water during the first hour after meals; eight drops of the fluid extract of Pinus Canadensis in a glass of hot water one-half hour before meals, and she was recommended to chew her food carefully.

Two weeks later she said her stomach felt stronger. She had had no attacks of pain and had less gas. Analysis of gastric juice: Total acidity .2%, HCl .07%. A very small amount of liquid came through the tube, probably on account of the abundant quantity of mucus. One week later was feeling well; had had no attacks of pain. Total acidity of gastric juice .2%, all of which was free HCl. The stomach was washed with water after the specimen was taken. A week later the patient came for the fourth time, having been under treatment five weeks. She had been overworking a few days and had been very tired. She was annoyed somewhat by gas in the stomach, but otherwise had no trouble. The stomach was washed with nitrate of silver (gr. xv to the pint), preceded and followed by a washing with clear water. She was ordered to continue taking three drops of dilute HCl after meals and drinking hot water before, for two weeks and to see me if she had any further trouble. Four months have passed, and I have not yet seen her.

In three cases, which I will not report in detail, this method of examination has been most useful in excluding a gastric disease, when the symptoms seemed to point to it. One of these cases had been twice in a hospital to be treated for gastritis. All the discomfort and distress was felt in the stomach, but the main trouble was in the liver and to treatment directed to that organ she responded at once. I have treated a few other cases in this way, but as they were somewhat similar to the preceding, I will not take your time to report them.

School Trustee. — "Your class in physiology does not appear to be up to the standard, Miss Birch.

Teacher. — "I've done the best I could with the charts that I found here, Mr. Small."

School Trustee. — "Um—er—what did the charts consist of?"

Teacher. — "Six views of a whiskey stomach."

— *Puck.*

PROVISION FOR PATIENTS WITH CHRONIC DISEASES IN THE CITY OF BOSTON.[1]

BY PHILIP COOMBS KNAPP, A.M., M.D.,
Physician for Diseases of the Nervous System to Out-Patients, Boston City Hospital.

THE object of this paper is not to present anything materially new; it is merely to call attention to a long-recognized defect in our institutions for the care of the sick, and to elicit discussion.

Although the provision for the treatment of contagious diseases and disorders that come under the care of the specialist is not all that can be desired, yet it is a fact that our present hospitals can provide reasonable accommodations for patients with acute diseases. Now, if it be incumbent upon us to provide for the proper treatment of such cases, why is it not equally incumbent to provide for patients with chronic disease? In point of fact the provision is most inadequate. The Massachusetts General and the City Hospitals are crowded with patients with acute diseases; the latter institution refuses incurable cases, and questions closely the reasons for a stay in the hospital beyond two months, although it gives temporary relief and shelter to many chronic cases. The Carney Hospital receives a few such cases; the Home for Incurables has sixty beds, and other smaller homes and institutions provide for perhaps as many more.

There is a large class of patients, of whom we see many in out-patient clinics and free dispensaries, who are victims of chronic incurable disease, phthisis, cancer, Bright's disease, paralysis, chronic surgical disorders, etc. How many such cases there are it is not easy to say, but that there are many requiring hospital care is a fact familiar to all of us and we can seldom find a permanent shelter for them. Of course, many patients with chronic diseases prefer to remain at home with their families and friends, free from the routine of an institution; but many others have no homes or need hospital treatment.

In one class of chronic diseases — those of the mind — hospital treatment becomes imperative; but the provision which the city makes for its insane is not adequate; out of 1,118 insane belonging in Boston who were in public institutions on January 1, 1891, only 399 were in the city asylums. The rest were boarded at the city's expense at the State asylums. In consequence of the repeated urgings of Dr. Fisher, however, further provision is now making for the city's insane within the city limits.

Setting aside the limited provision which can be made for patients with chronic diseases at the Carney Hospital and small private charitable institutions, the only places to which patients with chronic diseases can be sent is to the city almshouses at Long and Rainsford Islands. At Rainsford Island is the institution for female paupers, with 300 or more inmates.[2] Here there is a very old hospital with 50 beds, to accommodate acute cases among the inmates, and all the maternity cases. On Long Island is the institution for male paupers with about 300 inmates.[3] The sick are cared for in the dormitories, and among them are 75 women, chronic cases, who have never been removed to Rainsford Island for lack of accommodation. January 1, 1891, there were 227 patients remaining in the hospital; 763 had been admitted during the year, 135 had died, 5,732 had been treated at sick call.[4] A new hospital is now building to accommodate 100 patients; the present accommodations are confessedly inadequate and over-crowded.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, February 17, 1892.

[2] Maximum number of females in 1890, 483. Average number of females at both islands, 437.

[3] Maximum number of males in 1890, 430. Average number of males at both islands, 309.

During the summer these institutions have been made the subject of considerable adverse criticism in the public press. Whether this criticism were just or not, I am unable to say. The results obtained there seem to be admirable, despite the disadvantages under which the physicians work. There are reasons, apart from any question of good or bad administration, which render it undesirable to send patients with chronic disease to them.

The first of these objections is sentimental, and therefore of much greater importance. An industrious man or woman, who becomes incapable of further self-support by reason of disease, can, without loss of self-respect, go to a lunatic hospital or to a city hospital for free treatment, but such a person will go to the almshouse only as a last resort, and the act of going to such an institution is the last drop in the cup of their degradation. The good old Yankee prejudice against the poorhouse still holds, and when it is crushed, you have crushed not only the self-respect of the patient but that of the family; and from that to absolute pauperism is but a short step. Anything that tends to pauperize a family must be deprecated, and, although theoretically the difference between a hospital and the hospital ward of a poorhouse may be only that "'twixt tweedledum and tweedledee," nevertheless it is just such trifling differences which make the great distinctions of life.

The second objection is the remoteness. It takes from half to three-quarters of an hour from the wharf to reach the islands, and the boat makes but two trips a day. The public institutions of New York are also on islands, but they can be reached in a few minutes from the wharf, and a tug makes frequent trips. This remoteness and inaccessibility render the visits of friends infrequent and difficult; in cases of sudden changes in the patient's condition it becomes impossible for the family to be summoned promptly, and the seclusion takes from the publicity which is desirable as a guard against abuses. Furthermore, since it is difficult to keep up the personal associations which make for the patient's mental hygiene, this inaccessibility renders it impossible to employ in such a hospital a visiting-staff as in the other hospitals. That an efficient visiting-staff and training-school would be an improvement on the present state of things is self-evident, and such a statement casts no reflection upon the present management.

In spite of the boards of the overseers of the poor in the different towns, it has been clearly shown that the condition of the insane in our town almshouses varies from tolerable to intolerable. Nowhere can it compare to the condition of the insane in the asylums, and in most places it is a disgrace. The condition of patients with other diseases in our almshouses is doubtless better, because the general practitioner, or the town physician, can deal better with such cases than he can with insanity, but I doubt if even in these cases, the treatment, as a rule, can be favorably compared with that of a large hospital. Of course in such a statement I mean to except the conditions of patients in a large chronic hospital like Tewksbury.

What should be done? A hospital should be established within the city limits, near the line of some railway or horse-car route, so as to be at all times accessible. It, of course, need not be as central as the hospitals which have to treat acute diseases and accident cases. It should be a hospital — not a poorhouse — with a sufficient visiting-staff, and with wards or beds for special diseases, under the care of specialists — syphilis, paralysis, cancer, tuberculosis, epilepsy, all should be provided for. Such a hospital may consist of various moderate-sized pavilions, and room should be provided for growth, for eventually it would have to provide for 500 or 1,000 patients. Such a hospital might be in the same grounds and under the same general supervision as a hospital for the chronic insane, which would reduce some of the expense. This union of the two hospitals is seen at Blockley in Philadelphia, and at the Charité in Berlin.

The objection, of course, is the cost. The original building cost would be about $300 a patient, as in the new building at Austin Farm. The cost of maintenance would also be much higher than at the poorhouse, perhaps higher than at the Lunatic Asylum, but lower than at the City Hospital. It is therefore more probable that a people's forum or a free university or some other demagogical scheme will get an appropriation first.

THE CAUSE OF SEA-SICKNESS.[1]

BY CHARLES NORTON BARNEY.

Plutarch, who thought that sea-sickness was caused by the smell of the salt water, was probably the first theorist on the subject, and since his day there have been advanced numerous theories not very much more satisfactory than his in their practical results.

But before showing what theories are most generally accepted, I wish to make a distinction between genuine sea-sickness — that which is mechanically induced — and the subjective form which is from purely emotional cause. There are some sensitive women who are nauseated at the first tremor of the boat; some even at the thoughts called up by the sight of the ship; and others who get sick on packing in preparation for the voyage. All these are representatives of the second form, and in such persons there is a predisposition to sea-sickness which shows itself on land as well as on the water in a condition of general sensitiveness or neurasthenia.

Some have said that all sea-sickness is of this subjective form. But one may wake from a sound sleep in the very worst paroxysms. Then again, if a dog be deprived of consciousness, and tied to a platform which is made to go through the movements of a ship in rough weather, all the symptoms of sea-sickness occur, and in such a case emotional causes, such as fear, owing to the conditions of the experiment can have no part in the etiology.

Perhaps the most plausible theory to explain how motion *per se* can cause sea-sickness, is the one which places the origin of the trouble in the inner ear. Among the chief physiological facts established during the past forty years is the knowledge that our bodies are endowed with a special sense whose function is "to determine the position of the head in space," and to regulate the mechanism by which equilibrium is maintained. The principal seat of this faculty is in the semicircular canals of the inner ear. It had been long doubted whether these had any connection with the sense of hearing, until some time ago Ferrier and others noticed that injuries to the canals did not impair hearing, but caused interesting effects in the loss of equilibrium. For instance, in pigeons, when the vertical canal was cut, the bird turned a series of back somersaults in a most extraordinary manner; and when the horizontal canal was cut, the pigeon whirled around in a horizontal plane. Much doubt has been thrown on the results of these experiments as to the direction of the motion, but the chief fact remains that injury or irritation to the canals produces loss of equilibrium, and, what is especially interesting, such irritation is nearly always followed by vomiting.

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[4] Report of the Commissioners of Public Institutions. 1890.

[1] Read at one of the Physiological Conferences of the Harvard Medical School.

Sea-sickness seems to be essentially a disturbance of this faculty of equilibrium. It seems that to be most favorable to the coming on of the disturbance the motion should be either backward, downward, or oscillating, and we shall see why this is so a little later when we notice that the ampullæ are all at the upper front parts of the canals. A combination of these conditions is the most effective, especially if the motion is at the same time irregular. Hence many persons who feel no discomfort from the regular swing of a yacht, become sick in a row-boat or a steamer.

But we are anticipating; we have not yet seen how motion can cause irritation of the semicircular canals. The endolymph follows the motion of the head in those canals whose plane corresponds most nearly to the direction of that motion, and when the motion is suddenly reversed by the oscillation of the ship, or changed in direction by a new wave striking her on another point, the endolymph continues in its original direction until stopped by friction. This causes undue pressure in one or more of the ampullæ, by which wrong impressions are conveyed to the sensorium, and incoördination, giddiness, etc., result. The otoliths in the endolymph are washed up against the nerve filaments at the front of the canals and produce an excessive irritation, which is expressed in vertigo and vomiting.

But the semicircular canals alone, even in sea-sickness from motion are not always the only cause of the trouble. There is another class of cases to which Dr. Irwin applies the term, "Labyrintho-musculo-visceral-vomiting"; by which he means "vomiting *due to* mechanical disturbance of the viscera, *permitted by* incoördinate muscular action, the *result of* faulty labyrinthine impressions. The violent and complicated movements of a ship in a heavy sea have a tendency to displace the abdominal viscera. In one accustomed to the life, involuntary muscular action protects the organs from contusion." In others, the course of events is as follows: The endolymph, as already stated, follows the motion of the head, and, after that motion has stopped, continues for a second or so to move on in the original direction. During this second, "erroneous impressions are conveyed to the sensorium, which in turn sends a mistaken message to the abdominal muscles, a wrong set are brought into action," and complete abdominal chaos is the result. The intestines bulge forward at the end of each descent of the ship, so stretching and irritating their attachment that the abdominal vessels are gorged with blood and vomiting sets in. This class of vomiting is very violent. It is relieved in the same way as the other class (that is, by remedies directly affecting the nervous system, as anodynes and sedatives), but with the addition of a tight bandage round the abdomen.

There is probably a minor kind of sea-sickness caused by the mere churning about of the food in the stomach, irritating the nerves there as they would be irritated by an emetic. This is often the sort experienced in small boats, and is at once relieved by vomiting.

That sea-sickness can exist independent of visual impressions is shown by the fact that one may be attacked while sleeping, and, besides, it is well known that the blind are not exempt. There can be no doubt, however, that stimulation of the sense of sight has an important influence in some cases, as has also stimulation of the other senses. Bad tastes and odors will often cause symptoms like those of sea-sickness, and I know of a nervous woman in whom these symptoms were always brought about whenever she heard a regular succession of noises; for instance, when some carpenters happened to be working on a house near by.

The power of the imagination as one of the causes of sea-sickness — that is, the subjective form — must not be overlooked. Whether it is more powerful here than in other diseases it would be hard to say, but the mental effort is so prominent that Mr. Bache, some years ago, wrote a very interesting article on the subject, in which he maintained that sea-sickness was wholly of mental origin. Wollaston started the theory that the blood rose and fell like the mercury of a ship's barometer during a storm, and that resulting mechanical congestion of the brain was the cause of sea-sickness. Stocker thought it largely due to a partial vacuum in the lungs, and Naylor suggested spasms of the capillaries.

The reason why one does not get sick riding horseback is explained by those who hold the semicircular canal theory to be that the motions here are not violent, and also that the rider can adapt his position to them as is not the case with the complex movements of a ship. Dr. Rosenbach, the German, who has lately written a very elaborate pamphlet on the subject, opposes this theory, saying that the motions of a ship are not, after all, greater than those of the rocking-chair, but he leaves out of count the movements up and down of the ship as a whole.

The explanation of the fact that lying down with the head low and the feet toward the stern affords relief is simply anatomical. "The ampullæ of all the semicircular canals are on their anterior extremities, and in consequence, when the body is recumbent and the head low the endolymph and otoliths rest at the back of the canals — on the parts which are least sensitive." Riding backwards is distressing to some persons for the same reason, as here, of course, the otoliths drag forward and irritate the anterior and most sensitive parts of the canals.

Menière's disease confirms this theory. Here we have the reverse of sea-sickness, the irritation of the canals causing the unusual movements, while in sea-sickness, the movements of the body which result from the pitching of the ship, cause the irritation of the canals; and both are accompanied by vomiting. Then again, Professor James found another strong confirmation in noticing that all deaf mutes who were insusceptible to dizziness, on account of the impairment of their semicircular canals by disease, were also free from sea-sickness. He also thought he had prevented an attack in himself while crossing the English Channel by setting up a counter-irritation in the canals.

The objection is always offered to every theory which attempts to explain the cause of sea-sickness, that these theories do not account for the fact that some persons are never sick on the water. This can not be considered a valid objection for so many things must be taken into account — the constitution of the individual, etc. But for my part, I have never known an instance where a person of average sensibility going to sea for the first time has not felt, at least, a little disturbed until he has learned to let his abdominal muscles take care of themselves without the intervention of his will.

The question arises how all the phenomena of sea-sickness have a tendency to pass away. They pass away for this reason: We learn to walk on shipboard without getting sick just as a rope-walker learns to walk on a high rope without getting dizzy. Through habit we learn to disregard those mistaken impressions which the semicircular canals send in — to be in a condition of "absent-mindedness" toward them. A sailor is in this condition so habitually that on returning to land after a long voyage he staggers for hours, even if he is not drunk.

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Clinical Department.

A CASE OF GLYCOSURIA CAUSED BY A LESION PROBABLY SITUATED NEAR THE FOURTH VENTRICLE.[1]

BY A. K. STONE, M.D.

A girl, thirteen years old, of good family and personal history, had an alveolar abscess and later an otitis media. This was followed by attacks of headache mostly located upon the left side. There was increase in thirst and in the amount of urine passed. During the headaches there was diplopia. When first seen she had lost about seventeen pounds of flesh, was weak, with persistent headache over the left eye, bowels constipated, skin harsh and dry. Paresis of the sixth nerve on the left side. Absence of all tendon reflexes. Urine: five pints, pale, and specific gravity 1,050; no albumen; sugar, nine per cent. by the polariscope. On limited diet she improved for a time, then the headaches became more severe and a general neuritis appeared. The muscles of the neck were tense. There was a return and exaggeration of all the reflexes and ankle clonus was present. During the starvation diet of the semi-conscious period, the sugar in the urine gradually fell until just before her death the analysis showed specific gravity 1,030; albumen a trace: sugar absent. Two days before death there was paralysis of the right side, with marked signs of irritation on the left side, followed the next day with paralysis of the left side.

As there was no autopsy the case was simply interesting from its probabilities. The persistent headache, the diplopia and hemiplegia followed by paraplegia, would point to the head as the seat of the trouble, while the glycosuria, the left diplopia and crossed right paralysis would point to the vicinity of the pons, and the unexplained purulent otitis media would suggest that the lesion was tuberculous in origin.

Diabetes in children I found was confined to reports of one hundred and seventeen cases, while there are only eleven cases where glycosuria was proved by the autopsy to have been caused by tumor near the fourth ventricle.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

Regular meeting, Wednesday, February 17, 1892, Dr. E. G. Cutler in the chair.

Dr. Gertrude W. Van Pelt read a paper on

CASES OF DYSPEPSIA, WITH TREATMENT BASED UPON AN EXAMINATION OF THE GASTRIC JUICE.[1]

Dr. A. L. Mason: I have been much interested in the cases. I notice she mentions that one patient did not get better until coffee had been abstained from. Is it usually found especially objectionable?

Dr. Van Pelt: I think that usually increases the secretion of hydrochloric acid.

Dr. Mason: Is it found necessary to give up coffee altogether in these cases?

Dr. Van Pelt: In that one, where there was hypersecretion, it was given up for a short time only.

Dr. Mason: I have supposed coffee was troublesome for dyspeptic patients very often, but it seems harder to make them give it up than almost any other article they use. They miss, I suppose, its stimulating effect.

Dr. J. J. Putnam: I was quite interested in some of the cases which would ordinarily have been diagnosticated as nervous dyspepsia. It seems undoubtedly true that in many of these cases, although there is no distinct evidence of catarrhal disease without such examinations as these, nevertheless there is sometimes relief from the use of the stomach-tube. I have recently had one such case where the relief has been very marked indeed. I should like to ask whether there is any real reason to think the small doses of hydrochloric acid actually, by their acting as an acid on the food, help in the digestion, or whether they simply act by stimulating the stomach.

Dr. Van Pelt: I think in both ways, but chiefly by stimulating the stomach to secrete.

Dr. Putnam: The quantity is so small it does not seem as if it could be of much use. I should like to ask whether the experiments that have been made in regard to the use of electricity in dyspepsia have shown anything more than a temporary increase of the secretion of gastric juice.

Dr. Van Pelt: I think the impression is that the nervous tone of the stomach is improved, though I suppose there have not been sufficient experiments to show exactly what it can do.

Dr. Putnam: I should like to ask whether electricity used in that way is distinctly more effectual than electricity used in other ways as a general tonic.

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[1] Synopsis of a paper read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, February 17, 1892.

[1] See page 385 of the Journal.

Dr. Van Pelt: Dr. Einhorn has published a number of cases and followed them up by that treatment alone, in which they seem to be distinctly improved. I did not mention that in some of my cases I used also central galvanization; and I did not notice the effect on the stomach from that treatment so much as I did from treatment applied directly to the stomach. The general tone of the system was improved, but the stomach was not so much improved by central galvanization as by electricity applied to the stomach.

Dr. Van Pelt stated, in answer to a question, that in the few experiments she had made, the direct effect was much greater with the electrode in the stomach than with electricity applied externally.

Dr. Leibmann: Is the electrode applied directly to the wall of the stomach, or is water first introduced?

Dr. Van Pelt: Water is first introduced. There would be no current unless it is dipped in water, on account of the hard rubber on the outside.

Dr. Knapp: I would like to ask if in any of the cases of galvanization or faradization of the stomach there were unpleasant symptoms. Some years ago I experimented on such cases; and I think at that time, galvanizing the stomach through the abdominal wall and faradizing, I occasionally got rather unpleasant symptoms. The patients complained of a good deal of pain in the stomach and nausea following the application of electricity. I never tried the intragastric application of electricity, but the external application with one electrode on the back and one over the stomach.

Dr. Van Pelt: I have not noticed that.

Dr. Knapp: Did the patients bear comfortably a current of thirty milliampères?

Dr. Van Pelt: They scarcely felt it in the stomach at all.

Dr. Knapp: What size of electrode was used on the outside?

Dr. Van Pelt: Four by six inches.

Dr. Knapp: What galvanometer?

Dr. Van Pelt: Gaiffe's.

Dr. Knapp: I found it very difficult to get beyond ten milliampères without getting burning of the skin. Some years ago Ewald advised the giving of hydrochloric acid, with the idea, in cases where it was diminished or absent, of getting into the system about as much hydrochloric acid as would be required in the ordinary process of digestion. He gave forty-five minims of the dilute acid in divided doses about an hour after eating. I should like to ask if this is given up.

Dr. Van Pelt: So far as I know it is. It was not used in Paris or in Germany when I studied this subject. It was used in a good deal smaller doses.

Dr. Minot: I would like to ask Dr. Van Pelt if she has ever employed dilute phosphoric acid in the treatment of these cases, or had an opportunity to compare it with the hydrochloric acid.

Dr. Van Pelt: I have not.

Dr. Minot: I suppose we all have used hydrochloric acid in patients labelled dyspeptics with more or less benefit, and also the phosphoric acid. I have used phosphoric acid in cases of difficult digestion. I can't say whether they were dyspeptics from too much or too little acid in the stomach, but in my experience it is really a very useful remedy indeed. I have seen some cases remarkably benefited by it where they have complained of pain, sense of weight or load in the epigastrium, and sometimes nausea. It is very difficult to mark out a line of cases that would be benefited by phosphoric acid or any other, but certainly a great many cases with those symptoms have, in my experience, done remarkably well.

Dr. Cutler: I wish to congratulate Dr. Van Pelt on the success of her treatment. I have had a certain amount of experience in this line, and I know how difficult it is to make a patient come and do what one likes. I think the cases reported have been extremely interesting.

Dr. A. K. Stone read a paper on

GLYCOSURIA CAUSED BY PROBABLE TUMOR IN THE FOURTH VENTRICLE.[2]

Dr. Mason: I had supposed that diabetes in young subjects is rapidly fatal. I think it is stated by Prout that out of six hundred cases but three were living at the end of ten years.

Dr. Minot: We see, however, a great many persons who live many years with the disease and suffer little inconvenience. I have a patient sixty-five years of age, under my care, who is in very good health, and he has been under observation several years.

Dr. Knapp read a paper on

THE PROVISION FOR PATIENTS WITH CHRONIC DISEASES IN THE CITY OF BOSTON.[3]

Dr. Rowe: I think Dr. Knapp under-estimates the large amount of good work that is done by the public and private charities of Boston in the care and treatment of chronic cases. If the total number of beds used by chronic cases in the large hospitals were summed up, together with the beds devoted to similar cases in such institutions as the Channing Home, Adams Nervine Asylum, and others, they would make a very good showing for the work done in the city.

The ideal hospital for chronic diseases does not, as far as I know, exist in this country. I mean a hospital built on modern lines of hospital construction, where patients have the benefit of first-class specialists, a trained corps of nurses, and where the treatment is carried out in the same general method adopted in large general hospitals. Philadelphia, through its municipal hospital, which is practically an almshouse hospital, and the special wards at the University of Pennsylvania, does a larger amount of professional work than most other cities.

Dr. Knapp's objections to treating the chronic sick in connection with almshouses are perfectly good, and it is not right that we should rid ourselves of this sentiment. It would undoubtedly be a charitable and generous action, should the municipality of Boston establish a hospital of five hundred beds, where patients having chronic diseases could be intelligently and scientifically treated. Such cases would not respond to the ordinary medical treatment, but would come largely under the care of specialists. It is a fact, however, that it is not easy to get sufficient means to keep up with the demands upon the city in supplying beds and accommodations for those suffering from acute illnesses and injuries; and if we are unable to obtain funds for the treatment of acute cases, we can hardly expect the city to furnish means, at the present time, for those suffering with chronic diseases, other than that which is now given at the almshouses on the islands.

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[2] See page 392 of the Journal.

[3] See page 389 of the Journal.

In recently looking over the statistics of London hospitals, I find that outside of the Parish Poorhouse Infirmaries, there are not, in all London, over three hundred beds intentionally devoted to the treatment of chronic diseases. At the Boston City Hospital there are always chronic cases which we are obliged to receive. We keep them until their immediate symptoms are relieved, and then transfer them to some other hospital or institution.

It follows, of course, that if the municipality of Boston should build a hospital for chronic cases, it would be only for those who have a legal claim upon the city, which means that a man must have lived in Boston five consecutive years and paid three poll taxes. A very large proportion of those who appeal for public relief on account of chronic sickness are those who have not this legal settlement. There is a large class of people, composed of old servants, artisans and laborers, such as Dr. Knapp mentions, who undoubtedly have a legal settlement, but the larger proportion of those who seek treatment for chronic diseases have not this legal settlement; and in case the city of Boston should establish a hospital for this purpose, such cases would not be refused.

There are two ways out of this difficulty; first, the creation of public sentiment, by repeated agitation of the question in various ways. Much can be accomplished by constant reminders of the wants of those who are powerless to help themselves. A good instance of this is the fact that it is only during the last two years that any decided action was taken in regard to establishing a hospital for epileptics, and yet by constant agitation, appointment of committees, and special work in aid of that cause, the Governor of the Commonwealth in his last inaugural recommends that provision be made for such purpose. It seems to me that the same policy should be pursued in regard to furthering the cause of the chronic sick. The second method would be to enlist the sympathies of some philanthropic person of means, who should endow a hospital, or a ward or wards in connection with a general hospital. This has been done in Philadelphia, in a building consisting of three wards devoted entirely to the treatment of chronic and incurable cases. This building was the gift of a philanthropic citizen, who specified that the wards should be used for this particular class of cases.

I think that a word of commendation is due to the management of the institution at Tewksbury, for the great improvement in recent years, not only in wards constructed on modern lines, but also in better medical care and improved nursing system now existing at the Tewksbury State Hospital.

Dr. Mason: It has seemed to me for many years that there was no better field open to the rich philanthropist, in which to perpetuate his name, than to endow a hospital for the incurables in Boston. Almost every week a case comes up that does not want to go to the poorhouse, and should not go there; and it is extremely difficult to find a place for them, especially the males. The small homes spoken of take but a small proportion of the deserving cases. Last year, I wanted to get a boy with cardiac disease, who was totally unable to take care of himself, into some place where he could die in comparative comfort, and it took four or five months, I think. During that time, fortunately, the authorities at the City Hospital were able to allow him to remain. I have no doubt that many such cases are turning up in Boston every week, and it is greatly to be hoped that some endowed institution will before long be instituted.

Dr. Putnam: I think what the other gentlemen have said in favor of continued agitation is proper, and I wish we could put ourselves on record every year as making an appeal to the wealthy people to do what they can toward the establishment of hospitals of this sort.

There are one or two things to be said in regard to the present state of affairs. In the first place, I think we do not want to remove the pressure on the people to make provision for themselves as far as they can. Many people are only too willing to throw themselves on any one who is willing to take care of them.

As regards the matter of the city and the poorhouses, it should be said that another way is opening for the city to do a good thing in the line of hospitals, and that is in placing them within reach, and establishing a good staff of visiting physicians. It is true that patients in hospitals soon learn whether they are receiving first-rate medical attention, and also that, when they have come to believe they are getting first-class treatment, they no longer look upon the hospital as an institution for paupers, but rather as a place where people go to receive the best care during their illness; and when they have once come to regard it in this light they care very little if it be in any way connected with the poorhouse.

Dr. Jeffries: I think it is extremely desirable that we should have something of the kind. In my own dispensary practice I am constantly meeting a large number of males who are crippled, more or less utterly helpless, for whom I cannot find any provision. It has always seemed to me that quite a number die from starvation.

Dr. Cutler: In the Old Men's Home and Old Women's Home, with both of which institutions I had something to do, it was not the custom to take in patients who were sick. The person must have a certain amount of health to be admitted. There was an age limit and a health limit.

Dr. Knapp: I did not mean to overlook the provision the City Hospital makes for chronic cases, but that is necessarily limited, and, furthermore, I know there are many cases which have no settlement.

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THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

Stated Meeting, March 10, 1892, W. P. Northrup, M.D., Chairman.

EMBOLISMAL APOPLEXY IN A BOY OF TWELVE YEARS.

The case was reported by Dr. Lewis Smith. The boy had had rheumatism, but there was no cardiac murmur. The disease is rare at this age.

EMPYEMA IN CHILDHOOD: IS IT EVER PRIMARY? ITS RELATIONS TO PNEUMONIA AND TO PLEURISY WITH SEROUS EFFUSION.

Dr. Henry Koplik read a paper on this subject. The etiology of pleurisies, both serous and sero-purulent, has been cleared up in many respects during the last decade, chiefly through bacterioscopic science. We know that children may develop an effusion in the chest not as the result of constitutional causes alone, but of causes to which we also trace the development of pneumonia.

An estimate of an effusion as serous or purulent from simple inspection of the fluid without the microscope is highly unsatisfactory, and may lead to grave error in diagnosis and treatment. Children are prone to develop sudden effusions in the pleural cavity, and we are struck with the overwhelming frequency with which such effusion is purulent. It often happens that a clear, serous-looking effusion changes to a purulent one. This, however, is apparent rather than real. This we now know to be erroneous. All exudations apparently serous at first which subsequently become purulent do so from causes independent of external interference but inherent in themselves. Such a serous exudation, if examined microscopically, will be found to contain not only leucocytes and blood-cells but pus-producing micro-organisms. In children, acute exudations without micro-organisms are the exception. Such fluid is but one step removed from actual pus. The custom of refraining from informing ourselves as to the character of fluid in the chest by puncture for fear of contaminating that fluid is untenable.

Another point of importance is the question as to whether in children empyema may be primary; that is, whether it may occur without any connection with external infection or processes in the lung. While cases have been reported in which no other diseased condition was detected upon autopsy, they are extreme rareties, so much so that the writer in a large experience has never seen one.

Can the effusion be purulent from the outset? Undoubtedly it may be and frequently is so. The connection between pleurisy and disease of the lung is thus seen to be very close. It often happens that the illness begins with high temperature and all the symptoms of pneumonia, but after a few days the condition changes, fluid is detected in the pleura, giving the impression that an error in diagnosis has been made. In such cases, microscopical examination shows the same germ in the pus from the pleural cavity as is found in the lung, — the pneumococcus of Fränkel. The tendency of this germ to cause suppuration is well known, and it is found in other complications of pneumonia marked by pus, as meningitis. Its presence in empyema renders the close relationship of that disease to pneumonia very certain. They probably invade the pleura through the sub-pleural lymph spaces.

There are other exudations which still cause discussion, in which we do not find the pneumococcus but other germs of less marked selective tendencies, as the streptococcus and staphylococcus. There is reason to believe that these are also metapneumonic though the specific germ does not appear.

There are other cases complicating the secondary pneumonia and occurring without pneumonia in the infectious diseases. These effusions usually show the presence of the streptococcus.

THE DIAGNOSIS OF EMPYEMA,

was the subject of a paper by DR. S. W. BRANNAN.

As symptoms are obscure the diagnosis must rest chiefly on physical signs. It is easy when the classical signs are present — immobility of the affected side, loss of vocal fremitus, flatness on percussion, and diminished respiratory sounds. In young children, however, these signs are rarely distinct. There may be no distention of the side whatever, and vocal fremitus, even if it can be obtained, is of no significance. Signs obtained by auscultation are often difficult to interpret. The normal respiratory sounds are so loud and the pleural cavity so small, that a considerable collection of fluid may cause but little change. Displacement of the apex beat is a sign of the greatest value. It is caused by no other condition. The two most constant signs are percussion, dulness and displaced apex beat. Exploratory puncture affords the most positive and in many cases, the only certain evidence of fluid. As to the character of the fluid, symptoms and signs are very uncertain guides. The needle is the only sure test. Pleurisy following pneumonia or complicating the infectious diseases and traumatic pleurisy is apt to be purulent. Though the needle often fails to obtain fluid when present, its use when the fluid does not quickly disappear, should never be omitted.

It has been alleged by Baccelli that whispered voice is always present when the effusion is purely serous, but absent when sero-purulent or purulent. This is explained on the ground that sound is more readily transmitted by a homogeneous medium like serum. The certainty of this sign is quite doubtful.

OPERATION FOR EMPYEMA,

was considered by DR. J. H. RIPLEY, in a brief paper.

Operation should be performed as soon as a diagnosis has been made. Unless the amount of fluid is very great or the symptoms are urgent, a delay of a few days will do no harm. The location of an incision must depend largely upon the focal conditions. It may usually be made in the seventh intercostal space below the angle of the scapula. An incision an inch or more in length should be made down to the costal pleura, through which a small opening should be made.

Through this a director should be passed and the incision enlarged with a blunt-pointed bistoury. A drainage-tube of large size should then be passed several inches into the cavity, with a safety-pin attached to the outer end to prevent its slipping out of sight. If there is not sufficient space for the tube between the ribs, a portion should be removed sub-periosteally. The wound should be dressed with oakum, which should be changed every day.

EXPANSION OF THE LUNGS IN CASES TREATED BY INCISIONAL DRAINAGE,

was discussed by DR. J. WEST ROOSEVELT.

The idea that fluid in the chest causes compression of the lung has been completely disproved. The lung tends to retract from the chest wall whenever fluid or air is present in the pleural cavity. It becomes retracted and condensed, but is compressed only when the amount of fluid is very large. Compression can only occur when the elastic recoil of the lung has been destroyed. Expansion of the lung to fill its normal position almost invariably follows early operation performed at the lowest part of the cavity where drainage can be free. The earlier the operation when pus is known to be present the better. The prognosis is far better with the chest full of air than with the chest full of pus.

Expansion is aided by the action of the other lung, especially when the glottis is closed as in coughing. The air is forced by the sound lung into the contracted lung during expiration, and expansion will be seen at that time rather than during inspiration. Granulation tissue, by contracting, also aids in drawing the lung out to the chest wall.

Removal of sufficient rib to permit drainage is perfectly proper. Removal of rib for the purpose of causing contraction of the chest wall is almost criminal. It should not contract, and can only do so by interfering with the lung and obliterating space that the lung requires, and if properly managed, would undoubtedly occupy.

Dr. Koplik said that while primary empyema was a possibility, it was very rare.

Dr. Ripley said that in a child dulness was not always present, and but little fluid was required to produce bronchial breathing. Displacement of the apex was a valuable sign, but it was very difficult in some cases to detect the apex beat.

Dr. Andrew H. Smith had often found a line of egophony just above the fluid, and regarded it as a valuable sign. He said that the lung in the empyema was contracted not compressed.

Dr. Holt referred to the absence of râles and friction sounds, where they had previously been heard, as a very valuable sign of fluid.

Dr. Ewart also referred to silence, where there had before been crepitations, as an important sign. He did not believe that Baccelli's sign was to be relied upon. A high or oscillating temperature, associated with a persistent dry cough for a long time, was a suspicious symptom.

Dr. Roosevelt said that aspiration with the idea of expanding the lung by the suction was foolish. At the best, it is a waste of time.

Dr. Caillé objected to irrigation on the ground that it breaks up the adhesions.

Dr. Berg advocated exsection of a rib to aid drainage.

Dr. Winters believed that most undiagnosticated cases died from exhaustion or tuberculosis, but encysted cases often recovered. He had never seen a case of pure serum changed to pus. Serous effusions were not uncommon in connection with the infectious diseases. He had frequently seen cases of empyema in which a diagnosis of pneumonia had been made at the outset. He had formerly thought that an error in diagnosis had been made, but now believes that that was the usual way in which empyema developed.

Recent Literature.

The Treatment of Typhoid Fever, and Reports of Fifty-five Consecutive Cases with only One Death. By James Barr, M.D., Physician to the Northern Hospital, Liverpool, etc. Introduction by W. T. Gairdner, M.D., LL.D., etc. London: H. K. Lewis. 1892.

The author dedicates this book, which follows a paper published a year or more ago in one of the London medical weeklies, to his former teacher, Professor W. T. Gairdner of Glasgow. Professor Gairdner contributes an introduction, in which he says: "If heat-abstraction is an object of so great importance, why not do it continuously, but in such a way as shall cause no distress at the time, shall avoid violent transitions, and allow of natural rest, and, as far as possible, a normal periodicity of all the functions, undisturbed by the perpetual interference at all hours of the day and night, which characterized the earlier antipyretic methods?"

To this the disciples of Brand would probably reply: But, it is not the abstraction of heat we are now after, it is the action on the nervous centres; and to secure this, things must be made lively for the patient, cold-tubbing must be kept up briskly as often as the temperature rises above a certain point, whether by day or night.

Whatever the cause, whether accident or the therapeutic effect of his use of continuous immersion of severe cases in water, Dr. Barr has had excellent results in a series of seventy-one successive cases, there having been only two deaths. Of course, the number is too small for positive conclusions. There are two things, however, which deserve notice, the continuous bath was only used in severe cases, and the patients, apparently, were not thus treated for typhoid fever and pronounced cured, before the diagnosis could be fairly established.

His rule is as follows: As long as the temperature in the patient's mouth is over 100° F. the temperature of the tank need not rise above 90° to 93° F., but as the body temperature approaches the normal so should the tank temperature. One patient was immersed thirty-one days. Some of the cases which recovered were very serious cases.

The book is an octavo of about 200 pages. Those interested in the treatment of typhoid fever (and what practitioner is not!) should read it, and so should the admirers of Brand's method.

Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Octavo, pp. i–viii, 13–263. With illustrations. Philadelphia: Lea Brothers & Co. 1892.

The demand for a book that would give a summary of the best of the methods of bacteriological research has been increasing for some years, and it has been partially supplied by various manuals published during the last year. None of these have seemed to be just what was needed for laboratory teaching or a guide for the single worker, until the publication of Dr. Abbott's work. This seems to furnish very nearly what is required for those to whom the German text-books are not accessible, and for laboratory use with personal instruction added will be exceedingly useful. That some such summary of methods is needed is shown by the increase of attention devoted to the subject of which it treats, which is obtaining a foothold in the required courses of the best medical schools.

The feature of suggesting work to be carried out by the beginner, adds to the value of the book for instruction. H. C. E.

Physical Diagnosis and Practical Urinalysis. By John E. Clark, M.D. Detroit: The Illustrated Medical Journal Company. 1890.

This little book suffers, as all such books must, from the author's desire to condense his material into too small a space. It is too much to expect that the symptoms of any important disease can be adequately described in a dozen lines. Criticism should be directed rather to the plan of the book than to the way in which the author has carried this out.

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RECENT RESEARCHES ON BILIARY INFECTIONS.[1]

The primary acute biliary infections are divided into such as are spontaneous and protopathic (supervening without previous mechanical lesion), and the deuteropathic, which are constituted by biliary infections accompanying (as a part of) and complicating general infections. The bond which unites them all is the etiological bond of infection.

Primary acute biliary infection is mild, moderate or grave:

(1) The mild form is the catarrhal icterus, with which nearly every one is familiar from his own experience.

(2) The second form of medium intensity is characterized by more violent symptoms, by the relapsing type of the fever, by the albuminuria, the hæmorrhages and the augmentation of the volume of the liver and spleen. It is, in fact, the febrile icteroid affection so well described by Weil, in 1886, though previously known to Mathieu and Lancereaux, and made the subject of a monograph by the latter in the *Revue de Médecine*, 1882. Since the publication of Weil, much attention has been called to this form of icterus by the papers of Goldschmidt, Hueber, Fiedler, Kirchner, and other German observers. Mathieu, who also claims priority over Weil in the discovery and description of this disease, which seems to have been improperly named after the German pathologist, thus comments on the pathogeny of this affection (the remark equally applies to other biliary infections): "We must admit the possibility of the ascension of pathogenic agents from the intestine into the bile-passages, and their subsequent penetration into the blood, just as the bacteria of suppuration may ascend the ureters from the bladder and invade the renal pelvis, the calices and the uriniferous tubules."

(3) Lastly, we have the grave form of acute biliary infection, which is characterized by the intensity of the *nervous* symptoms, by the hæmorrhages, the intense prostration, and the profundity and extent of the hepatic lesions, which led Rokitansky, in 1843, to designate it as *acute yellow atrophy of the liver.* This is the grave essential icterus of Ozanam, the typhoid icterus of Lebert, the pernicious icterus of Wunderlich, the essential hæmorrhagic icterus of Monneret, etc. Frerichs, in his "Clinical Treatise" (1858), gives a good description of this disease; but Budd, thirteen years before (1845), in his then classical work, described it nearly as well under the title, "Fatal Jaundice."

This grave infection, according to Dupré, may appear as an isolated affection, independent of any anterior lesion of the liver, or it may terminate a previous hepatic affection (cirrhosis, lithiasis, cancer); and it is possible for the milder forms of jaundice to pass, by an insensible transition, into this grave and fatal form.

We have not space in this review for a consideration of the deuteropathic forms of biliary infections, or even of the chronic forms. The pathogenic agents of the biliary infections are multiple; in fact, there is not one infectious germ but may find in the biliary passages or gland-substance favorable conditions for its depredations. Perhaps more frequently the staphylococci and the streptococci of abscesses and of suppuration — the septicæmic cocci — are concerned in the infection.

We do not yet know precisely what conditions annihilate the natural resistance of the bile and the gall-ducts to septic agents, so that even simple catarrhal states of the duodenum, with their entire bacterial outfit, may be propagated upward into the liver. The comparison with the urinary bladder holds good: in healthy states, infection by a foul catheter is not easily conveyed, while in morbid states (stricture, hypertrophied prostate) a microbe invasion is almost certain to follow the introduction of a dirty catheter.

It is less difficult to understand the infection of the liver by specific bacteria during the prevalence of exhaustive diseases. In numerous instances on record, where in the course of typhoid fever the liver has become secondarily infected by migration of the Klebs-Eberth bacillus from the duodenum, the bile and portions of the hepatic parenchyma have been examined after death, for microbes, the typhoid bacillus has been identified by its form and its reactions to staining-fluids, has been cultivated, and inoculated in animals with results sufficiently confirmatory of the previous identification.

Chronic biliary infections lead to hypertrophic cirrhosis. Into this subject we have not now time to enter. There is a common form whose onset is spontaneous, and whose direct causation is little understood; and a secondary hypertrophic cirrhosis following biliary obstructions, in which the infectious element plays a certain part. After a variable time, the irritative process, whose seat is the biliary network, engenders angiocholitis and peri-angiocholitis with an enormous connective-tissue growth, whose final result is an atrophy of the glandular substance as complete as that which attends ordinary cirrhosis.

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[1] Concluded from No. 15, page 373.

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CAUSES OF DEATH IN ITALY FOR THE YEARS 1889 AND 1890.[1]

This very complete summary published by the Italian Minister of Agriculture, Industry and Commerce, contains the vital statistics of the Kingdom of Italy, so far as relates to the causes of death, in full for the year 1889, with a summary for the year 1890.

The estimated population for 1889 upon which all the ratio of mortality are based for that year, was 29,969,654.

The death-rate per 1,000 for 1889 was 25.63. From certain specified diseases the mortality was as follows, per 10,000 of the population:[2]

	1889.	1890.
From small-pox	4.5	2.4
" measles	4.6	4.8
" scarlet fever	2.2	2.5
" diphtheria	6.1	4.1
" whooping-cough	4.1	4.3
" typhoid fever	7.6	6.8
" malarial fevers[3]	5.4	5.2

The deaths from hydrophobia were 103 in 1887, 106 in 1888, 118 in 1889, and 75 in 1890.

	1889.	
Dysentery	1.9	per 1,000
Typhus fever	0.15	"
Puerperal fever and other maladies of parturition	2.04	"
General tuberculosis and phthisis pulmonalis	14.3	"

There were 3,113 deaths from pellagra.

The deaths from violence are very thoroughly classified, and amounted to 13,199 or 4.4 per 10.000 of the population, of which 3.4 were by accident, 0.49 by suicide, and 0.49 by homicide.

By occupations, the guardians of public funds, and soldiers, furnished the highest ratio of suicides, and farmers and weavers the least.

Statistics of duels are subject to careful record. Of these, there were 2,759 in the ten years ending with 1889, and 177 in 1890. Out of this whole number only 52 were attended with fatal results, or 1.7 per cent. The greatest number of duels were fought in the three summer months, and the least in November and December. The causes of duels were quarrels, insults, newspaper criticism (these furnish the greatest number), politics, intimidation, assaults and jokes. Military men, journalists, lawyers and students furnished the greatest number of duellists, and there were but very few physicians among the number.

Statistics of 1,089 hospitals are also presented, in which 339,873 patients were treated in 1887, and of 932 hospitals and 311,575 patients in 1888. The deaths in these hospitals were 40,683 in 1887 and 38,481 in 1888, of which number 365 in 1887 and 489 in 1888 were nearly dead at the time of their admission. The most important causes of admission were as follows in the order of their greatest number: Malarial fevers, diseases of the trachea, larynx and bronchi, contusions and wounds, diarrhœal diseases, tubercular diseases, gastritis, abscess and skin diseases, pneumonia, pellagra, typhoid fever and fracture.

Some tables are also presented giving the ratio of mortality from different infectious diseases in other European countries.

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THE REGULATION OF MEDICAL EXPERT TESTIMONY.

At a meeting of the New York Society of Medical Jurisprudence and State Medicine, held April 14th, Dr. Benjamin Sachs read a paper on the subject "What the Law can do to mitigate the Evils of Medical Expert Testimony." As a consequence of experts being called in each case by interested parties, he said, the facts bearing on the case were never fully and impartially stated to the man who was expected to give a decisive opinion; and this was unjust both to the physician and to the law. As a remedy, he suggested that a standing commission of physicians and surgeons, selected from every department of profession, and, of course, including analytical chemists, should be appointed by the courts to serve on all cases, to which they could only be summoned by an order of court. To this board should be submitted all the testimony on which they were to give an opinion. At present, he went on to say, all expert testimony is verbal, and this was necessarily an evil, since a clever physician fully competent to answer the questions fairly and plainly stated, if unused to law courts and the prevailing system of cross-examination, might become so confused as to either contradict himself flatly or appear uncertain on the most vital points. The remedy for this was to compel all expert testimony to be submitted to the court and to the jury in writing.

Another evil mentioned, and one which it was suggested had been emphasized in recent trials, was that cross-examination of experts is largely made up of personal abuse, ridicule and purposely misleading questions and statements. The personality of the witness should have nothing to do with the case. The remedy suggested for verbal testimony would cover this. In conclusion, Dr. Sachs recommended that a committee from the Society, to consist equally of representatives from the several professions represented in it, should be appointed to confer as to the most feasible way of arranging for the establishment of such a board as he had mentioned.

Similar propositions have already fallen several times in this State and elsewhere upon the unpropitious ears of legislative committees. They will have very unusual good fortune if they get beyond a committee-room.

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[1] Statistica delle Cause di Morte in tutti i Comuni del Regno. Confronti con alcuni stati esteri. Anni 1889 e 1890. pp. xcvi, 182. Roma, 1891.

[2] The general death-rate is usually reckoned as a ratio per 1,000 and that from each disease per 10,000 of the living population.

[3] The highest ratio in 1889 from malarial fevers was, in Sardinia, 29.1, while it was of rare occurrence in the northern provinces of the kingdom.

MEDICAL NOTES.

United States Consuls on the Lookout for Typhus. — The Acting Secretary of the State has, by request of the Treasury Department, given instructions to United States consular officers in Russia to forward immediately special reports concerning the existence in their districts of typhus fever, using the cable when necessary.

Cholera in Asia Minor. — Under date of February 19th, the United States Commissioner writes that the epidemic of cholera has entirely disappeared from Turkey in Asia. He adds that the disease has not ceased by sanitary steps taken by the authorities, but on the contrary, has disappeared of itself.

Epidemic Dysentery of Japan. — Ogata has studied the epidemic dysentry which every year appears in Southern Japan, and has succeeded in separating and cultivating a short, small bacillus, which is probably the specific organism of the disease.

The Measles Bacillus. — It is reported by cable that Dr. Canon of the Moabit Hospital in Berlin, has demonstrated a specific bacillus of measles.

The Purification of Air. — Sir Douglas Galton states that the only way in which, so far as he has found, the removal of dirt and fog from a large volume of air required for ventilation has yet been practically effected, is by means of a wet screen, as used at the Western Infirmary, Glasgow. The air is here renewed six times in an hour, and is first filtered and washed by being passed through a screen of cords formed of horse-hair and hemp, which is kept continually wet, and which effectually removes all dust and soot from the air. An automatic flushing tank discharges twenty gallons of water over the screen every hour, and thus washes away any substances which have adhered to the screen. The action of such a screen, it is said, removes every vestige of fog, renders the air beautifully clear and bright, and might be easily applied to private houses.

Denholm *vs.* Tait. — This libel action against Mr. Lawson Tait, which has recently come before an English court, has created much comment among medical men in England. The particulars are briefly as follows: Dr. Denholm had attended a patient for several years for fibroid tumor. The Apostoli treatment by electrolysis had been tried and on one occasion an accident occurred with the electrodes which resulted in a vesico-vaginal fistula. Finally, Mr. Tait was consulted, who removed a tumor by abdominal section which weighed twelve pounds. The patient died within forty-eight hours. Mr. Tait wrote a letter expressing the opinion that death was attributable to hæmorrhage due to sloughing, as a result of the electrical treatment. Dr. Denholm, hearing of the existence of this letter, obtained a post-mortem, the results of which seem to be more or less doubtful, but were stated to show that death was caused by peritonitis. A suit for libel was begun, and argued before a jury, but before it was finished the case was settled out of court and withdrawn.

BOSTON AND NEW ENGLAND.

Death-Rate in Boston for March.—There were 995 deaths in the city during the month of March as against 813 for the corresponding month last year, making the death-rate 26. The deaths due to diphtheria were 35, scarlet fever 28, consumption 114, bronchitis 55, pneumonia 119.

The Carney Hospital Appropriation appears to have aroused much excitement at the State House. In spite of the failure of the Committee on Public Charitable Institutions to report the bill, the house took it up and passed an appropriation of $10,000. It now waits the action of the senate. This amount has been given in the two preceding years.

The Boston Public Institutions for the Insane.—The committee appointed by the Mayor to investigate certain of the public institutions for the city, have recently submitted their report. The committee consists of Frank Morison, Thomas F. Ring, Annette P. Rogers, Chas. P. Putnam, Elizabeth M. McCarthy, Elizabeth G. Evans and Morton Prince. With regard to the condition of the quarters provided for the insane at South Boston and Austin Farm, the commission says that both are overcrowded, while the condition of things in South Boston is very bad. The recommendations are, that the chronic insane be located upon Austin Farm, additional buildings being erected and additional land acquired. The Insane Hospital at South Boston is an old building, not fit for its present use, and it is inexpedient to attempt to re-construct it, but it would seem best to continue to use it until the city is ready to build a hospital on a piece of ground quite separate from Austin Farm, and suitable for the class of patients for which it is intended. The commission is inclined to believe that for the present a hospital for 150 beds, including a building for fifty excited patients, would answer all immediate demands. More land for the erection of this hospital should be purchased. For this purpose appropriations aggregating $273,000 are recommended. A further recommendation is made of an additional dormitory at Austin Farm. The committee are in favor of a plan to use the Austin Farm for acute cases, altering the present buildings and adding others for the purpose of establishing a true hospital, and purchasing a large tract of land, two hundred acres or more, in a rural district, on which to build the asylum for chronic insane. The cost of such a place would be $307,000. This allows for fifty-eight more patients than the first plan. Either of these plans vacates the South Boston Lunatic Asylum, which is much needed for the additional cells to the house of correction. In conclusion the commission comments severely on the manner in which the city of Boston has of late years provided for its insane. Other recommendations in the report are a separate parental school, as requested by the school committee, and an appropriation of $90,000 for six hundred new cells at the House of Industry at Deer Island. The Mayor, in transmitting the report to the Aldermen, says, "As to the choice between the alternative plans for improved accommodations for the insane suggested by the committee, my personal preference would be for that plan which contemplates buying a large area of land on the outskirts of the city, or without its limits, rather than to get a smaller area in the immediate vicinity of Austin Farm. I would suggest that I be authorized to advertise for land, situated within fifteen miles of the City Hall, and convenient of access from the steam railroads. If in this way an area of two hundred acres of land could be obtained at a reasonable price, we should be, for the first time in our municipal history, in a condition to supply the wants of the present and the probable needs of the future, in respect to the proper care and treatment of the insane."

The Massachusetts College of Pharmacy. — R. W. Greenleaf, M.D., has been appointed Professor of Materia Medica and Botany, in place of Dr. C. P. Pengra, deceased. G. F. H. Markoe, Ph.C., has been appointed Professor of Theory and Practice of Pharmacy, *vice* E. L. Patch, Ph.C., resigned.

Sea-Shore Home for Infants.— The inhabitants of our suburban towns seem to be most energetically opposed to having this institution as a neighbor. Two years ago it was voted out of Winthrop. Recently, all arrangements were made to transfer it to Quincy this spring, but now the citizens of Quincy have declined to receive it. The only place in which it is not likely to arouse opposition appears to be on one of the islands in the harbor.

Physiology in the Public Schools. — In the report of the Massachusetts State Board of Education recently issued, Mr. G. H. Martin comments upon the teaching of physiology and hygiene under the law of 1885. This law had special reference to the effects of stimulants and narcotics upon the human system, and the instruction was expected by some of the promoters of the law to inculcate in the youthful mind an abhorrence of intoxicating liquors. Mr. Martin arrives among others, at the following conclusions: The outcome in accurate knowledge resulting from much of the work done is meagre and out of proportion to the time spent upon it. Many false impressions are left in the minds of the students, physiological details are not suited to young children. However defective the instruction may be, the sentiment of the schools is sound — the conviction that alcohol and tobacco are bad things to use seems universal, where exaggerated notions of the effects of stimulants have been acquired, there is danger of a reaction of sentiment in the light of after-knowledge. Among the suggestions which he makes are, that teachers prepare this subject with more care and see that their statements are true, and by frequent tests ascertain that their teaching is properly comprehended, and that the use of text-books should be limited to the older pupils; the moral and social effects of the abuse of intoxicants should be made more prominent, and abstinence be advised for other reasons than such as concern only the body.

NEW YORK.

Deaths for the Week.— During the week ending April 9th there were 983 deaths reported in the city, an increase of 109 over the previous week. No deaths were caused by small-pox, but this disease, through a failure to report the cases, either from negligence or through inability to diagnosticate the disease by the medical attendants, or from other causes, increased to some extent. On April 11th it was stated that since January 1st, 77 cases of small-pox with 10 deaths had been reported. Since then, a few other cases have been reported. During the past week three or four new cases of typhus fever have been reported, the most of them among patients who applied for admission to the city hospitals.

Management of Hospitals at North Brother Island. — At a meeting of the Board of Health held April 12th, the following resolution was adopted: "*Resolved,* That upon due consideration of the testimony taken at an investigation in respect to the management of Dr. F. R. Percival, of the Riverside Hospital, at North Brother Island, in connection with typhus fever cases, this Board concludes that the persons sick with typhus fever have been properly treated and cared for, and that no further action is necessary in the premises at present." Soon after the investigation referred to was commenced, Dr. Percival was removed from the charge of the typhus fever cases and transferred to the charge of patients ill with other contagious diseases at North Brother Island, and he is still on duty in the latter position.

A Case of Small-Pox in a General Hospital. — Through the failure of an ambulance surgeon of the Seney Hospital to recognize the true nature of the case, a patient suffering from small-pox was on the night of April 13th placed in a ward of the hospital which contained fifty or sixty other patients; and the fact of his having small-pox was not discovered until the following day, when there naturally resulted a considerable panic in the ward.

Suicide under Puerperal Mania. — A young married lady, who was sent to New York from Charleston, S. C., to be confined, on account of special difficulties in her case, recently threw herself from a window on the third floor of a private hospital while suffering from puerperal mania, and was instantly killed by fracturing her skull.

The West Indies at the Pan-American Congress. — Dr. Wm. F. Hutchinson has arrived from the West Indies, where for the past two months he has been exciting interest among medical men in the Pan-American Congress, to be held in Washington in September next. He visited St. Thomas, Santa Cruz, St. Martins, St. Kitts, Antigua, Trinidad and Jamaica, and in every place he was assured that the West Indies could be well represented at the gathering.

Miscellany.

THE VENICE CONFERENCE.

There has recently been in session in Venice, a congress composed of delegates from fourteen European powers, with the object of establishing international sanitary control of the Suez Canal, in order to prevent, as far as possible, the importation of cholera into Europe. Although the official report has not yet been published, it is understood that all ships coming through the Canal will be classified in three categories.[1] In the first are ships which have no shadow of suspicion, these will pass through the canal without hindrance. The second category will consist of ships that have sailed from a port where cholera prevails, even though there may not be any case of cholera for several days previous to the departure of the ship. These suspected vessels will simply be disinfected. Very powerful and large disinfecting stations are to be established, and bedding and clothes will be purified by superheated steam under pressure. The third category consists of ships in which cases of cholera have occurred during the voyage. These ships will be more thoroughly disinfected and a delay not to exceed five days may be demanded. It is proposed to establish a sanitary department at Suez and to modify the sanitary council of Alexandria. Four medical men will be permanently on duty at Suez. Expenses are to be paid by a tax of twenty cents on each passenger. The English proposition that contaminated vessels should be allowed to pass through the canal on condition that they had no communication with the shore and that they were bound to an English port, was rejected. Ten nationalities have signed the agreement, delegates of the other four having referred the matter to their respective governments.

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A MONUMENT TO THE LATE SAMUEL DAVID GROSS.

The friends and admirers of Dr. Gross have desired to erect to his memory such a monument as will commemorate his life and character.

To further this most praiseworthy object, the American Surgical Association, at its last session, adopted the following resolution:

> "*Resolved:* That the President be empowered to appoint a committee with authority to confer with the friends and admirers of the late Prof. Samuel D. Gross, and with the *profession at large*, for the initiation of a movement on the part of the Association, having for its object the erection of a monument to Dr. Gross in the City of Washington, D. C."

The subjoined committee from the Association has been appointed, with authority to confer with the *profession at large*, and solicit subscriptions.

It is not the purpose of the American Surgical Association to claim the honor of erecting this monument to the memory of one of its most distinguished Fellows; but rather is its intention to *initiate* a movement in which the entire American profession should feel an equal interest: because Dr. Gross was of no exclusive faction, but a leading member of the whole profession.

Hence it is, that each member of the committee is instructed to appoint sub-committees in his own State, irrespective of fellowship in this, or any other Association, which sub-committees will aid him in the collection of contributions to the general fund. Any contributions may be sent to Dr. Jno B. Roberts, 1627 Walnut Street, Philadelphia. He is the Treasurer of the Association, and will receipt for the same, and from time to time acknowledge subscriptions through the columns of the *Journal of the American Medical Association.* In the event of a failure to collect a sum sufficient to complete the monument, the contributions will all be returned to the subscribers.

J. R. Weist, M.D., *Chairman.*

C. H. Mastin, M.D., *Secretary.*

Committee. — Drs. Wm. T. Briggs, Tennessee; Levi C. Lane, California; Solon Marks, Wisconsin; L. S. Pilcher and A. Vanderveer, New York; James McCann, D. Hayes Agnew and J. Ewing Mears, Pennsylvania; S. H. Weeks, Maine; Hunter McGuire, Virginia; L. McLane Tiffany, Maryland; N. P. Dandridge, Ohio; H. H. Mudd, Missouri; J. Collins Warren, Massachusetts; B. A. Watson, New Jersey; D. W. Yandell, Kentucky; N. Senn, Illinois; Chas. B. Nancrede, Michigan; W. H. Carmalt, Connecticut.

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APPENDICITIS.

Dr. Charles McBurney lately discussed six cases of appendicitis before the New York Academy of Medicine,[1] and reached the following conclusions:

"The feebleness of old age, unusual obesity, complicating diseases, and unmanageable over-distention, may justify the surgeon in refusing to offer with the aid of the knife the relief perhaps most urgently called for. Probably the most conservative practitioner, knowing the lesion which existed in R. W.'s case would not advise, under similar circumstances, the trusting of his patient's life to any medical measure known to science. The extraordinarily great variety in the signs and lesions of the disease under discussion will probably prevent us from ever formulating a set of rules such as some writers delight in referring to as routine practice. It will, however, always be good routine practice to study critically every individual case of a disease which belongs to a class that often enough destroys life, and to be willing to carefully weigh the value of experience even if contributed by those who observe from a different standpoint.

"Let us remember that it is not so very long ago, quite within the clear recollection of many of us, that we were taught that idiopathic peritonitis was a common enough disease, and that peritonitis in general was to be treated by medical measures only. Since then we have added to our store of knowledge, first by one observer and then by another, much valuable information in regard to the causes of peritonitis, and the possibility of attacking these successfully. The surgeons, and chiefly those of America, deserve the credit of having added most largely to our knowledge of appendicitis, the most frequent of all causes of peritonitis in the male. To them chiefly belongs the credit of having demonstrated the practicability and safety of treating this disease by the incomparable method of removing its cause. If we would accomplish the most by our discussions on this topic, then physicians and surgeons must join hands, the physicians accepting the fact that the surgeon does not always wish to operate, and the surgeon gladly stepping aside when he sees that success can be attained by his colleague's gentler methods.

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[1] Lancet, April 2d.

[1] Medical Record, April 16, 1892, p. 421.

"Five years ago we stood a little timidly on the edge of the new country, determined to go on; but dreading the discovery of hidden dangers, perhaps of insuperable difficulties. To-day I do not hesitate to say that never in the history of surgery has a major operation so soon established itself in so strong a position, so well supported by sound knowledge and unimpeachable facts as the timely operation for appendicitis."

Dr. McBurney seems scarcely conscious that the impulse to explore this new country, upon the edge of which he and others stood timidly five years ago, came from a physician!

DR. HENRY INGERSOLL BOWDITCH.

The following abstracts are from an obituary of Dr. H. I. Bowditch by Dr. W. T. Gairdner, of Glasgow, which appeared in the *Edinburgh Medical Journal* of April:

> Although the number of those who made the acquaintance of this distinguished physician on his visit to this country in 1861 must now be sadly diminished, it may be permitted to us in this journal to offer a brief tribute to his memory, from one who is perhaps the only hospital physician now in a position to do so among those who gave a hearty greeting to Dr. Bowditch in the Edinburgh Royal Infirmary more than thirty years ago. The writer was thoroughly attracted at that time, not only by what appeared to him an eminently noble personality, but also by the narrative of successful results in the treatment of pleuritic effusions by the method of what was then called *Suction*, although under the more pretentious name of *Aspiration* it came, many years later, to be made a *boom* in Paris without the slightest reference to the first employment of the method in America. Dr Bowditch always attributed the invention of this method and the appropriate instrument to Dr. Morrill Wyman of Cambridge, Mass., who performed his first thoracentesis by suction in 1850. But neither Dr. Wyman nor Dr. Bowditch seem to have cared to put in a claim of priority, although, at the date of a most interesting and lucid letter to the author of this notice, bearing date May 22, 1862, no fewer than 160 operations had been performed upon 85 persons, and with remarkably favorable results. Dr. Bowditch was even then, although in the prime of life and vigor, by no means a young man, and the steady, persistent, and indeed brilliant work he had done in connection with this subject deserved a better fate than to be lost sight of amid the struggles for *eclat* of a young French hospital physician not at all careful as to what had been done before him. Dr. Bowditch made converts in Edinburgh in those days, and at least two of the hospital staff began to use thoracentesis by suction from that time onwards. One of the two is the writer of these lines, and Dr. Bowditch has been known to say that Dr. Budd of King's College, London, and the present writer were the first in this country to adopt the improved procedure. But Dr. Bowditch, though a most eminent thoracentesist, was far more than this. He was a most admirable and cultured physician in all respects, and not only showed in diagnosis and in treatment a wide and well-ordered knowledge and a cultivated judgment, but he appreciated also as comparatively few then did, the importance of the preventive service of humanity in its relations to the curative. The researches which he first brought before the public in 1862 into the connection of moisture in subsoils, and the effect of drainage, or the want of it, on the local distribution of phthisis in Massachusetts, became stimulus to further fruitful researches, which in England were undertaken at the instance of the medical officer of the Privy Council, by Dr. George Buchanan of London, now the chief of the medical service under the Local Government Board. Had Dr. Bowditch done nothing else but these two things, his merit would still have been great; but in fact his was a most busy and valuable life, from many different points of view.

THERAPEUTIC NOTES.

A Delicate Test for Albumin in the Urine.—Spiegler[1] suggests the following formula for the discovery of albumin in the urine as being the most delicate test we possess:

℞ Hydrarg. chlor. corrosiv.	8 parts.
Acid. tartar	4 parts.
Aq. dest.	200 parts.
Sacch. alb.	20 parts. M.

The test-tube is filled one-third with the reagent. The urine is filtered and made strongly acid with acetic acid. It is then allowed to flow down the side of the tube, drop by drop, until it lies in a layer over the reagent. If albumin is present, a sharp white ring is seen lying between the two layers of fluid. If it is necessary to test heavy diabetic urine, more sugar may be added to the reagent, in order to raise its specific gravity. It is necessary to decompose any carbonate that may be present, in order that it may not form a precipitate with the sublimate. But the precipitate may be recognized by the fact that when shaking the liquid the apparently caseous precipitate will disappear and the fluid become clear.

Camphorated Oil.—Taussia[2] states that he had used camphorated oil with good results in many cases of influenza in which collapse from cardiac paralysis appeared to be imminent, and in pneumonia, typhoid, etc. He gave the drug dissolved in oil of sweet almonds in the strength of one to two, and sometimes four to five per cent. Essence of peppermint was useful in disguising the taste. Liberal doses (two to four grammes *per diem*) were always given; the remedy was always well borne, and no disagreeable effects were observed. The remedy should be given before the patient is *in extremis*, when an active stimulant and expectorant is required, and when it is not contra-indicated by the existence of great cerebral excitement. In cases of pneumonia, broncho-pneumonia, and typhoid fever, the drug produced increase of arterial pressure, freer expectoration, and a feeling of physical well-being which lasted a considerable time. Taussia insists that only the best Japanese camphor should be used, the artificial preparation having, according to him, no therapeutic value.

Correspondence.

BOARDING OUT THE INSANE.

Philadelphia, April 14, 1892.

Mr. Editor:— In your review, April 7th, of the Thirteenth Annual Report of the Massachusetts State Board of Lunacy and Charity, you are good enough to refer with favor to my paper upon "Lunacy Administration in Scotland"; but you remark, that, although I "touch upon the improved care received in the homes of such patients in this country" [the boarded-out insane], you "miss the warm advocacy of the measure and of its development in this country which my former reports and other contributions would lead you to expect."

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[1] Wiener klinische Wochenschift, January 14, 1892.

[2] British Medical Journal.

As many of my friends have made similar observations, I deem it proper to say that the State Board omitted to publish nearly all that part of my paper which spoke of the further application of the Scotch system in Massachusetts.

I have not changed my views regarding the care of the insane in private families.

It has never been my belief that the boarding-out system would relieve the lunatic hospitals and asylums to anything like the extent which some, unacquainted with the practical care of the insane, supposed possible; and it is my opinion that unless there is a change in the lunacy laws of Massachusetts, patients cannot be boarded out from the hospitals in greater numbers than the Board of Lunacy and Charity is now doing.

Although I am not now a resident of your State, I trust I may be permitted to say a few words upon this matter, for my former connection with the charities of the Commonwealth has acquainted me with their administration; besides other communities are interested in the family care of the insane.

The chief obstacle in the way of the boarding-out system in Massachusetts is, to my mind, the practice by overseers of the poor, of confining the insane in almshouses, more than 800 being so placed; and your characterization of that part of the Board's report dealing with poorhouses, as "the usual depressing chapter," is a truthful reflection.

There are, as I have stated elsewhere, only sixteen almshouses with lunatic wards, in Scotland, which can, by any possibility, be compared with Massachusetts almshouses; and in that country license is not granted for the care of less than sixteen lunatics in one almshouse, all of which establishments are subject to rigid rules made by the General Board of Lunacy, which has supervision over them. No patients suitable for family care are allowed to remain in Scotch poorhouses.

Were the same rules and restrictions to be applied in Massachusetts that are in operation in Scotland, there would be many to add to the boarding-out list. The 450 patients who are now in almshouses having less than sixteen insane inmates could nearly all be provided for in this manner, as could two-thirds (and probably more) of those resident in almshouses of greater capacity, making, with those now boarded in various places by overseers of the poor, a total of nearly 675, which, if added to those in private families under the care of the Board of Lunacy and Charity, would swell the list to nearly or quite 850, a showing which by no means suffers when all the conditions are kept in mind. Were the feeble-minded included, as they are in Scotland, the aggregate would be considerably larger.

As the system of treating lunatics in Scotland has certain prominent features considered of great value, I believe so far as circumstances will permit, advancement in this country should be along the lines found advantageous there. No lunatic should be kept in a local almshouse who can be provided for in a private family, and the indigent insane should be wards of the State, supported at the expense of the Commonwealth. With such arrangements the boarding-out system could be very much extended, and the lot of the pauper insane greatly improved. Family care of the insane has a fixed place in Scotland; and it should be made a positive factor in the lunacy administration of every State having, like Massachusetts, a rural population capable of furnishing a sufficient number of suitable guardians.

In any event, the administration of the system should be in the hands of a staff of experienced physicians, who, under the supervision of the Central Board, should devote their whole time to the work.

Very respectfully,
A. R. Moulton, M.D.

The *British Medical Journal* expresses discontent with the assurances that the practice of spraying arsenic on American fruit-trees to kill insect life is harmless to the fruit, and demands a further official inquiry on the subject.

METEOROLOGICAL RECORD,

For the week ending April 9, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 3	29.96	65	77	53	73	33	53	S.W.	W.	13	10	C.	O.	
M.. 4	30.00	59	66	52	57	80	68	E.	S.E.	11	8	O.	O.	.04
T.. 5	29.92	50	57	42	90	92	91	N.W.	E.	9	4	O.	O.	
W. 6	29.78	58	74	42	68	49	58	W.	W.	13	18	O.	C.	
T.. 7	29.88	52	66	38	50	47	48	W.	W.	16	10	C.	O.	
F.. 8	29.66	57	66	45	55	49	52	W.	S.	3	8	O.	F.	
S.. 9	29.64	47	54	40	60	52	56	W.	W.	15	19	O.	C.	.04
☞	29.83	55	66	45	65	57	61			11	11			.01

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 9, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	983	399	16.61	23.10	3.96	1.65	4.84
Chicago . . .	1,099,850	—	—	—	—	—	—	—
Philadelphia .	1,046,964	—	—	—	—	—	—	—
Brooklyn . .	806,343	416	165	12.40	22.80	1.92	.72	6.96
St. Louis . . .	451,770	193	57	10.26	10.26	1.08	4.86	2.16
Boston . . .	448,477	231	75	9.08	22.79	3.01	—	4.30
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	122	49	8.20	10.66	—	—	6.56
Cleveland . .	262,000	95	49	9.45	12.60	1.05	2.10	4.20
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	98	40	7.14	14.28	2.04	2.04	3.06
Milwaukee . .	240,000	80	31	28.75	16.25	1.25	3.75	18.75
Washington .	230,392	97	34	12.36	16.48	5.15	—	3.09
Nashville . .	76,168	32	10	15.65	21.91	—	6.26	—
Charleston . .	65,165	26	7	—	—	—	—	—
Portland . . .	36,425	13	0	—	15.38	—	—	—
Worcester . .	84,655	38	15	21.78	21.78	5.26	—	14.52
Lowell . . .	77,696	45	15	11.11	11.11	—	—	—
Fall River . .	74,398	32	13	6.26	18.78	—	—	3.13
Cambridge . .	70,028	37	10	2.70	18.90	—	—	2.70
Lynn	55,727	17	3	5.88	29.40	—	—	5.88
Lawrence . .	44,654	—	—	—	—	—	—	—
Springfield . .	44,179	—	—	—	—	—	—	—
New Bedford .	40,733	—	—	—	—	—	—	—
Salem	30,801	17	2	—	5.88	—	—	—
Chelsea . . .	27,909	—	—	—	—	—	—	—
Haverhill . .	27,412	8	4	25.00	25.00	12.50	—	—
Taunton . . .	25,445	10	2	20.00	10.00	—	10.00	—
Gloucester . .	24,651	7	2	—	42.84	—	—	—
Newton . . .	24,379	5	1	40.00	—	—	20.00	20.00
Malden . . .	23,031	8	1	—	—	—	—	—
Fitchburg . .	22,037	9	4	44.44	22.22	11.11	11.11	—
Waltham . .	18,707	5	2	20.00	—	20.00	—	—
Pittsfield . .	17,281	5	2	—	40.00	—	—	—
Quincy . . .	16,723	6	1	—	—	—	—	—
Northampton .	14,990	5	3	20.00	—	—	—	20.00
Newburyport .	13,947	7	2	—	—	—	—	—
Medford . . .	11,079	4	0	—	—	—	—	—
Hyde Park . .	10,193	—	—	—	—	—	—	—
Peabody . . .	10,158	5	2	40.00	—	—	40.00	—

Deaths reported 2,646: under five years of age 1,000; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 335, diphtheria and croup 129, scarlet fever 66, diarrhœal diseases 45, measles 35, typhoid fever 20, cerebro-spinal meningitis 15, whooping-cough 15, erysipelas 10, typhus fever 2 malarial fever 1.

From typhoid fever New York 5, St. Louis 4, Lowell 3, Brooklyn, Milwaukee and Nashville 2 each, Boston and Haverhill 1 each. From cerebro-spinal meningitis New York 7, Brooklyn 5, Milwaukee, Washington and Fitchburg 1 each. From whooping-cough Boston 7, Cincinnati and Washington 2 each, Brooklyn, Boston, Milwaukee and Fall River 1 each. From erysipelas New York 3, Boston and Cleveland 2 each, Brooklyn, Washington and Lowell 1 each. From typhus fever New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending March 26th, the death-rate was 22.3. Deaths reported 4,348: acute diseases of the respiratory organs (London) 466, whooping-cough 192, measles 120, diphtheria 48, diarrhœa 32, scarlet fever 27, fever 16.

The death-rates ranged from 9.9 in Brighton to 37.2 in Huddersfield; Birmingham 22.4, Blackburn 18.8, Cardiff 24.5 Gateshead 19.4, Hull 16.3, Leeds 22.6, Liecester 20.6, Liverpool 26.8, London 21.3, Manchester 29.2, Newcastle-on-Tyne 17.9, Nottingham 23.0, Portsmouth 17.8, Sheffield 22.8, West Ham 19.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 9, 1892, TO APRIL 15, 1892.

First-Lieut. James D. Glennan, assistant surgeon, is relieved from duty at Camp Oklahoma, and ordered to Fort Sill, Oklahoma Territory, for duty at that station, relieving **Captain Francis J. Ives**, assistant surgeon, who, on being so relieved, will report in person to the commanding officer at Fort Sheridan, Illinois, for duty at that post. S. O. 86, A. G. O. April 12, 1892.

Leave of absence for three months on surgeon's certificate of disability is granted **Captain Alonzo R. Chapin**, assistant surgeon, U. S. A.

Leave of absence for two months, to take effect on or about May 1, 1892, with permission to apply for an extension of one month, is granted **Captain William C. Gorgus**, assistant surgeon, U. S. A.

Captain William H. Arthur, assistant surgeon, is relieved from duty at Fort Grant, Ariz., and ordered to Vancouver Barracks, Washington, for duty as post surgeon at that station, relieving **Captain Louis Brechemin**, assistant surgeon. Captain Brechemin, upon being relieved by Captain Arthur, will return to his proper station, Presidio of San Francisco, Cal.

The resignation of **First-Lieut. William N. Suter**, assistant surgeon, U. S. A., has been accepted by the President, to take effect July 28, 1892.

First-Lieut. Merritte W. Ireland, assistant surgeon, U. S. A., ordered to Fort Yates, N. D., for temporary duty during the absence of **Captain Alonzo R. Chapin**, assistant surgeon, U. S. A., on sick leave.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 16, 1892.

W. S. Dixon, surgeon, ordered to the Smithsonian Institution.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, April 25, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. M. H. Richardson: "A Case of Intestinal Obstruction, Laparotomy, Separation of Adhesions and Recovery."

Dr. G. L. Walton and Dr. F. E. Cheney: "The Importance of Correcting Ocular Defects in Functional Nervous Troubles."

G. G. **Sears**, M.D., *Secretary*.

Suffolk District Medical Society. — The annual meeting will be held at 19 Boylston Place, on Saturday, April 30, 1892, at 8 P. M.

Dr. G. W. Gay: "A Case of Nephrolithotomy; removal of a stone weighing five ounces; Recovery.

Dr. T. M. Rotch: "Improved Methods of Modifying Milk for Infant Feeding."

Dr. J. H. McCollom will show (by lantern slides) the various stages of the eruption of Small-pox.

Dr. C. B. Belt, will read a circular of information in regard to the Pan-American Medical Congress: Dr. A. P. Clarke, of Cambridge, and Dr. Marcy will make remarks about it.

Election of officers.

Supper after the meeting.

Members are requested to notify the Secretary at 188 Marlborough Street, of any error or change in address.

Edward N. Whittier, M.D., *President*.

James J. Minot, M.D., *Secretary*.

The Mississippi Valley Medical Association will hold its Eighteenth Annual Session at Cincinnati, Wednesday, Thursday and Friday, October 12, 13 and 14, 1892.

Charles A. L. Reed, *President*, Cincinnati.

E. S. **McKee**, M.D., *Secretary*, Cincinnati.

APPOINTMENT.

At a meeting of the Trustees of the Free Hospital for Women, held April 13th, it was voted to establish, in addition to the morning and afternoon out-patient clinics already existing, an evening out-patient clinic, to be held at 7 o'clock Mondays and Fridays. **Dr. Charles H. Hare** was appointed Surgeon to Out-Patients in charge of this clinic.

RECENT DEATHS.

Oramel Martin, M.D. M.M.S.S., died in Worcester, April 15th, aged eighty-one years. During the war he served as surgeon of the third battalion of rifles. He has been surgeon at the Worcester City Hospital, and was an honorary member of the Vermont Medical Society.

Elijah Whitney, M.D., died in New York, April 5th, aged ninety-three years. He was probably the oldest physician in the city. In early life he was a Presbyterian minister, but later graduated in medicine, and practised in New York from 1849, until a few years ago.

BOOKS AND PAMPHLETS RECEIVED.

The Year-Book of Treatment for 1892. Philadelphia: Lea Brothers & Co. 1892.

Aphasia and other Affections of Speech. By Charles K. Mills, M.D. Reprint. 1891.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. iv. 1891.

Transactions of the American Surgical Association. Vol. ix. Edited by J. Ewing Mears, M.D. 1891.

The Pathology of Hip-joint Disease, with Illustrative Cases. By H. Augustus Wilson, M.D., Philadelphia.

Transactions of the New York State Medical Association, for the year 1891. Vol. viii. Edited by E D. Ferguson, M.D.

A Text-book of Nursing. Compiled by Clara S. Weeks-Shaw. Second edition. New York: D. Appleton & Co. 1892.

Transactions of the American Otological Society, Twenty-fourth Annual Meeting. Washington, D. C., September 22, 1891.

Tobacco, Insanity and Nervousness. By Dr. L. Bremer, late physician to the St. Vincent's Institution for the Insane, of St. Louis, Mo. 1892.

The Medical Annual and Practitioners' Index. A work of reference for medical practitioners. Tenth year. Bristol: John Wright & Co. 1892.

Concerning American Indian Womanhood: An Ethnological Study. By Wm. Thornton Parker, M.D. (Munich), Beverly, Mass. Reprint. 1892.

Multiple Neuritis and Some of its Complications. Clinical Lecture delivered at the Philadelphia Hospital. By Charles K. Mills, M.D. Reprint. 1892.

The Treatment of Sciatic Neuritis by the Local Abstraction of Blood. By F. Gundrum, M.D., Escondido, Cal. Detroit, Mich.: George S. Davis. Reprint. 1892.

Practical Midwifery, a Hand-book of Treatment. By Edward Reynolds, M.D., Assistant in Obstetrics in Harvard University. New York: William Wood & Co. 1892.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Semi-annual Session, November, 1890, and Ninety-third Annual Session, April, 1891.

Aphasia Due to Sub-dural Hæmorrhage without External Signs of Injury; Operation; Recovery. By L. Bremer, M.D., and N. B. Carson, M.D., of St. Louis. Reprint. 1892.

A Treatise on Bright's Disease of the Kidneys: Its Pathology, Diagnosis and Treatment. By Henry B. Millard, M.A., M.D. Illustrated. Third edition. New York: William Wood & Co. 1892.

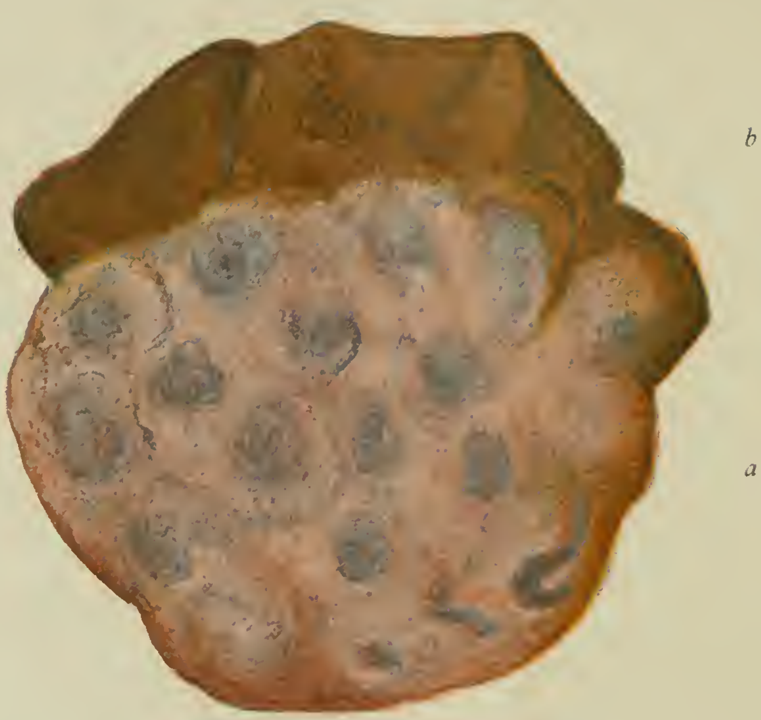
Some Points in the Diagnosis and Nature of Certain Functional and Organic Nervous Diseases. Subacute Recurrent Multiple Neuritis. By J. T. Eskridge, M.D., Denver, Col. Reprints. 1892.

A Treatise on Diseases of the Nose and its Accessory Cavities. By Greville MacDonald, M.D. (Lond.), Physician to the Hospital for Diseases of the Throat. Second edition. London: MacMillan & Co. 1892.

The Treatment of Epilepsy; with Special reference to the use of Potassium Bromate, Magnesium Bromide, Nitro-glycerine, Antifebrin, Sulphonal, etc. By Guy Hinsdale, M.D., Philadelphia. Reprint. 1892.

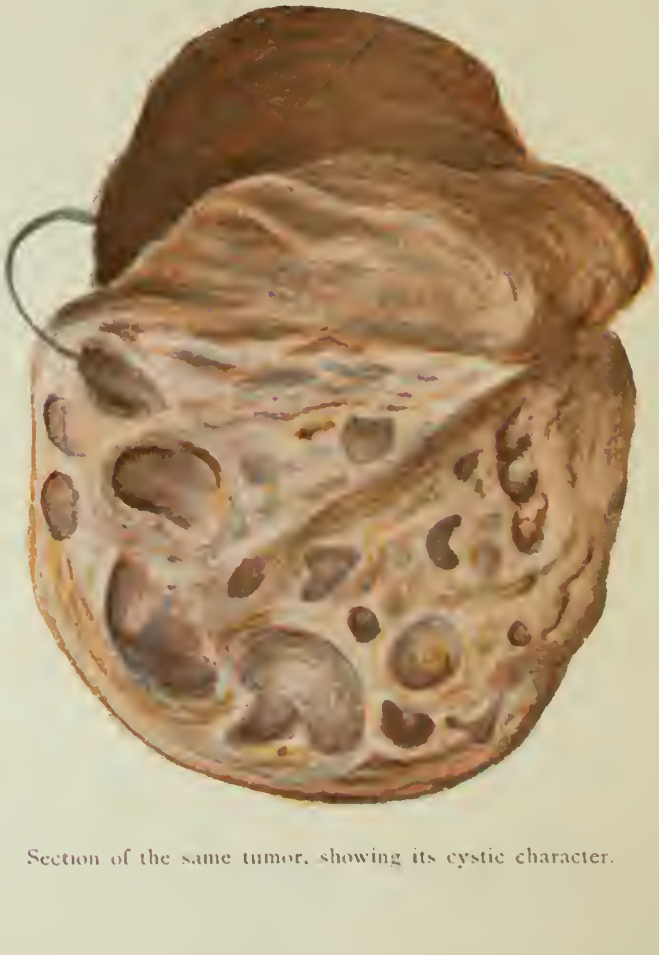
Bacteriological Diagnosis, Tabular Aids for Use in Practical Work. By James Eisenberg, Ph.D., Vienna. Translated and augmented by Norval H. Pierce, M.D. Philadelphia and London: The F. A. Davis Co. 1892.

Fig. 1.



Dr. W. W. Keen's case of Resection of the Liver for Cystic Adenoma of the Bile Ducts. *a*, Tumor. *b*, Liver Substance. Natural size.

Fig. 2.



Section of the same tumor, showing its cystic character.

Original Articles.

ON RESECTION OF THE LIVER, ESPECIALLY FOR HEPATIC TUMORS,

With the Report of a Successful Case of Resection for an Adenoma of the Bile-ducts, and a Table of Twenty Recorded Cases of Hepatic Operations.[1]

BY W. W. KEEN, M.D.,
Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia.

Mrs. J. G., was sent to me by Dr. B. S. Erwin, of Mauch Chunk, October 2, 1891. Age thirty-one; married at fifteen; six living children; four miscarriages, the last one about the middle of August, 1891; weight January, 1891, 135 pounds, August, 1891, 125 pounds. She has been subject to malaria for six years, escaping it, however, in the past year. Otherwise her general health was good until three years ago, when she began to have pain, weakness, flushing, painful and irregular menstruation, and soon passed into a generally broken-down condition. She has had neither diarrhœa nor dysentery.

About two years ago she first noticed a lump on the right side of the abdomen. This remained for several weeks, and then was lost sight of. It reappeared a year ago, at first about the size of a walnut, but growing slowly. Her pregnancy, which ended in a miscarriage in August, 1891, seemed to cause a rapid increase in its size. There has been at times retention of urine, and of late the quantity has been very small. She has never had any jaundice or especial digestive troubles. Pain and excessive discomfort have caused her to seek relief; she is broken down in general health and utterly wretched.

On examination, an oval tumor, about the size of a fist, was found on the right side of the abdomen, in the situation of the kidney, separated from the liver dulness by an area, three fingers broad, of distinct tympanitic resonance. By bi-manual examination pressure posteriorly is felt in front, and *vice versa.* The tumor was quite movable, moderately tender and of about the consistency of the kidney; no especially soft portion was found. The renal artery could not be detected. Vaginal examination showed no connection of the tumor with either uterus or ovaries. The perineum was somewhat torn posteriorly; the mouth of the uterus showed a moderate tear; and there was rather profuse leucorrhœa.

A microscopical examination of the urine was made by Dr. Kyle, who reports as follows: "Specific gravity 1,010; leucocytes single and in casts; blood-casts (many); blood-copuscles; epithelium, squamous and caudate; a few small renal epithelial cells; numerous crystals of uric acid, urate of ammonia, etc.; urea, 1.6%. Diagnosis probably a floating and diseased kidney. An exploratory operation was recommended.

Operation, October 9, 1891, assisted by Drs. Wm. J. Taylor and J. Chalmers DaCosta. Chloroform was used instead of ether, in view of the condition of the kidneys, as shown by the urine. I operated by a vertical incision in the right linea semilunaris, reaching nearly to the border of the ribs and nearly to the ilium. The incision was four and a half inches long. The moment the peritoneal cavity was reached a multiple cystic tumor was seen. The surface was reticulated by partitions between the cysts, the cysts being on an average about the size of the little finger-nail, some larger and some smaller. The color was a light bluish-white (see Plate). The moment the hand was introduced into the abdomen it was discovered that the tumor had no connection with the kidney. The right kidney appeared to be somewhat smaller than normal but was in its right place. On drawing the tumor out of the abdomen, it was instantly seen to be connected with the liver, involving its extreme right border. In size it was three and a half inches vertically and nearly the same transversely. At its base, where it joined the liver substance, it was two and a half inches thick. It was evidently a localized tumor. Just at its internal border was the gall-bladder, which was normal, but so close to the tumor that I dissected it loose for half an inch in order to operate with greater ease. A few small vessels required ligation at this point.

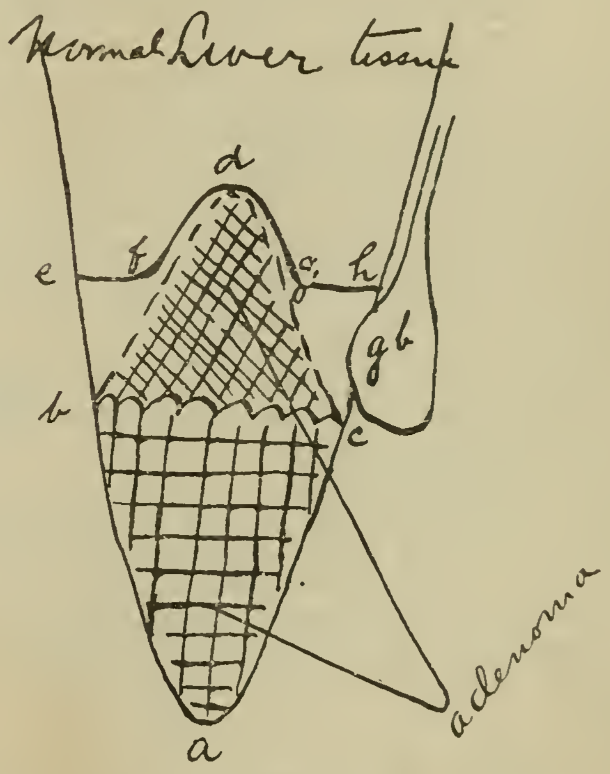


Fig. 1.

Diagramatic Section of the Liver and the Adenoma. *a b c*, the limits of the tumor as seen externally; *b d c*, its wedge-like prolongation into the liver; *e b*, *g h*, lines of section of liver substance by the cautery; *f d g*, the portion enucleated by the finger-nail; *g b*, the gall-bladder; *d f e* and *d g h*, the "flaps" left after removal of the neoplasm.

Having gone so far as to open the abdomen and having found the source of the trouble, and the tumor appearing to me to be possibly, and I might even say probably, non-malignant, I determined to attempt its removal. My first idea was to ligate the thick border of attachment, where liver and tumor were continuous, and then to divide this pedicle, if it could properly be called a pedicle, by the Paquelin cautery. I therefore put one stitch directly through the liver-substance next the gall-bladder, induced especially to begin here by reason of a very large artery which had been exposed but not wounded during the separation of the gall-bladder from the liver. Having tied the liver here, I tried the effect of the Paquelin cautery, and was so well satisfied with it that I made no further attempt to ligate the liver-substance but continued cutting with the cautery. As I cut, four very large veins were laid bare, and were ligated before being burned through. When I had cut about half way through in depth, I found that my cautery knife was cutting into cysts of the neoplasm, and that the latter extended as a wedge into the liver to a greater distance internally than was apparent from the outside (Fig. 1). Accordingly I made an attempt to strip the liver-substance from the tumor with my thumb-nail, and found that I could do so with perfect ease and without serious hæmorrhage. This enucleation left the tumor attached to the liver at its posterior border only. I then burned through the posterior attachments of the tumor with the cautery. A few points required extra touching with the dull red platinum point. The liver-stump, roughly speaking, resembled that of an amputation with its two flaps. These two edges or flaps were then approximated by five sutures passed deeply through the substance of the liver.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

The intestines had been protected meanwhile by a large flat sponge. This had kept the most of the blood out of the belly cavity, and the amount lost I estimated at six to eight ounces. The belly cavity was flushed with hot water, and the wound closed after inserting a glass drainage-tube. A sublimated wood-wool dressing was now applied, and the patient put back in bed in very fair condition. Within fifteen minutes her lips had assumed a good, though pale, red color. The operation lasted about an hour.

December 10, 1891. After the operation, two doses of one-eighth of a grain of morphia hypodermatically relieved her pain, and one of one-fourth of a grain of cocaïne by the stomach checked her vomiting. From the drainage-tube in the first twenty-four hours about three ounces of bloody serum were removed, in the second twenty-four hours less than one ounce; and therefore at the end of forty-eight hours, the tube was removed. No bile or bile-stained fluid was seen at any time. The bowels were moved on the second day by drachm doses of sulphate of magnesia, the stools being then and afterward of a normal brown color, without any visible disturbance of the hepatic function.

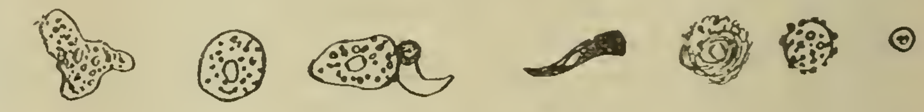

Fig. 2.

Cells from the Cystic Fluid. The figure on the extreme right represents the size of red blood corpuscle.

The temperature on the night after the operation rose to 101.2°, on the two following days to 100°, and after that was not above 99°, excepting during what was apparently a malarial attack, which began eleven days after the operation and lasted four days. During this attack the temperature rose to 101.2° again. The stitches were removed at the end of a week. In fact, with the exception of the malarial attack, her recovery was an uninterrupted one. I kept her in bed for about three weeks in order to avoid any possibility of ventral hernia, and also, as I had no experience in such operations on the liver, I feared that either from the charred surfaces or from want of union of the tissues, followed by escape of bile into the peritoneal cavity, there might be some digestive or other abdominal difficulty. No such trouble, however, appeared, and she went home forty-two days after the operation, entirely well. I heard from her in February, 1892, and she has continued in the best of health, with no disturbances of either liver, stomach or bowels.

The tumor was entirely strange to me, and unlike anything I had ever seen before. Naturally my first idea was that it might be made up of echinococcus cysts, but certainly unlike any I had ever met with. I therefore gave it to Dr. W. M. L. Coplin, Adjunct Professor of Hygiene in the Jefferson Medical College, who was assisted by Dr. D. Bevan in its examination. Upon receiving their report, I found that the tumor was exceedingly rare, and interesting pathologically as well as surgically. Accordingly I sent it to Prof. W. T. Councilman of the Johns Hopkins Hospital, who also has kindly sent me the results of his examination. I append both reports, as the examinations were made entirely independently of each other, and their concurrences are therefore the more valuable.

Professor Coplin has also, at my request, prepared a few remarks on the pathology of hepatic cysts of new formation, excluding hydatid cysts.

PATHOLOGICAL REPORT OF PROF. COPLIN AND DR. BEVAN.

"The tumor is ovoidal in outline, and measures 9 cm. ($3\frac{1}{2}$ in.) in width, 11.5 cm. ($4\frac{1}{2}$ in.) in length; 4.5 cm. ($1\frac{3}{4}$ in.) in thickness. Weight, 113 grm. (3 oz., 255 gr.). Surface smooth, with slight tuberous elevations corresponding to cysts located beneath. The surface of removal irregular, showing at points attachment of liver-tissue. Several very large veins are to be seen entering at various points. Upon the external surface an incision has been made disclosing numerous cysts varying in diameter from 1 mm. or less to 20 mm., and containing a milky, floculent fluid about the consistency of blood-serum. Under the microscope this contained white blood-corpuscles, and a few red, these probably having gained ingress in the opening of the tumor. There was also present a much larger cell, at least three times the size of a white blood-corpuscle, irregular in outline for the most part, although a few could be seen with a sharply defined wall and round in outline (Fig. 2). Many of these bodies contained well defined nuclei, although these were by no means constantly present. When nuclei was present, the peri-nuclear protoplasm was always granular; those having no nuclei were finely granular, at points containing vacuoles. On the warm stage of the microscope these cells did not evince any movement; however, their varying contour is highly suggestive, and a more positive result might have been attained had the test been made early after removal.

"Many of the cysts communicate by small round openings through the thin part of the wall; these communications are not, however, universal, as the entire contents cannot be evacuated by the single incision, and fluid thrown in one cyst will not distend more than three or four other cysts. The walls of the cysts vary greatly, at points being extremely thin; elsewhere they may be found fully 6 mm. to 10 mm. in thickness. The density of the tissue between the cysts also varies, being for the most part firm and elastic.

"Microscopic examination reveals a cylindrical cell epithelial lining, at points projecting into the cyst cavity, and closely resembling dendritic growths, as seen in certain forms of papilloma (Fig. 3). It is, however, to be remembered that sections of gland acini would give exactly this appearance. The cylindrical cells are high and not ciliated. They are arranged upon a fairly well defined basement membrane, back of which is found a varying thickness of connective tissue containing blood-vessels, unstriped muscular tissue and fibrous tissue, in varying amounts and stages of growth, at points still made up of embryonic cells. The sections do not show any hepatic cells present in the tumor itself.

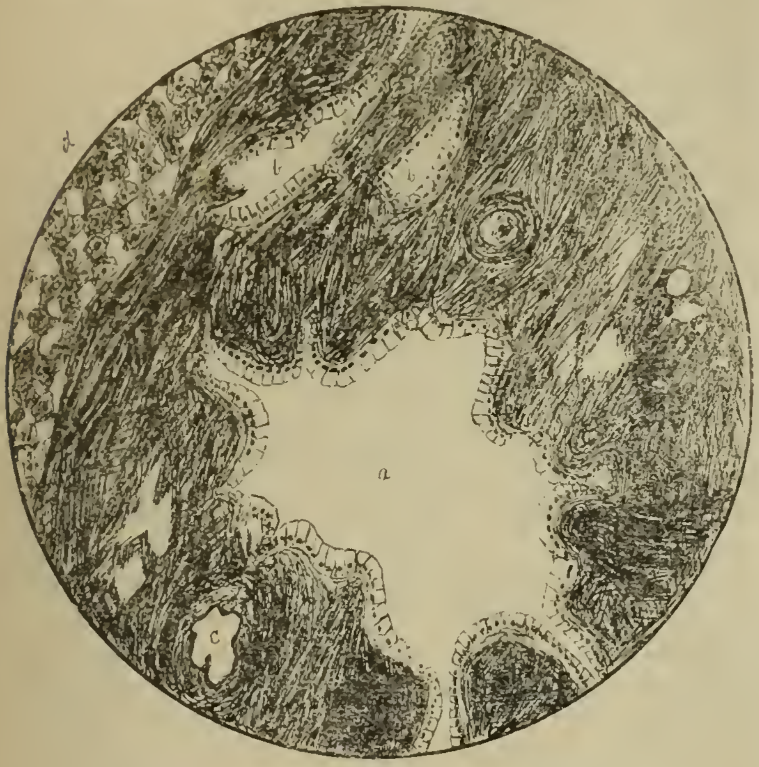

FIG. 3.

a, Large cyst lined with columnar epithelium; *b*, small cysts; *c*, blood-vessel with greatly thickened walls; *d*, liver cells with dilated vessels between them.

"*Bacteriological Examination.* — Sections stained by Gram's method, tissue stained by picro-carmine, show cocci present in large numbers. These are arranged for the most part in zooglæa around the blood-vessels and lymph-spaces; as single cocci and in short chains, they are also to be found between the epithelial cells and their basement membrane. The surface of the tumor being seared with cautery and a small cyst opened by a sterile needle, culture-tubes were inoculated. These gave a pure culture of cocci, growing rapidly on agar, as an ashen gray opaque growth, slightly elevated on the surface and penetrating the medium as a dense cloud and not liquefying the surface. They stained well both by Gram's method and Lœffler's alkaline stain. They measure 1μ. in diameter, that is, they are slightly larger than the staphylococcus albus."

The patient had had neither attacks of dysentery nor of diarrhœa from which any infection by these micro-organisms could be accounted for.

REPORT OF PROF. W. T. COUNCILMAN.

"The tumor is oval and somewhat flattened. The surface is smooth, but uneven from numerous rounded projections. The surface of removal is irregular, the edges here and there showing the marks of the cautery. This surface consists of liver-tissue with considerable connective-tissue. Several large vessels enter the tumor at this point.

"On section of the tumor, it consists of numerous cysts of varying size and of irregular shape. Many of these open into one another, and from the surface of one cyst there are deep projections into the surrounding tissue. The cysts vary in size from 1 mm. (or smaller) to 3½ cm. They are relatively more frequent and larger in the periphery of the tumor. They contain (after hardening in alcohol) a soft, white, curdy mass. The wall is smooth and tolerably thick. The centre of the tumor and the tissue everywhere separating the cysts is dense and fibrous.

"On microscopic examination the cysts are lined with high, cylindrical epithelium, which in many places projects in small papillomatous formations within the cyst. None of the epithelial cells are ciliated. The tissue between the cysts, and forming the stroma of the tumor, is dense connective-tissue with numerous bands of non-striated muscular fibres. In the stroma there are some places rich in granulation cells.

"The tumor is one of the rare cystic tumors of the liver, and evidently originates from the bile-ducts, and most probably from the large vasa aberrantia found on the edge of the liver. The irregular shape of the cysts is due to their rupture into one another."

Professor Coplin has kindly furnished the following:

REMARKS ON ADENOMATA.

"Of the cystic adenomata of the liver we know very little, and the confusion is deepened by the fact that the German writers Ziegler, Klebs and others, consider cylindrical-celled carcinoma as adenoma, and draw little or no line of differentiation except that of infiltration. The earliest attainable literature is in Klebs who quotes E. Wagner[2] as having observed in the liver enlargements, the structure of which resembled the so-called glandular tumors of the mammary gland; Klebs is inclined to think that all adenomata of the liver are malignant, and does not refer to any that at all resemble the present case. Ziegler states that adenoma of the liver may be made up of tubular glands instead of lobules.[3] Although he lays no stress on these tumors, save in their rarity, he gives a most typical cut presenting the exact histological structure of the present case, and designates the growth as papilliferous cystadenoma. As to the exact origin of these growths, nothing is known. Whether they arise from the ducts or from the liver-cells within the lobules, as Rindfleisch thinks, cannot be demonstrated. The reported cases do not appear at all like the present one; they are solitary cysts disseminated throughout the organ, lined for the most part by pavement epithelium, rarely by cylindrical cells, more rarely by ciliated cells.[4] In the latter case, one can hardly call it an adenoma, or even a cyst."

Dr. David Bevan has kindly made an excellent drawing from a section (Fig. 3) and has furnished me with the following description of the microscopical appearance of the tumor:

"The stroma is composed of white fibrous connective-tissue, in which small openings are perceived, presumably (?) beginning cysts. Occupying the centre and extending to the right lower part of field, is observed a large cyst (*a*) lined with columnar epithelium. The margin of the cyst is very irregular, a number of small papillæ extending into it. In its extreme lower end is noted a papilla of considerable size; above the large cyst are two smaller ones (*b*), to the right of which is an artery with greatly thickened wall. Still further to the right is a bundle of unstriped muscular tissue and a blood-vessel. To the left of the central cyst is another bundle of unstriped muscle. Just beyond this is the limit of the neoplasm where the fibrous tissue is very dense, sharply defining it from the liver proper (*d*). In the lower left of the field (*c*) is a large artery with enormously thickened coats. The lumen is greatly altered in form. The liver-cells (*d*) are changed in shape, and the capillaries between them much enlarged."

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[2] Arch. d. Heilk, 1861, S. 471.
[3] Path. Anat. and Pathogenesis, Art. 167.
[4] Friedreich: Virchow's Archiv.

Dr. Thompson S. Westcott has kindly prepared the accompanying table, which, I believe, contains all the cases of resection or amputation of the liver which have been recorded up to this time. Based upon this and upon my personal experience in my own case, I shall add a few

REMARKS.

(1) *Date and locality of operation.* — Of the 20 cases two are American, and the others European, chiefly German and Italian. I have not found any English case. The first American case was reported by Tiffany, of Baltimore, in 1890 (No. 15). The first recorded case was by Langenbuch, in 1888, less than four years ago.

(2) *Age.* — This varied from twenty-one to fifty-eight years. The decade from twenty-one to thirty furnished six cases; that from thirty-one to forty, five cases; that from forty-one to fifty, three cases; and two were between fifty-one and sixty.

(3) *Sex.* — In striking contrast to age, sex is evidently a potential factor. Of the 19 cases in which this is given, three were men and 16 women. Taken in connection with the well recognized greater frequency of gall-stones in women, one can scarcely avoid attributing both affections to the pressure upon the liver, resulting from tight-lacing. In fact, Langenbuch's case (No. 1) was not really one of a tumor of new formation, but was a portion of the liver itself in process of gradual separation from the main organ, presumably by the pressure of the clothing; and Lauenstein's (No. 11) probably a similar one.

(4) *Size and weight.* — The tumors and portions of liver removed have varied in size from that of a small nut up to the "size of three fists," or of "a man's head." In weight, they have been as large as 3½ oz., as in the present case, to 11½ oz., and even 3 lbs.

(5) *Diagnosis.* — Of the twenty cases nearly all were incorrectly diagnosticated. In three it was thought that there was a tumor connected with the liver, and in one with the gall-bladder. In others, the diagnosis had been a tumor of the pancreas, the mesentery, the omentum, the pylorus, the colon, the ovary, or the kidney. In my own case my diagnosis was a floating and probably diseased kidney. The reciprocal pressure, so easily felt in the loin and anteriorly, the mobility of the tumor, its apparent resemblance to the kidney in size, the blood-casts, leucocytes and renal epithelium in the urine, combined especially with the fact that there were over two inches of distinct tympany between the tumor and the border of the liver, all looked towards the kidney and away from the liver as the organ involved. I find that a similar tympany is distinctly stated to have intervened between the tumor and the liver in six cases of the twenty, and probably existed in some of the others.

While this physical sign should have its due weight, the presence of tympany must not be deemed to exclude tumor of the liver.

The symptoms, also, are not usually at all characteristic of the hepatic origin of the tumor. There has been no jaundice and no digestive symptoms other than those which would naturally arise from almost any abdominal tumor.

(6) *Variety of tumor.* — In two cases the part resected was a constricted and partly separated portion of the liver, and was not therefore, properly speaking, a tumor. Of the remaining eighteen, one-half (nine) were echinococcus and hydatid cysts; three were cases of cancer; three of syphilitic tumor; and one each of sarcoma, small calculi and adenoma of the bile-ducts.

But the chief interest naturally centres in the fact, the methods and the results of removal, since this constitutes an entirely new chapter in abdominal surgery.

(7) *Can any large portion of the liver be removed without a fatal result?* — The results of experiments upon animals rendered it probable, not only that in man also a portion of the liver could be removed without so seriously interfering with its function as to be incompatible with life, but that a very considerable portion could thus be removed without unreasonable danger. Ponfick[5] showed that in the rabbit the removal of a quarter of the liver caused a slight deterioration in the general condition of the animal; removal of one-half was followed by much more serious results, which, however, passed off within a few days: even removal of three-quarters of the liver could be recovered from, though the prostration was very severe at first; but that removal of more than this amount (three-quarters) was always fatal. He showed, also, that not only could the animal bear the loss of a large part of the liver, but that there was a reparative power in that organ by which new hepatic tissue could be produced.

Later,[6] Von Meister, from his own experimental observations has confirmed some of the results previously obtained by Ponfick, of the remarkable degree of reparative power exhibited by the liver, a power which may exist in other glands in greater or less degree, and he has even gone further. He found that in the dog and cat, as well as in the rabbit, the removal of even more than three-fourths of the liver was not followed by any serious consequences, and that within the space of thirty-six days repair had advanced to such an extent that the weight of the organ was regained. This regeneration is effected partly by hypertrophy of the hepatic cells, but mainly by their hyperplasia; but new lobules are not formed, and biliary ducts as well as blood-vessels share in the new formation. Observations were also made upon the effect of extirpation of such large portions of the liver upon the excretion of urea. It was found that the total quantity of nitrogen notably diminishes, but not in proportion to the nitrogen of the urea, so that the proportion of the latter to the whole nitrogeneous excretion is decreased. On the other hand, the amount of extractive matters is increased, and their nitrogenous constituents appear in greater proportion than normal to the total nitrogen. The diminution in urea is proportionate to the amount of liver substance removed, total extirpation of the organ leading to a very marked decrease in urea. It was further found that after partial extirpation — within a period of from eleven to fifteen days — the quantity of urea rises until it once more attains the normal degree.

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[5] Lancet, 1891, ii, p. 1409.

[6] Lancet, 1890, i, 881; and Beilage z. Centralbl. f. Chir., 1890, 67.

TABLE OF TWENTY REPORTED CASES OF REMOVAL OF TUMORS OF THE LIVER.

COMPILED BY THOMPSON S. WESTCOTT, M.D., OF PHILADELPHIA.

No.	Reporter and Reference.	Sex.	Age.	Duration, Nature and Size.	Method of Removal.	Treatment of Liver Stump.	Result.	Remarks.
1	Langenbuch. Berlin klin. Woch., 1888, No. 3, p. 37.	F.	30	Eight years. A constricted part of left lobe, supposedly due to corsets worn until tumor began to be painful and was first observed; weight, 370 grammes.	Ligamentous connection divided into several portions and ligated.	Returned to abdomen.	Recovery.	Abdomen reopened for internal hæmorrhage a few hours after operation. Vessels ligated and stump returned. Exploratory operation. Diagnosis of pancreatic tumor, movable tumor of mesentery or echinococcus of liver. Possibility of a tumor of liver developed by lacing.
2	Loreta. Memorie della R. Accademia delle Scienze dell' Istituto di Bologna, 1886–1888, serie quarta, tomo viii, p. 581.	M.	40	Two years. Appeared externally the size of a fœtal head. Echinococcus cyst. Underlying tissue of left lobe infiltrated for an extent of 15½ by 14 centimetres.	This area was included between an interlacing continuous suture, drawn tightly and tied. Removal by bistoury.	Hæmorrhage checked and edges of Glisson's capsule at edges of wound on convex and concave surfaces stitched together and to abdominal wall. Collodion and iodoform dressing.	Recovery.	Diagnosis: Suspected echinococcus.
3	Garré. Beiträge zur klin. Chir., 1888, Bd. iv. p. 181; abst. in Annals of Surgery, xi, 1890, p. 127.	F.	44	Echinococcus cyst, with pedicle.	Pedicle tied and touched with thermo-cautery.	Disinfected and returned to abdomen. No drain.	Recovery.	Tympanitic between liver and tumor; not believed to be connected with liver, but probably mesenteric or omental.
4	The same.	M.	50	Six months. Hazle-nut-sized cancerous nodule of right lobe, metastatic, from a larger tumor of abdomen.	Excision by knife.	Seared with thermo-cautery and returned.	Recovery.	Main tumor not removed, its point of origin not being determined. Diagnosis before operation: Carcinoma of mesentery.
5	Pozzi. Gazette Méd. de Paris, June 30, 1888; also Cong. Franç. de Chir., Proc. Verh., 1888, p. 545.	F.	34	Large echinococcus cyst.	Scissors.	Ligature, thermo-cautery and suture, with suture of liver wound in abdominal wound, and drainage.	Recovery.	Discharge of bile and renewed liver tissue through the drain. Fistula closed.
6	Ruggi. Dell' Epatectomia Parziale nella cura delle cisti d'echinococco, Bologna, 1889.	F.	22	Two years. Double echinococcus cyst, in oblique diameter about 19 cms., springing from under surface; a portion of liver 18 by 10 cms. excised.	Excision. Vessels tied with catgut.	Edges of cavities sutured to peritoneal edge of abdominal wound, and treated externally.	Recovery.	Diagnosis of echinococcus of kidney, as the tumor had no apparent connection with liver, being separated by a tympanitic area (intestinal loop).
7	Roggi. Wiener med. Presse, No. 21, 1889; abst. in Am. Jour. Med. Sciences, Sept., 1889.	F.	..	Double echinococcus cyst, weight 3 pounds.	Enucleated. Portion of liver parenchyma 3 in long resected.	Edges of liver cavity secured in abdominal wound.	Recovery.	Free discharge of bile through wound.
8	Vohtz. Hospitals Tidende, 1889, 22-610–612; in Annals of Surgery, 1890, xi, p. 288.	F.	21	Tumor 9 years, rapidly increasing after confinement 11 mos. before. Echinococcus cyst, size of child's head, extending below a line from one iliac spine to the other, and above continuous with liver.	Excised with a portion of greatly atrophied liver tissue.	Wound united by a continuous suture so as to form a crest-like elevation. Abdominal wound closed.	Recovery.	
9	Wagner. Beilage zur Centralbl. f. Chirurg., 1890, p. 68; also Revue de Chir., 1890, x, p. 767.	F.	43	Four years. Right lobe, probably syphilitic. Three fists' size, with pedicle.	Division after ligation.	3 x 10 to 12 cms. Returned to abdominal cavity.	Death, same day.	Gall-bladder could not be found.
10	Decès. Union Médicale du Nord-est, 1890, No. 3, p. 97.	F.	23	Seven or eight years. Hydatid cyst, with pedicle, 3 cms. long by 1 cm. broad, arising from the sharp border of left lobe, and enveloped by two folds of the gastro-hepatic omentum.	Pedicle at first incised by cautery, but on account of hæmorrhage ligated by two turns of catgut and removed by scissors.	Lavage. Abdominal incision closed.	Recovery.	Diagnosis of cyst of ovary, as it appeared attached in region of right ovary. It lay in front of stomach and behind transverse colon. Seemed independent of liver, and no hydatid fremitus felt.
11	Lauenstein. Beilage zur Centralbl. f. Chirurg., 1890, p. 73.	F.	..	Large freely-movable lobule attached to lobus Spigelii.	. . . .	. . . .	Death, 12th day.	Sepsis.
12	Tillmanns. Beilage zur Centralbl. f. Chirurg., 1890, p. 73.	?	..	Large syphiloma.	Operation in two stages. Thermo-cautery.	Extra-peritoneal.	?	Diagnosis of liver tumor.
13	Hochenegg. Wiener klin. Woch., 1890, No. 12; in Centralbl. f. Chir., 1890, p. 751.	F.	58	Nine mos. Under surface of liver, portion of substance infiltrated, 3.5 by 4.5 cms. Carcinomatous.	Excision by knife.	Attempted suture, but sutures tore out. Stump fixed in abdominal wound.	Recovery.	Diagnosis: Cancer of pylorus or colon. Tympanitic between tumor and liver. Gall-bladder removed.
14	Sklifosovsky. Wratch, No. 27, 1890, p. 594; in Annals of Surgery, xiii, 1891, p. 151.	F.	24	Seven mos. Fibro-myoma lipomatodes sarcomatodes. Size of man's head, with isthmus 2½ fingers' breadth.	Isthmus tied, liver fixed to abdominal wall, and tumor amputated.	Stitched in abdominal wound.	Recovery.	Diagnosis: Probable tumor of omentum or mesentery, not of liver, as note between liver and tumor was tympanitic.
15	Tiffany. Maryland Med. Journal, 1890, No. 23, p. 531, and International Med. Mag., April, 1892.	M.	25	Six mos. Tumor noticed to left of middle line and slightly in epigastrium; nodule on convex surface of liver; contained a small amount of fine biliary calculous matter.	Excised with curved scissors, and surface cauterized. Abdominal incision of 5 in. in line of fibres of left rectus abdominis.	Cavity size of a walnut left, walls of which were cauterized.	Recovery.	Diagnosis not made. Operation exploratory.
16	Hochenegg. Wiener klin. Woch., 1890, No. 52, p. 1008; in Centralbl. f. Chirurg., 1891, No. 18, p. 365.	F.	27	Gumma, 8 cms. Tumor imbedded in capsule, and covered with normal liver substance.	Contour of tumor burned through with cautery, and tumor enucleated. Hæmorrhage stopped by gauze and pressure.	Fixed to abdominal wall.	Recovery.	
17	Tansini. Brit. Med. Journal, 1891, i, 81.	F.	..	Hydatid cyst.	Total extirpation. Excision of a portion of liver.	Wound closed with sixteen sutures, partly silk and partly catgut.	Recovery.	Free hæmorrhage from cut surface controlled by catgut ligature. Operation followed by no rise of temperature.
18	Lücke. Centralbl. f. Chir., 1891, No. 6, p. 115.	F.	31	Two years. Cancer left lobe size of fist, pedicle 20 centimetres in circumference.	Pedicle sutured to abdominal opening, tumor protruding.	Surrounded with iodoform gauze and tied with rubber drainage tube progressively tightened.	Recovery.	Thermo-cautery used at first; abandoned on account of bleeding. Pedicle divided with cautery on ninth day.
19	Terrillon. Rapport de Duplay, Bulletin de l'Académie de Médecine de Paris, 1891, xxv, p. 75.	F.	53	Six years. Following supposed injury. Multiple hydatid cysts, involving a portion of the liver about the volume of two fists.	Affected portion, clearly demarcated from healthy tissue, surrounded by rubber tube.	This artificial pedicle measured 24 cms. in circumference. Mass fixed to lips of incision by sutures. Iodoform dressing. Strangulated part withered; resected on seventh day.	Recovery.	Diagnosis of distended gall bladder made by several other surgeons.
20	Keen. The present case.	F.	34	Two yrs. Increased during pregnancy. Size 9 by 11½ cms., and 4½ cms. thick at base; weight 113 grms. (3½oz.); adenoma of bile-ducts.	Thermo-cautery and enucleation. Four very large vessels tied with catgut.	Edges of liver wound united by five silk sutures. Stump returned to abdomen.	Recovery.	Diagnosis of floating and probably diseased kidney. Tympany between tumor and liver.

(8) *Will not the escape of the bile produce dangerous or fatal peritonitis?* — Even the escape of bile into the peritoneal cavity, which would naturally excite great apprehension, seems to be more of a theoretical than a practical objection. In only two cases of the twenty was any such discharge of bile observed. This gave no trouble, as it escaped externally in both instances. Pavy has stated that no harm arose from such a free escape of the bile into the peritoneal cavity in his experiments in dogs; and Lane[7] has reported a case of probable rupture of the gall-bladder, in which, after five weeks, he evacuated over three gallons of bile-stained fluid, yet the patient recovered. Moreover, there is probably a considerable escape of bile into the abdomen in some of the cases of cholecystotomy which recover; yet it is an accident that should be avoided if possible.

This fear of the escape of bile led me to insert a glass drain in the present case. Part of the tumor was removed by enucleation and part by the cautery; and I feared that either surface or both would allow of the escape of bile since the sutures did not, of course, accurately approximate the surfaces. The result showed that the precaution was needless, and after forty-eight hours the drain was removed, no bile or bile-stained fluid having been observed.

It being conceded, then, that more or less of the liver could be removed without sacrificing life, either primarily or by its after consequences, the next point is

(9) *The method of removal and especially the means for the prevention of hæmorrhage.* — In my own case there was absolutely no trouble in this respect. The base of the tumor was severed by repeated small touches of the cautery-point; the large vessels were all seen and ligated before their division by the cautery; and the small ones either did not bleed or ceased bleeding upon slight touching with the dull red platinum point or after pressure with a sponge dipped in hot water. From the portion that was enucleated by the thumb-nail, absolutely no hæmorrhage other than slight oozing took place, and I would especially commend this procedure. It was simple, easy and rapid. The methods adopted in the other nineteen reported cases have been various; and often, as in the present case, two or more have been combined with great advantage; thus the tumor has been excised; ligated and excised; ligated and cauterized; ligated, excised and cauterized; and in three cases was enucleated.

(10) *Treatment of the stump.* — In nine cases, after completion of the operation by the methods already named, the stump was returned to the abdominal cavity. In three cases the lips of the hepatic wound were first sutured, in one of them (No. 17) with as many as sixteen sutures. Of these nine all but one recovered. In six cases (Nos. 2, 5, 6, 7, 13, 16) the stump was sutured in the abdominal wound at the close of the operation. In two (Nos. 5, 7) there was a free discharge of bile through the wound. All of these recovered. In four cases (Nos. 12, 14, 18, 19) the liver was attached to edges of the abdominal wound before the removal of the tumor. In one case (No. 14) ligation of the pedicle, fixation to the abdominal wall and immediate amputation of the tumor was practised; but in the other three a true extra-peritoneal treatment was carried out. In one case (No. 12) it was done in two stages, that is, primary suture to the abdominal wall and a later amputation. Lücke (No. 18) sutured the pedicle to the abdominal wall, surrounded the protruding tumor with iodoform gauze, and tied the pedicle with a rubber-tube, which was gradually tightened. Terrillon (No. 19) made an artificial pedicle (24 cm., [9½ in.,] in circumference) by constricting the attachment by rubber-tubing and sutured it to the abdominal wound, the tumor protruding externally. Under an iodoform dressing this gradually withered, and was removed on the seventh day. All of these four extra-peritoneal cases recovered.

(11) *Results.* — In one case (No. 12) the result is not known. Of the other nineteen, seventeen recovered, and only two died, one on the day of the operation, presumably from shock, the other on the twelfth day, from sepsis.

(12) *Conclusions:*

a. Both experiments on animals and operation on man have shown that tumors of the liver, and even large portions of the liver itself, can be removed without undue disturbance of the function of the liver; the experimental evidence makes it probable that the liver-tissue may be regenerated and the loss made good.

b. That the escape of bile into the peritoneal cavity is not a usual phenomenon after such an operation; that it may generally be prevented either by searing the raw surface of the liver, by ligation, or by securing the stump in the abdominal wound, and that, even if the bile so enters the peritoneal cavity, the result is not necessarily fatal.

c. Hæmorrhage need not be greatly feared. The vessels can often be tied separately or in mass, or cut through by the cautery, or controlled by pressure, or by a combination of these means.

d. The resection or amputation is best done by enucleation, by the cautery or by the knife or scissors, preferably perhaps in the order named. In case of a tumor with a very large base of attachment, the operation may be done in two stages, the base being surrounded by an elastic ligature in the interval.

e. The mortality thus far has been only about ten per cent.

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GALL-BLADDER SURGERY.

(*a*) One Case of Impacted Gall-Stones; Perforation; Death without Operation. (*b*) Four Exploratory Operations on the Gall-Bladder. (*c*) Six Cholecystotomies for Gall-Stones.

BY MAURICE H. RICHARDSON, M.D.

My attention was first called to the importance of gall-stones by a case which occurred in the practice of Dr. S. J. Mixter some ten years ago. He will remember a woman who passed a very large gall-stone, at least an inch and a half in diameter, by rectum. Later this patient died from acute intestinal obstruction caused by the lodgement of another stone so large as to obstruct entirely the lumen of the bowel. This condition must be considered infrequent if not unique: but it shows one of those rarer conditions which may occur after the dislodgement of an impacted stone and its escape into the intestine.

During the next six or eight years I saw occasionally cases of biliary colic, soon relieved by the escape of the stone. I have made it an invariable rule to examine the fæcal discharges for at least a week after an attack of biliary colic. My method has been to pass the fæces through a fine-meshed sieve, myself. Great care has to be taken in many cases not to crush the soft and recently-formed stone. The importance of this procedure, I think, will appear in the cases which I have to report. Had such care been taken early in the history of my operative cases, the diagnosis would have been very clear indeed. So carelessly have these investigations been made, when they have been made at all, that I have not been willing to eliminate the existence of gall-stones from the fact that none have ever been discovered in the discharge. I recall one case very distinctly in which there was a clear history of biliary colic, and where at the end of a week I found a small, bright yellow stone of very recent formation, which without the most careful manipulation would have been crushed in passing the fæcal discharges through the sieve.

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[7] Lancet, 1891, i, 1091.

Before reporting this evening those cases of prolonged and unnecessary suffering which have been entirely relieved by operative measures, I wish to report in considerable detail one of those lamentable occurrences which have not been infrequent in the history of medicine, and to avoid which is one of the chief objects of this paper. I refer to the case of a young woman, prominent in society, with a young family and with everything to live for, who died from the perforation of the common duct by an impacted stone, with all the symptoms of a general peritonitis. In this case, as in all other cases to be reported, the matter of diagnosis was of the first importance. It is very necessary for us to differentiate impacted gall-stones from malignant disease. The distinction between certain cases of gall-stone impaction and cancer or tumor pressing upon the duct and causing jaundice is at times very difficult. Some of the most skilful diagnosticians have erred in this respect. In most of the cases published herewith, some experienced man has been mistaken. In the majority of cases the symptoms are almost entirely subjective. There are no physical signs whatever on which we may depend for diagnosis, beyond jaundice and emaciation. The histories of the cases should therefore be taken with great care, and much reliance must be placed upon the patient's statements as to the origin, duration, character and direction of the pain. Believing firmly that the diagnosis must depend more upon the history than upon the physical examination, I shall report most of the following cases in some detail as to their subjective symptoms. The statements of the patients which have any bearing upon the diagnosis I have reproduced from my short-hand notes. As will be seen in all of them, whether simple exploratory incision or cholecystotomy for the removal of stones, with one or two exceptions, there have been no local physical signs whatever.

(a) GALL-STONE IMPACTED IN THE COMMON DUCT; PERFORATION; DEATH WITHOUT OPERATION.

Case I. Mrs. T. D. P., aged thirty. First examined December 3, 1888. Married seven years; three children; two miscarriages; belongs to a family who have all died at about middle age or young. Father died of consumption; one brother died of appendicitis; a sister died at sixteen of some mesenteric trouble; another of Roman fever in Florence; one sister living and well; one brother living and well; one paternal uncle died of consumption; another lived until he was fifty and died of some brain trouble; grandmother now living.

Mrs. P. has been troubled with epilepsy. Has had post-partum hæmorrhage twice. More or less womb difficulty. With the exception of the epilepsy and the uterine trouble has always been well. About seven years ago there was cramp in the stomach and colic, just below the right breast. It was a pretty severe pain; would come on any time — night or day. No vomiting until recently. In the beginning she took sulphate of zinc to make her vomit. This would relieve the attacks. There seemed to be no connection between the food and the attacks of pain. Of late years the attacks have been of the same kind and constantly more severe. Between the attacks she would be perfectly well. Had a slight attack in July, and in the latter part of August another, which has persisted ever since. It was preceded by a miserable feeling. Jaundice has been present all the time since August. Movements of the bowels white, and urine very dark. The pain in this attack has been in the pit of the stomach, and it was so severe that she could not bear the bedclothes.

Physical Examination. — A large, strong, healthy-looking woman, considerably jaundiced. No evidence of disease in the heart or lungs. Urine dark-colored. Nothing in the abdomen. Liver somewhat enlarged. No distention of the gall-bladder could be made out. There was some tenderness in the region of the gall-bladder. Pulse and temperature normal.

This case was sent to me by Dr. Paddock, of Pittsfield, with diagnosis of gall-stones obstructing the common duct. I concurred in this diagnosis, and on November 14th wrote: "It seems to me that this is a case of gall-stones, which has resulted in obstruction of the common duct. I do not believe that anything can be done to relieve gall-stones except surgically. I should not advise operation in this case unless the symptoms are more severe than they are at present." December 24, 1888: "I am inclined to look upon the case as one of obstruction to the bile from gall-stones. During her visit here I think she has improved. Dr. —— has seen her with me, and looks upon it as a case of neurasthenia, with gastralgia. As far as I am concerned I do not, and have not seen any indications for surgical interference." Early in March, 1889, Mrs. P. was taken with symptoms of violent peritonitis, and on the 5th I was sent for to open the abdomen. She died a few moments after my arrival in Pittsfield. At the autopsy, a large stone was found in the common duct. Perforation had taken place and the patient had died of peritonitis.

It is quite evident that this most unfortunate result might have been avoided had we known positively that there was a large stone impacted in the common duct. It was impossible to be sure of this, however, and it was the opinion of one eminent diagnostician that this condition did not exist. The symptoms at my last examination were improving, and it seemed after a deliberation of four weeks and a careful study of the case best to delay. In the light of the experience which I have acquired since, and from the gratifying results which have followed exploration in these cases, I should not now hesitate a moment in advising as strongly as possible the necessity of an exploration. While it is well known that stones, even of large size, make their way safely into the intestine, it is certainly not infrequent that a disaster like this results. In a case with a similar history I should not be willing now to take the responsibility of delay. Persistent localized pain with exacerbations accompanied by jaundice, if due to a stone at all, mean a large one hopelessly impacted, and demand interference.

(*b*) EXPLORATORY OPERATIONS ON THE GALL-BLADDER.

Case I. Tumor of the gall-bladder, due probably to malignant disease; abdomen opened; gall-bladder emptied; cancer of the head of the pancreas pressing on the common duct; death at the end of ten days; autopsy; cancer of the head of the pancreas extending into the liver.

C. C. R., aged thirty-nine. Examined September 7, 1889, with Drs. Carlton and Peirson. Two years before, an attack of malarial fever lasting four or five weeks, followed by jaundice. Has had recurrence of the fever and the chills since. Eight weeks after the appearance of the jaundice a large tumor was noticed below the liver. The jaundice disappeared about a year ago, and he was perfectly well during the summer. In the spring of the present year the symptoms reappeared with a great deal of malaise. There was considerable loss of flesh; jaundice was present and persistent. Went to Clifton Springs, and in three weeks was much improved. At the end of that time had a gall-stone, which caused great pain for two hours and a half. The gall-stone passed and he felt better than he had for the previous six or eight months. The jaundice did not disappear, although he bleached out a little. The pain was very sharp when the stone passed. He never had had any such thing before. He looked for it in the first discharge, but did not find it. With the exception of these symptoms his general condition was good. Family history good. Loss of flesh excessive. Under the margin of the ribs on the right side, there was a round, fluctuating tumor extending down into the right iliac fossa. Two or three hard nodules could be felt at the upper part of the tumor. Very much jaundiced and very much emaciated. The tumor was apparently movable. Pulse good and general condition such as to justify interference. Probable diagnosis: malignant disease obstructing the common duct.

On careful consideration of this case it seemed to me probable that the man's disease was malignant, although there was a clear history of at least one gall-stone attack, and that the distention of the gall-bladder and jaundice were due to an obstruction somewhere in the common duct. Exploratory laparotomy was performed on the 9th of September, 1889. Incision was made over the right linea semilunaris, on the edge of the liver, about three inches in length. The liver was found with several small nodules on the under part of the great lobe. The gall-bladder was much distended and reached as far as the crest of the ileum. The gall-bladder was emptied through an aspirating needle and about a quart of fluid as clear as water was withdrawn. The hole made by the trocar was sewed up with fine silk. Exploration of the parts revealed malignant disease in the neighborhood of the common duct and the under surface of the liver, The patient died at the end of about ten days. Post-mortem examination showed that there was cancer of the liver with primary disease of the head of the pancreas.

In this case an operation was performed because I was not perfectly certain of the diagnosis. There was very little difference of opinion among those who saw the case that the cause was probably the pressure of a new growth. I did not feel, however, that it was absolutely certain that the cause could not be removed, and this in my opinion, then as now, justified the operative interference. The fatal result was not due to peritonitis or any wound infection. The man died at the end of a few days, as, in my experience, so many do who are much reduced by long-standing malignant disease.

Case II. S. L., aged fifty-eight, painter, married. Massachusetts General Hospital, July 22, 1890. Thirty-eight years ago had Panama fever — chills and fever. Dyspepsia at times. Eight months ago noticed that he was losing flesh and running down.' At times troubled with colicky pains and flatus. No vomiting or pain after food. Since then has been losing flesh and appetite. Has lost forty-five pounds. Six weeks ago noticed lump in right hypochondrium, which patient thinks moves and feels like a bladder. Five weeks ago began to be jaundiced. This has increased, with clay-colored stools and intense itching.

No pain or other subjective symptoms. Examination showed marked general jaundice and emaciation. Skin was dry and harsh and covered with excoriations. The tongue was dry, with slight brown coat. There was a large mass in the epigastrium from enlarged liver, on which a small nodule could be felt. He vomited about a pint of brownish, muddy fluid on July 12th. No blood was found in the vomitus by the microscope. Stools were clay-colored. On July 22d, under ether, a vertical cut was made over the region of the gall-bladder. The abdominal wall was very thin and lax. The gall-bladder was found non-adherent, dilated. The hand introduced into the cavity of the abdomen could detect nothing suggesting neoplasm. There were no stones either in the gall-bladder or in the ducts. The bladder was aspirated and about a pint and a half of pure bile was withdrawn. The fundus of the gall-bladder was then stitched into the abdominal wound with interrupted silk sutures. The bladder was opened *in situ* by a one-inch incision. The mucous membrane was found thickened and injected. A probe was with difficulty passed into the common duct. The bladder was thoroughly washed out with warm water and a rubber drain left in it. The usual dressing, with swathe, was applied. There was a discharge of about one ounce of bile daily into the wound. On the 26th the bowels moved. Stools still clay-colored. Urine the same as before. He gradually failed, and died on 31st of July. The autopsy showed cancer of the head of the pancreas.

In this case, which was referred to me from the medical side as a case of probable gall-stone impaction, a fatal result followed the operation, as in the previous case, where the patient was subjected only to the slight danger of exploration. The wound healed well, and there was no peritonitis. If his disease had been less advanced, or if he had been brought to his state of weakness by a simple obstructive cholæmia, I think he would have recovered. The case, though fatal, was not so from the operation.

Case III. Mrs. Robert H., aged forty-one, Lawrence. Seen with Dr. Chamberlain on April 9, 1891. A week or two before, Dr. George M. Garland, of Boston, had made a careful examination and advised an exploratory laparotomy. Had the grip about a year before, and has not been well since. Has suffered dreadful pain in the stomach during the past summer (indicating the region of the stomach on the left side.) The pain has continued more or less for a year. In the previous July fell on a chair striking the left side. The pain comes on suddenly. She began to be jaundiced on October 1st. In the beginning the pain was entirely on the left side, and did not go into the right until two months ago. There has been great loss of flesh, without vomiting. Used to have chills. Vomiting has come on within the last six weeks. No abnormal appearance to the vomitus. Stools clay-colored; urine dark. She has complained of pain in the region of the right kidney, and there is great tenderness over the gall-bladder. No elevation of the temperature. On examination there was a tumor found in the region of the gall-bladder which shaded off in different directions. It seemed to me to be the liver. I thought at the same time I could feel one or two small nodules. Diagnosis: probably malignant disease of the liver. I concurred in the opinion of Dr. Garland as to the advisability of an exploratory laparotomy on the chance of finding something that an operation would remove. A longitudinal incision was made in the right linea semilunaris over the gall-bladder. The liver was immediately exposed, and, with the gall-bladder, came into view. The gall-bladder was normal, but there were numerous cancerous nodules in the liver. The wound was closed with interrupted wire sutures. The whole operation did not take over ten minutes. She made a good recovery, and her death, which took place some months later, was not hastened by the exploration, which satisfied physicians, patient and friends.

Case IV. Mrs. L., aged sixty-two, a patient of Dr. Jackson, of Weston, was seen in consultation with Dr. Cutler, who advised an exploration of the gall-bladder. Mrs. L. said that she had had bilious attacks and pain, accompanied by chills, for some time. The pain was very sharp in the right side, running to the back and shoulder: also a burning, deep in the right hypochondriac region. No real dyspepsia. There is a burning in the side, and at times she cannot straighten up on this account. No loss of flesh; some loss of strength. A small, smooth mass, the size and shape of a kidney, slightly movable, in the region of the right kidney; an enlarged area of hepatic flatness, and an apparent enlargement in the region of the gall-bladder. Temperature persistently above normal daily for the past five months. Never more than 102°; usually from 100° to 101°. Sleep good; bowels apt to be constipated. The diagnosis was necessarily obscure, but it seemed wise to us all to make an exploration. On November 17, 1891, I made the usual incision parallel with the ribs on the right side until the gall bladder was reached. The parts were much adherent to one another, and the omentum was very firmly fastened to the gall-bladder. There was an adhesion also to the hepatic flexure and the beginning of the transverse colon. These adhesions were very carefully separated from the gall-bladder, and, with the hand introduced into the abdomen, nothing could be felt in the common, hepatic or cystic duct. Nothing abnormal could be detected in the region of the pancreas. The gall-bladder was contracted, and evidently had been the seat of some trouble. The whole condition was very similar to that found in the cases of prolonged gall-stone impaction, where the gall-bladder has become contracted and its walls thickened. Mrs. L. made a very good recovery indeed from the operation, and at first was relieved of the dragging pain of which she complained before. Later she had a good deal of trouble in one shoulder, which had no connection whatever with the operation. I am informed by Dr. Cutler that of late she is somewhat better than she was before the operation, but, up to quite recently, the attending physician, Dr. Jackson, states there has been no benefit whatever from the exploration.

(c) SIX CHOLECYSTOTOMIES FOR GALL-STONES.

Case I. Mary W. This was the case which was reported in the Journal, Vol. CXX, p. 414. She was referred to the hospital by Dr. Titcomb, of Concord. She had a history of pain in the side, associated with a very movable tumor on the right, just below the border of the ribs. The opinion was rather in favor of a movable and malignant kidney, though Dr. Titcomb had sent the case in as one of gall-stones. I found it to be an enlarged and distended gall-bladder, from which I removed six stones of moderate size. One was squeezed from the common duct into the duodenum. The sac was partially removed, and the base sewed into the abdominal wound. A fistula remained, which closed in a few weeks, and there has been no trouble since.

Case II. Mrs. C. K., aged forty-eight, married. Massachusetts General Hospital, September 7, 1890. Has passed the menopause. At times has been subject to attacks of quinsy. Three years ago there were chills and fever. One year ago first noticed pain in the right side, coming on gradually. Afterwards the pain was in the epigastrium, and was not associated with ingestion of food. At the same time jaundice appeared. This has continued ever since, although at times less marked than at present. Since then there have been several similar attacks of pain, coming on rather quickly, and disappearing gradually. The pain is of a cutting, raw variety, beginning always in the right hypochondrium and radiating into the epigastrium. The attacks have always been associated with vomiting. Stools greenish. Nothing has ever been found by physicians in the contents of the stools. Ten days ago there was a very severe attack, requiring morphine. There had been none before for a month. Two days ago there was another severe attack. The itching at times is intense. Duration of attack eight to ten hours. There has been average loss of flesh. Fairly nourished; skin saffron yellow; pulse slow, and at times intermittent. There is a trace of albumen in the urine, with an occasional hyaline cast and renal cell. Tenderness at the edge of the liver, which can be felt, smooth and regular. Gall-bladder not made out.

On September 9th, under ether, an incision four inches in length was made in the right linea semilunaris from the level of the margin of the seventh rib. The abdominal wall was thick and vascular. Omentum firmly adherent along the lower margin of the liver. The adhesions were broken up with the finger, and the gall-bladder, which was atrophied and flaccid, exposed. A hard, round mass was felt by the finger in the region of the common duct. The bladder was drawn up and opened. With two fingers of the right hand down deep below the common duct and with the index-finger of the left hand in the gall-bladder, a stone could be felt as large as a walnut. After some difficulty it was withdrawn. This stone was in the common duct. Another stone was found in the hepatic duct, and was removed in fragments with long, common, polypus forceps. This stone was followed by a copious flow of bile, which was kept out of the peritoneal cavity as much as possible with sponges and irrigation. The gall-bladder was too much retracted and tied down by adhesions to admit of its being stitched to the abdominal wall. The upper lip of the incision, however, was drawn up to the parietal peritoneum, while the lower was left loose. A glass drainage-tube was placed in the gall-bladder, and iodoform gauze packed about it. The abdominal cavity was thoroughly irrigated with warm water and the wound left partly open. The lower half was brought together with wire sutures and the upper half packed with gauze around the tube. A large absorbent dressing was applied with rubber pellicle about the tube, and the whole fastened in place with plaster and flannel swathe. The operation lasted one hour and an eighth. In the evening the dressing was stained with bile, which escaped freely from the tube on its removal. A siphon was arranged to carry off the bile. Patient put upon liquid diet. Thirty-six ounces of bile were siphoned off in the next twenty-four hours.

The patient went on very well indeed for several weeks. The fistula became well established. Jaundice slowly began to disappear. Gauze was removed from the wound on the 13th. The wound was clean. On the 19th the fæces were slightly stained with bile. On the 25th there was a discharge of very foul pus from the wound. The temperature had been up for some days. The pain in the back and right side, which had been constant for several days, gradually disappeared after the discharge of pus. Temperature became normal. Siphonage was omitted. Later the temperature kept rising, and the general condition was worse. There were chilly sensations and fever. The malarial history was thought to account for the chills. On the 29th an opening was made in the lower part of the wound communicating with a pus cavity which contained about half an ounce of pus. The opening was dilated and the cavity syringed out. Siphonage begun again. On October 2d there was a slight discharge of pus. The amount of bile was reduced to fifteen ounces. There was considerable vomiting. The temperature at times rose to 104°. She died on the 10th of October.

At the autopsy a gauze sponge was found at the bottom of the pus cavity, from which there had been an infiltration posteriorly, and from which the patient died septic.

In this case, at the time of the operation, it seemed to me that we had a most formidable condition of things. The gall-bladder was badly torn, and it was so contracted that it was out of the question to think of trying to sew it to the abdominal wound. The long obstruction to the flow of bile had dilated the liver-ducts to such a degree that large quantities of bile were stored there, ready to pour out over the wound and into the abdominal cavity the moment the obstruction should be removed. When the stone was removed from the hepatic duct, there was an abundant escape of bile, much of which covered the intestines and escaped into the peritoneal cavity. This formidable emergency could be met only by making anastomosis between the gall-bladder and intestine, or by closing entirely the bladder by suture, or by doing as I did at the time, putting a tube into the hepatic duct and tying the gall-bladder, or its remains, about the glass tube. In this case, as in several subsequent ones, this method has proved perfectly satisfactory and successful.

During the operation large quantities of bile escaped, in spite of all efforts to prevent it, and covered the surrounding parts. The immediate effect of the introduction of the tube with the gauze packing was to shut off the rest of the abdominal cavity. On removal of the gauze, the general cavity of the abdomen was entirely and firmly protected by the recent adhesions.

The method employed at that time to prevent the leaving of sponges in the abdominal cavity was to have a special nurse whose duty it was to count the sponges before and after the operation, to watch such as were introduced into the abdominal cavity, and to be responsible for them as far as possible by devoting her attention to nothing else. At this operation the nurse counted the sponges very carefully before and twice after the operation, and reported them all present. It seemed to me at the time that these precautions were ample, and as thorough as any taken elsewhere. The lesson which I have learned is to have more than one count made by at least two different persons, both before and after the operation.

Case III. Harry K., aged twenty-four, detective. Massachusetts General Hospital, October 1, 1891. After leaving the hospital where he was in the spring of 1889, with similar symptoms, which were not treated surgically, he felt perfectly well until September 15th, when he had a severe attack, which lasted four weeks. Since then he has had six or seven attacks at intervals of from three to five months. The interval increased and the duration of the attacks diminished until the present one, which has continued since August 22, 1891. He has received all kinds of treatment, including massage. Morphia is the only thing that relieves him. Ether makes him crazy. When in pain he does not know what he is doing, though he can tell you afterward. The pain comes on suddenly. It starts in the pit of the stomach and travels through the right hypochondrium into the back. In some of the attacks he has been jaundiced. Bowels were constipated. There was blood in the dejections at times. He has lost considerable in weight the past two years. He has taken a great deal of morphia (nearly a grain, if not more) a day. When seen in the ward, the patient was very nervous and apparently in some pain. Attacks of pain came on about 3 P. M. This patient was examined by most of the physicians and surgeons in the hospital. Some advised operation, and others did not think it necessary. There was a good deal of doubt expressed as to the presence of any foreign body in the gall-bladder. Dr. F. C. Shattuck, who turned the case over to me, insisted that a stone was present, which proved to be so.

On October 6th an incision six inches in length was made parallel to the ribs and below the edge of the liver. It was carried well into the flank. The abdominal parietes were thick and muscular. The hand was introduced into the abdomen, and the gall-bladder found and drawn into view. The parts about the gall-bladder were slightly adherent to it. A small stone could be felt through its parietes. Over the stone the bladder wall was very thin and friable, and had every appearance of being about to be perforated. The bladder was incised, and a small, sharply angular stone removed. The wall was too friable to suture to the abdominal wall, and therefore a ligature was passed around the bladder near its base, and the whole removed. Previously a probe showed that the common duct was patent. The lower end of the incision was closed with silk and wire. The upper end, about the stump of the gall-bladder, was packed with iodoform gauze, which was brought out of the wound. Dry dressing was applied. On the next day the dressing was stained with bile. The stitches were out on the 13th. The patient made a slow but gratifying recovery. He was very nervous, and seemed to suffer much for some weeks. The gauze was entirely removed on 23d. He was discharged from the hospital in November, and has remained well up to the present time (April 14, 1892).

In this case there was a good deal of difference of opinion, some thinking that there was nothing mechanical to cause the pain, and others being quite confident that a gall-stone was at the bottom of the trouble. The situation and impaction of the sharp stone, with the ulceration and inflammatory condition of the parts, seemed to me quite sufficient evidence that the whole trouble was caused by the calculus. His perfect recovery justifies the diagnosis and the operation. (Patient exhibited.)

Case IV. George F., aged fifty-eight, gentleman. History of gall-stone extending over eight years, with occasional attacks of jaundice. Great suffering and almost complete disability. Referred to me by Dr. J. P. Oliver. Diagnosis confirmed by Dr. Fitz.

Operation on October 10, 1891, at St. Margaret's, assisted by Dr. Mumford. An incision parallel to the ribs was made just at the outer border of the rectus abdominis. Through a small space free from muscular tissue the gall-bladder was exposed by a small incision and the fingers introduced into the abdomen. A row of gall-stones could be felt in the cystic and common ducts. The base of the gall-bladder, which was in contact with the anterior abdominal wall, was united to the wound by numerous interrupted silk sutures. On opening the gall-bladder bile immediately escaped, and seven large stones, one after another, were removed from the cystic duct. By means of the polypus forceps the last stone, which projected into the common duct, was removed — the stone which had caused the jaundice in this case. After the operation a drainage-tube with siphonage was introduced into the gall-bladder. The patient made a rapid recovery, but a fistula still persists, and will probably require a secondary operation to close it. In this case, as in the first, the obviously safe method was to sew the bladder to the abdominal wall. There was nothing difficult about the operation.

Case V. Mrs. E. L. W., aged thirty-seven, referred to me by Dr. George M. Garland, consulting physician, and Dr. Knight, of Milford, Mass., attending physician, December 15, 1891, entered the Massachusetts General Hospital. Present trouble began with pain in the stomach at the age of seventeen, which lasted about an hour. Had a few similar attacks, and then went two years without pain. From that time to the present there has not been a whole year without pain. First noticed jaundice a year ago. It was accompanied by pain and vomiting. No blood; urine dark. The pain was sharp and came on suddenly, lasted a few hours, and then went away. Jaundice came on a few days later. Has been jaundiced for the past year. Pain has been growing worse, so that she has been unable to work. Has had three or four attacks since last year. Diagnosis: gall-stones impacted in the common duct.

On December 29, 1891, an incision five inches in length was made, parallel to the ribs, on the right side. The incision was enlarged for the introduction of the hand. The gall-bladder was found with some difficulty, on account of the numerous adhesions. It was contracted and could not be brought in contact with the anterior abdominal wall. Stones could be felt in the common and hepatic ducts. An opening was made in the fundus of the bladder, and eight stones were removed from the common and hepatic ducts. One large stone was so firmly impacted in the common duct that it was impossible to stir it before it had been completely broken up by common polypus forceps, which in my opinion, is the best instrument for this purpose. The duodenum presented in the wound throughout the operation, and the manipulations of the stone with the right hand had to be made through the layers of the duodenum. During the manipulations large quantities of bile were discharged over the parts, which were washed off with warm water from time to time. The stones which were detached from the common duct would become lost in the dilated hepatic, and quite prolonged manipulations were necessary to recover them. A glass tube was placed in the hepatic duct, and iodoform gauze was placed about the tube down to the base of the gall-bladder, which had become much torn by the manipulations. A dry dressing was applied. There was considerable flow of bile. The stitches were removed on January 6th, and the gauze was out at the end of a week. January 9th the tube was out. A gauze drain was left in position. Bile was first noticed in the stools on January 18th. On February 10th the wound was entirely healed. Jaundice had then nearly disappeared and she was feeling as well as ever. She was discharged on the 16th of January, and has remained perfectly well ever since.

Case VI. Elbridge B., aged fifty-two, referred to me by Dr. Fessenden, of Salem, and by Dr. C. F. Folsom, consultant, of Boston. Previous health good. Present trouble began with what he thought to be an attack of acute indigestion, after eating chestnuts, about eight years ago. The pain was described as "dreadful distress." A dose of morphine relieved him and he got up the next morning all right, that is, all right as far as the distress was concerned. He was very yellow for some days. The next attack was last July. He had jaundice, but no pain, nothing but "a miserable feeling all over." At other times it would be what he called a "horrible feeling." His weight was reduced from 170 to 125 pounds. The liver could easily be made out, but nothing else could be detected by examination of the abdomen. He was deeply jaundiced.

Operation was performed at St. Margaret's, on February 9, 1892, assisted by Dr. W. A. Brooks. An incision was made on the right side parallel with the margin of the ribs, at the outer border of the rectus abdominis. This brought me down upon a small muscular space at the outer border of the rectus just over the normal position of the gall-bladder. On cutting through this and exploring with the finger, I could feel gall-stones somewhere in the region of the common duct. The incision was enlarged downwards and outwards, and upwards along the outer border of the rectus, making a semilunar incision with the convexity downwards and to the left. The liver was distinctly enlarged and projected about two inches below the border of the ribs. It was dark in color and had a congested appearance. In the sulcus where the gall-bladder was situated the omentum was firmly adherent, not only to the sulcus itself and to the under surface of the anterior border of the lobe, but to the fundus of the gall-bladder. There were no other adhesions. The gall-bladder was contracted and its walls were thickened. It was impossible to separate the adhesions of the omentum and the liver without tearing; I therefore clamped them and tied them off. This brought the fundus of the gall-bladder, from which the adhesions had just been cut, into view. An incision was then made into the fundus large enough to admit the finger. The whole lumen of the gall-bladder was not larger than the index finger. On dilating with the finger at the cystic duct, there was a sudden large flow of bile which pushed before it a large gall-stone three-quarters of an inch in diameter, faceted. This was followed in a few moments by another. I then dilated the cystic duct a little further and could feel another gall-stone, which I delivered with the forceps, having first crushed it. No other stones could be detected through the interior of the gall-bladder. I therefore inserted my right hand into the abdomen, and feeling through the stomach and duodenum detected a mass of gall-stones apparently lodged in the common duct. These, without much difficulty, were detached and pressed up into the hepatic duct, into the liver, beyond the opening of the cystic duct. With a great deal of difficulty I managed to squeeze them out through the cystic duct, and two more were delivered uninjured. The last one I caught with the common polypus forceps high up in the hepatic duct and removed. The operation, from the time of the ether until the end, occupied forty minutes. The wound was occasionally irrigated with warm water during the operation, and the parts were protected from the escape of bile, as well as possible, by packing with sterilized gauze. There was considerable hæmorrhage from the liver at the point of the separation of adhesions. The patient's condition during the operation was excellent. It was impossible even to approximate the walls of the gall-bladder to the abdominal wound. I therefore put a glass drainage-tube through the gall-bladder into the hepatic duct, and packed around carefully with sterilized gauze and applied a rubber tube to the end of the glass tube for siphonage. This gentleman made an uninterrupted and rapid recovery, and was discharged from St. Margaret's, perfectly well, on the 25th of March. It took about three weeks to remove the gauze, little by little. At the end of that time the passage of bile through the common duct had become fully established. In a short time the abdominal wound was entirely closed by granulations, and the patient increased very rapidly in flesh and strength. The jaundice had almost entirely disappeared at the time of his discharge.

The most important factor in the diagnosis of gall-stones is the history. Physical examination adds very little, if anything, to it. Recurrent attacks of pain with transitory jaundice, persistent discomfort extending over a long period of time, accompanied even with a general cachexia, unless the anæmia is steadily progressive, are the most important diagnostic points in the distinction from cancer. Several patients upon whom I have operated, and others where I am considering the question at the present time, describe their discomfort as a "terrible distressed feeling," rather than actual pain. I have been struck by the similarity of the expressions used to give an idea of their sufferings. The presence of a dilated gall-bladder does not accompany the one condition any more frequently than the other. Patient examination of the discharges after an attack should be made, and all the fæces should be passed through a fine sieve. Even the most experienced diagnosticians, however, may be mistaken. In most of my cases some one eminent medical man has been mistaken. I refer again to this fact to justify the opinion that in all cases where there is any doubt, the patient should be given the benefit of it, and an exploration should be made.

The prognosis in cases of long-continued impaction is certainly grave. In most of my cases I do not believe that Nature would ever have effected a cure, or not without great danger of some serious disaster, as in the first case reported. The prognosis after operation seems to me very encouraging indeed. With the exception of the second case of cholecystotomy, all have recovered, not only from the operation but from the symptoms demanding it. In the second case, I think I can claim recovery from the immediate dangers of the operation, and while the sponge was doubtless the direct cause of death, this accident could hardly have been provided against more carefully than it was at the time. I think that I can say that few men at that time took any more effective precautions than to have one experienced nurse whose duty it was to attend to the sponges and nothing else. The lesson I have already emphasized, is to confide that duty to no less than two individuals.

The best cut for operation, the extent of which is uncertain beforehand, is, in my opinion, that which starts a little to the left of the linea semilunaris, an inch from, and parallel to, the margin of the ribs, and carried across the fibres of the external oblique. At the outer border of the rectus there is a small space quite free from muscular fibre where the fundus of the gall-bladder is generally in contact with the peritoneum. At times the tranversalis fibres intervene. Through this spot the bladder may be explored with one or two fingers. If necessary, the cut may be continued upwards along the outer border of the rectus, and downwards and outwards parallel to the margin of the ribs. In this manner a very satisfactory view of the parts may be obtained.

In most cases of long standing I have met with adhesions. At times it is very difficult to separate them. If it complicates or delays the operation there is the advantage of being less danger of bile escaping into the abdominal cavity. The fourth exploratory operation shows that a part of the discomfort, at least, may have been caused by the loaded colon dragging upon the gall-bladder.

If the bladder is loose and presenting, it should be sewed to the abdominal wound, once having completed the exploration of the common duct, and having become satisfied that in order to detach the stone it will not be necessary to have one hand in the abdominal cavity outside the gall-bladder. The line of suture having been completed the bladder may be opened.

Where the gall-bladder is contracted upon a stone, or is so inelastic that it cannot easily be drawn to the abdominal wall, or where it is necessary to open the common, hepatic of cystic duct, I believe there is no method so rational or so successful as that employed in four of my cases (Fig. 1). A glass-tube fitted into the open duct and packed about with gauze, with the addition of siphonage, gives a most excellent and satisfactory drainage, with which I have as yet seen no bad results. This method may be applied to any condition of obstruction or impaction (Fig. 2).

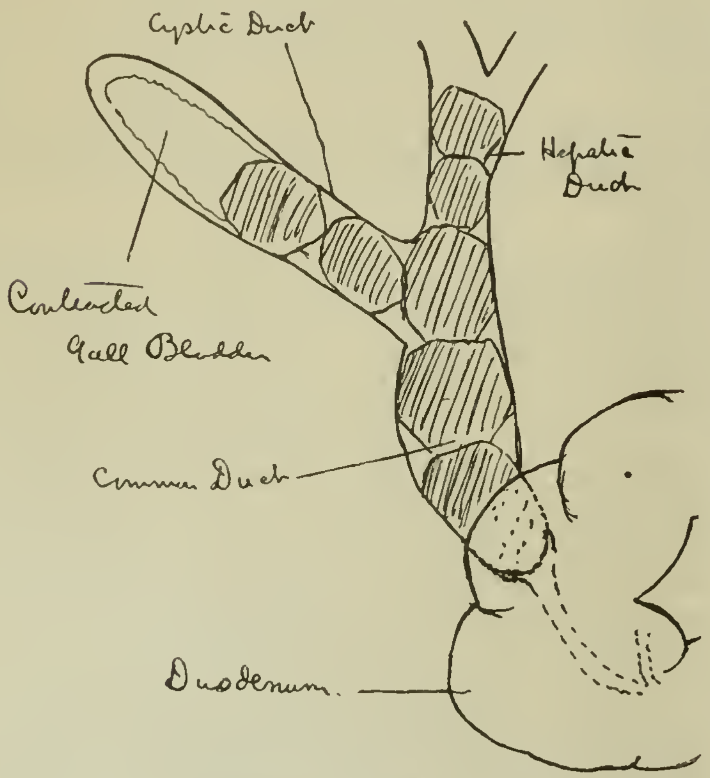

Fig. 1. Diagram showing position of stones in Cases II, V, VI.

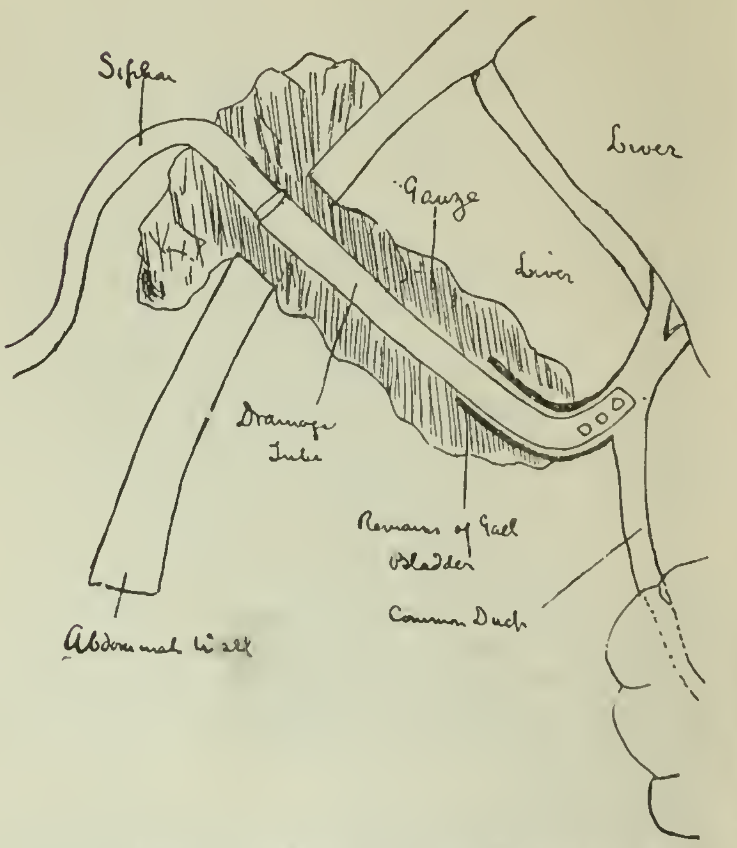

Fig. 2. Diagram showing position of drainage-tube and gauze.

The gauze should be removed gradually until all is out. I have seen most gratifying results follow this method of shutting off the general cavity of the peritoneum in operations for appendicitis and intestinal resections. The gauze, through its meshes, exercises an irritating effect which causes an almost immediate adhesive peritonitis.

The effect of bile escaping in large quantities into the wound seems to be negative. In no case has there been any ill effect. It must have escaped in considerable amounts into the region of the gall-bladder in most of the operations. The anatomy of the parts, however, would tend to confine the fluid to the immediate vicinity of the foramen of Winslow. The transverse mesocolon and the hepatic flexures of the colon prevent bile escaping except in the right flank. The duodenum, pyloric end of the stomach, and the lesser cavity of the omentum through the foramen of Winslow, would be the only parts immediately invaded, and all these are apt to be shut off by adhesions in long-standing cases.

Patients suffering from symptoms of hepatic colic who have advanced into a profound cholæmia do not seem to offer as favorable prognosis as more recent cases, nor to be so favorable for operative interference. The stone is likely to be larger, and the danger of ulcerative processes greater, and the patient seems to run greater risks from attempts at relief; yet, so far as my observation and experience go, the most advanced cases have done as well as the most favorable ones, and I think the time has come when we should advise all patients, where a moderately certain diagnosis has been made, that after waiting a reasonable time for Nature to effect relief, the chances for recovery and usefulness are better when we resort to modern surgical art.

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SECONDARY LAPAROTOMY FOR PISTOL WOUND OF THE LIVER, WITH A REPORT OF A CASE.[1]

BY HOMER GAGE, A.M., M.D.
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The natural history of wounds and injuries of the liver, aside from the interest which attaches to the subject of itself, is of interest because it illustrates the extent to which mutilation of the liver is possible without interference with its function, and because it illustrates the natural processes of repair. I desire, therefore, to present the following case with a few observations suggested by its occurrence.

On July 5, 1889, Frank M., aged fifteen, discharged a toy pistol, loaded with a blank metallic cartridge, with the nozzle held firmly against his jacket. It burnt a hole through his clothes and made a wound in the abdominal wall in the right hypochondrium, two inches from the median line and an inch below the margin of the ribs. There was but little hæmorrhage from the external opening, and but little shock, and the wound, which was supposed to be purely superficial, was cleansed and closed. During the night he had very severe pain, and for ten days was confined to the bed. On getting up, it was found that he could neither stand nor sit upright, on account of pain in the region of the wound, but at no time was he regarded as very sick, and there was said to have been no rise of temperature. Within a few days the pain became more severe and he was obliged to return to bed. Then, for the first time, was noticed a decided fulness on the right side, with increased pain and tenderness, associated with progressive weakness and some rise of temperature.

I saw him first three weeks after the injury. He was decidedly undersized, pale, and much emaciated, with a pinched, anxious expression. He complained of very severe pain in the left side, with inability to take a long breath. There was marked fulness over the right side of the abdomen in front, with lateral bulging of thoracic and abdominal walls. There was an area of flatness extending from the lower margin of the ribs on the right to the level of the umbilicus and across to the median line, and over this same area a feeling of elasticity with doubtful fluctuation. The wound had been healed, but its discolored site, surrounded by a red border, was still plainly marked. There was nothing abnormal in heart or lungs. His pulse was 120, temperature 99½°.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

He was removed to the Memorial Hospital, where on July 29th I made a vertical incision two inches long, with the scar of original injury for its centre, The track of the wound was stained black, and was easily followed upwards and inwards to the peritoneum. A black stain on the peritoneum showed that it also had been perforated by the projectile, and a probe slipped easily through it at this point. Upon its withdrawal the opening was enlarged, and more than three pints of thin, dark greenish fluid withdrawn ; the latter part of it was thick, almost like coffee grounds. The cavity in which it had been contained appeared to be shut off from the general peritoneal cavity, on its inner and lower sides, by firm adhesions. On the outer side was the parietal peritoneum, and above it extended around the margin of the liver to the diaphragm. A little more than one-half of the right lobe of the liver lay exposed. All the walls of the cavity, as well as the surface of the liver, were stained of a light green color.

The cavity was washed out with hot water, a counter opening made low in the right flank, and a dry gauze dressing applied The contents of the cavity were sent to Dr. W. W. Gannett, of Boston, for examination, who reported that they consisted of "blood pigment and bile pigment in considerable quantity ; much free fat in a finely divided form; fatty degenerated cells, probably liver cells, and a small amount of fibrin, but few leucocytes."

The patient rallied well from the operation. The wound was irrigated daily, and the profuse discharge, which resembled exactly the fluid removed at the operation, diminished slowly, becoming more and more yellow in color.

On September 7th, five weeks after entrance, he left the hospital with still some tenderness on deep pressure, and inability to maintain an erect position. During the subsequent two weeks he was treated as an out-patient, but with no improvement. The amount of discharge from the sinus increased very much and became of a dark brown color with large lumps of the consistency of putty, whose passage through the sinus caused severe pain. These lumps varied in size from that of a bean to that of a walnut, and were, under the microscope, found to consist of unorganized masses of free fat and fatty degenerated liver cells, stained with bile ; no pus and no blood, One large piece firmer than the rest, was examined by Dr. Scribner, the pathologist of the hospital, and was found to consist of a fibrous stroma, similar to that of the liver, between the meshes of which were to be seen, in some places, liver cells in an advanced stage of fatty degeneration. In other places the meshwork showed where liver cells had dropped out and disappeared. On readmission to the hospital, his pulse was 100, temperature 100½°. The area of hepatic dulness began at the fourth interspace on the right, and extended at least one and one-half fingers' breadths below the margin of the ribs. On the left side it was not increased. There was marked tenderness in the right hypochrondrium, with induration between the sinus and line of incision. The sinus was irrigated daily with a double current catheter, and the amount of putty-like discharge steadily diminished, as did also the area of dulness and induration. The sinus closed October 10th, and by November 1st the area of hepatic dulness had receded to within normal limits, while there was no trace of induration and no tenderness. He could stand and walk erect, slept on either side indifferently, but still had occasional and unaccountable rises of temperature. On November 11th, four months after the injury, he was again discharged. His subsequent history, except for a small abscess which appeared at the site of incision, in December, 1889, has been uneventful, and he is now well, strong and at work.

The projectile was never discovered, and its nature must always remain unknown. But whatever it may have been, and however disposed of, the history of the case shows that it must have penetrated into the abdominal cavity and entered the liver, and probably near the lower margin of the anterior surface of the right lobe. From the hepatic wound had escaped the effusion of blood and bile which was subsequently found encysted, and around the wound had occurred a localized hepatitis with fatty degeneration and sloughing of some of the liver substance. The formation of the strong adhesions which protected the general abdominal cavity was due, I presume, to the smallness of the wound and the very gradual escape of the blood and bile. This view is supported by the absence of severe shock directly following the injury, and the time which elapsed before the swelling in the side was noticed.

This case is, I think, particularly interesting at this time, when the management of wounds of the larger viscera is receiving so much attention, becausesit illustrates the tolerance of the liver for injuries even of considerable severity, the absence of serious results after the loss of portions of its substance, and the natural tendency of wounds here, as in other tissues, if only they are given a chance, to heal of themselves.

In connection with this case, I have collected, with the assistance of Dr. R. Lorini, of Washington, the records of 272 cases of wounds and injuries of the liver, in which the relative frequency of the more important complications, and their fatality, are, I think, quite accurately portrayed.

In classifying these cases, we find that they divide themselves naturally into two groups, according to the manner in which the violence has been inflicted. We have the penetrating or direct wounds, which result from the passage of some foreign body through the abdominal parietes and into the liver, and the cases of rupture from indirect injury, that is, without perforation of the abdominal wall, such as from a blow, fall or crush. Of the direct injuries, we find 164 cases with 58 deaths, a mortality of 35.3%. Of the indirect, 108 cases with 92 deaths, a mortality of 85.2%. Dividing the former class again into two groups, we find that of 54 punctured or incised wounds, 24, or 44%, proved fatal, while of 110 gun-shot wounds only 34, or 30%, were mortal. Of the 272 cases, 150, or 50.5%, died. These figures correspond very closely with the tables of Edler, which showed a mortality of 39.1% after shot wounds and 55% of all cases. It will be seen, therefore, that wounds of the liver are far from necessarily fatal, and that from penetrating wounds nearly two-thirds of all cases may be expected to recover.

As was to be expected, the most frequent, as well as the most fatal, complications were internal hæmorrhage and peritonitis. Curiously enough, the presence or absence of these important factors is unnoticed in a majority of published reports, and the frequency of their occurrence after hepatic injury, as here indicated, is therefore only approximately correct. Of the 54 punctured and incised wounds, internal hæmorrhage is mentioned as occurring in only eight, or about 15%. Of these eight, five, or 62½% were fatal, so that of the 24 deaths from these injuries 20%, at least, were the result of internal hæmorrhage. In the shot wounds, my records are too incomplete to enable me to draw any conclusion with regard to the frequency or fatality of internal hæmorrhage. Of the 108 cases of rupture from indirect violence, internal hæmorrhage is mentioned as occurring in 20, or 20%, and as being fatal in 18, or 90% of the cases in which it was noted.

Peritonitis occurred in 10, or 20% of the incised wounds, and in 10% of the shot wounds. Eight of the former died, or one-third of all the deaths in that class, and of the shot wounds in which peritonitis was developed, six proved fatal, or one-fifth of the total mortality. Its presence was noticed in 15% of the ruptures, and it was responsible for 14% of the deaths.

Abscess of the liver was observed four times as a sequence of incised wounds, with three deaths; five times after rupture, with four deaths, and three times after shot wounds, with one death. It is, therefore, one of the rarer sequels, having occurred in only 5% of all cases.

An escape of bile through the external wound seems to be a common accompaniment of gun-shot wounds, being present in 35% of all cases. Only five of the 37 cases in which it was observed, however, proved fatal, and in these the fatality cannot properly be attributed to the establishment of the biliary fistula.

One of the most interesting features in this collection of cases is the record of fifteen instances in which a penetrating wound of the liver was accompanied by loss of substance with but a single death. In twelve of these cases a piece of the liver was found projecting through the opening in the abdominal walls, and in nine it was ligatured and cut off; in the other three it was allowed to slough off, and in three cases pieces were washed out by irrigation during convalescence, as in the case which I have just reported. The amount removed is, in one instance, described as the size of an apple, in another as large as a goose egg, and in a third as weighing one and one-fourth ounces. In none of them were any ill effects observed.

These figures, though necessarily somewhat incomplete, indicate, I think, with sufficient clearness, the two great dangers which we must meet in these cases, namely, hæmorrhage and peritonitis. Abscess, we have seen, is comparatively rare, and, when present, is a later complication to be dealt with, as if of entirely independent origin. The escape of bile is of consequence only when it takes place into the abdominal cavity, and then only as a cause of peritoneal inflammation. Even the loss of liver-substance may take place without serious danger. The problem is the management of hæmorrhage and the prevention of peritonitis.

In the case of punctured and incised wounds, or of bullet wounds, it would seem that exploratory incision, with a careful cleansing of the abdominal cavity, whenever necessary, was clearly indicated. Suture of an incised wound of the liver has already been performed three times, twice successfully; and if the nature of the injury were such that suture was impracticable, packing with gauze would do very much to control the hæmorrhage, and would quickly exclude the general peritoneal cavity from contact with the wounded surface and its secretions. In the case of subcutaneous rupture of the liver, the problem is not so easily solved. For such cases no definite rule can be laid down. Whenever the manner in which the injury was inflicted, and the symptoms to which it has given rise, point distinctly to rupture of the liver as the probable lesion, incision and exploration are, at least, entitled to some consideration.

These injuries are apt to be so quickly fatal that there is no time for surgical interference. But when the primary shock is survived, and death seems imminent from a slow hæmorrhage into the general abdominal cavity, exploratory incision is, I think, clearly applicable.

Clinical Department.

TWO CASES OF CHOLECYSTOTOMY.[1]

BY A. T. CABOT, A.M., M.D.

These cases of operation on the gall-bladder illustrate two quite different conditions. The first is an example of dilated gall-bladder, due to a stoppage of the cystic duct by a calculus, the condition not being complicated by any considerable inflammation in or around the gall-bladder. In the second case, on the other hand, there was a very great amount of inflammation about the gall-bladder, and the stones which were the cause of the trouble had apparently led to a perforation of the cystic wall, and had escaped into an abscess cavity, lying probably behind the gall-bladder. As the diagnostic points of these conditions are of interest to the surgeon considering the question of operation, the clinical histories are given at some length.

Case I. Mrs. P. was seen by me September 30, 1891, when I obtained the following history:

For ten years she had been subject to attacks of membranous enteritis, accompanied by nausea, griping pains in the abdomen and constipation. For the past six or seven years she had had frequent attacks of severe pain in the epigastrium which always required the subcutaneous injection of morphia for their relief. These epigastric attacks always occurred at times of especial fatigue, and came about four times a year; but since early last spring she had had none of them.

She had been feeling poorly, without appetite and listless, ever since the spring. In the summer she made a trip to the mountains and sea-shore without especial benefit. About the middle of August she had a severe lumbago; after three weeks the pain spread itself over the trunk as a severe general myalgia, and after persisting thus for a week, it gradually subsided, disappearing about ten days before my visit.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

She was always of a constipated habit, had never had hæmatemesis nor had passed blood from the bowels. Had never been jaundiced nor had clay-colored stools.

After the subsidence of the myalgia, pain was still felt in the right hypochondrium; an examination made at this time revealed the presence of a tumor there. Mrs. P. was a well nourished woman of about thirty-eight. but somewhat pale. At the time of my visit there was still slight tenderness in the right hypochondrium, though I was told it was much less marked than it had been the week before. The abdomen was soft, and palpation was well borne and satisfactory. Below the liver was a smooth, globular tumor which reached downwards in the right side of the abdomen to a point below a horizontal line drawn across through the umbilicus. Upon long inspiration the tumor descended still lower into the abdomen, and when Mrs. P. turned on the left side, the tumor changed its position till it lay behind the umbilicus, part of it projecting over into the left side of the abdomen.

The opinion was expressed that the tumor was a distended gall-bladder, probably containing stones, and an operation was advised.

On October 7, 1891, the operation was done under ether. An incision parallel to the lower edge of the ribs was made, over the tumor. This was found to be the distended gall-bladder, and was easily lifted outside of the abdomen. A flat gauze sponge laid under it entirely shut off the wound, and the gall-bladder was then incised in its long diameter, making an opening about one inch long. Through this, considerable glairy mucus escaped, little, if at all, stained with bile. Four calculi were removed. One of the smaller ones lay in the opening of the cystic duct, but was easily dislodged. After this bile began to escape through the opening.

The gall-bladder was attached to the parietal peritoneum by a continuous cat-gut suture, and was also anchored to the skin by four silk stitches. The rest of the wound was closed with silk. A large absorbent dressing was then applied.

The patient made a good recovery, although her stomach at first was very delicate and intolerant of food. The opening slowly contracted, and closed without any drawbacks. Mrs. P. was not strong through the winter, and had some discomfort from dragging sensations about the cicatrix.

Case II. The patient was a slight, delicate woman of twenty-nine, and was seen by me December 8, 1891, in consultation with Dr. A. L. Norris and Dr. J. T. G. Nichols. She had always been troubled with a very sensitive stomach that was easily and often upset. Married for a number of years, she had had but one child eight years before. Since that confinement she had always been subject to abdominal distress, and on two occasions had had attacks of what was thought to be pelvic cellulitis. She had also, during the previous two years, had occasional sudden attacks of pain in the lower part of the chest so severe as to take her breath away.

The present illness began four weeks before I saw her, and was characterized by abdominal pain so severe as to require the use of morphia for its relief, felt more in the right side than on the other. This was associated with much nausea and vomiting, and the breath was extremely fetid. There had been considerable fever with the illness, and Dr. Norris had detected a tumor in the right side of the abdomen, which was very tender to the touch, and which he and Dr. Nichols believed to contain pus. The urine was scanty, high colored, and a specimen obtained at the time of our consultation was found to be stained with bile. There had never been any jaundice, and none was apparent to the eye at this time.

The abdomen was distended and tymanitic, not very sensitive to pressure except in the right side where there was tenderness, both in the hypochondrium and in the right lumbar region.

This portion of the abdomen was occupied by a tumor continuous with the liver, and extending through the right lumbar region well round into that side; this did not move up and down with deep respirations. It being clear that suppuration was going on in the abdomen, probably connected with the gall-bladder, an operation was advised and accepted.

December 9, 1891, operation. Mrs. W. was etherized, and an incision was made over the tumor parallel to the margin of the ribs. This opened the peritoneum just inside of the point where the inflamed, thickened and considerably enlarged gall-bladder was adherent to the parietes. The gall-bladder could be clearly made out along its anterior edge, but outside and behind it was held fast in an inflammatory mass that masked its outlines. The gall-duct was thickened and enlarged to about the size of the little finger, but its walls were so resistant that palpation of it in search of impacted calculi was unsatisfactory. The most careful search failed to show any hard mass in it which suggested a stone.

The gall-bladder was opened, giving exit to about two ounces of thick, glairy muco-pus. The cavity was trabeculated and more or less diverticulated. A careful search was made in it for calculi, but none were found. A probe passed along the duct was arrested before it had gone half-way to the duodenum, but there was no hard body to be felt at the point of arrest.

The gall-bladder was stitched up tightly to the peritoneum, a drainage-tube was introduced through the opening, and the rest of the wound was closed.

The patient had a good deal of retching and vomiting following the etherization. The pain was considerable, but was kept under control by the moderate use of morphia.

During an attack of vomiting, the patient threw up three or four small biliary calculi, and a few days later several were passed in a movement of the bowels.

Improvement was slow but steady. She began to bear food well, and the mass in the right side slowly diminished in size. About a month and a half after the operation, a small biliary calculus escaped through the fistula. Two weeks later more calculi began to be discharged through the opening, and within the next month thirty-two little stones appeared in this way. All of these stones were small and much facetted.

At this time, while these stones were escaping, I was away, and Dr. Norris and Dr. Scudder, who were in attendance, found a hardness just to the outside of the fistula, which gave the feeling as if there were an accumulation of stones just under the abdominal wall; and the patient found that pressure over this spot forced the escape of the calculi. March 2d I etherized the patient for a thorough examination. After enlarging the fistula, it was found that the gall-bladder had shrunk down to a very small size, and the inflammatory mass about it had almost wholly disappeared. Just outside of the fistula, at the point where the stones were thought to have lain, was a cavity between the gall-bladder and the parietes. During this examination the finger penetrated without force through what represented the lower wall of the gall-bladder, into the general cavity of the abdomen. Feeling through this opening in the direction of the gall duct, the parts were found a good deal tied up with adhesions, but there was no especial hardness or thickening to be made out.

It would seem probable that in this case, at the time of the first operation, the gall-bladder had already opened posteriorly and downwards, forming an abscess into which the stones escaped. Subsequently, as the abscess cavity contracted, the calculi were forced up to and through the fistula. The stones which were vomited and which passed through the bowels may have been in the cystic duct at the time of operation and have been masked by the swelling of the walls. In the absence of colic, however, at the time when they escaped into the duodenum, it seems quite as probable that they, too, were in the abscess cavity outside of the gall-bladder, and escaped into the bowel through some ulcerated opening.

RETENTION CYST OF THE GALL-BLADDER: OPERATION; RECOVERY.[1]

BY S. J. MIXTER, M.D.

Mrs. D., American, aged about thirty, married, has had six children. While carrying her last child, which was born in July, 1890, she had rather more pain than usual in the abdomen, especially in the right side. Delivery was somewhat difficult, and she was obliged to be up and about her work in nine days. When the baby was two weeks old, the patient had a severe attack of abdominal pain accompanied by nausea and vomiting, which required considerable doses of morphia for its relief. On the second day of this illness she noticed, for the first time, a tumor situated in the right side of the abdomen, tender on pressure, and somewhat movable. The general abdominal pain from which she was suffering was not referred especially to the position occupied by the tumor.

For several days after this attack she was unable to do her usual work on account of weakness and occasional pain; this, however, soon passed off and she was comparatively well again, but at times was troubled by tenderness in the right side. The tumor persisted, and she could move it from side to side and feel it, especially in the right loin. I first saw the patient early in September, 1891, at the Carney Hospital, about thirteen months after she first noticed the tumor, she having been referred to me by Dr. Munro, of the out-patient department, for examination. At this time she complained of increasing pain and tenderness in the right side, which almost prevented her from doing her usual work and taking care of her children, although she said that the tumor had not increased materially in size since she first noticed it.

On examination, a tumor, elastic, rounded, and occupying the right side of the abdomen, was found, extending from about the linea semilunaris back to the loin, and from the costal cartilages to a point about at the level of the umbilicus, slightly resonant in front of the lower part of the mass. It could easily be moved from side to side, in fact, to the left beyond the median line, and from its position, its mobility and shape, suggested most strongly a tumor or cyst of a floating kidney. This was the diagnosis at the time of the first examination, in which all the physicians and surgeons connected with the hospital who saw her until the time of the operation, agreed.

On October 2d, at the Carney Hospital, I opened the abdomen in the linea semilunaris, and found a cyst with smooth white walls, heart-shaped, and covered in its upper part by a very thin layer of liver-tissue; the right kidney normal in size and shape was found in its usual position. Careful search was made for a normal gall-bladder, but none could be found; neither could there be found any gall-stones or other cause of obstruction, though careful exploration was made by both finger and probe. The cyst was then drawn to the abdominal opening and securely stitched to the peritoneum and skin, and opened. A pint of clear fluid was drawn off, part of the cyst wall was excised, and a glass drainage-tube inserted and tied in, in the usual way. There was little shock, and recovery was uneventful — the cyst draining perfectly, the fluid gradually changing to a thickish, glue-like substance, and finally ceasing entirely.

The patient left the hospital in about five weeks, and soon after the sinus closed entirely. Since then she has regained her strength. There is only slight pain, no more than is usual after laparotomy, and she is able to do her regular work.

Dr. Whitney, who examined the contents of the cyst and the cyst-wall, reported that the wall consisted of fibrous tissue; that the inner lining, which was brownish in color, showed no signs of mucous membrane; and that the fluid was similar to that which would be found in any retention cyst. There was nothing that pointed to an echinococcus cyst. He was of the opinion that it was a greatly enlarged gall-bladder, the distention being due to a closure of the cystic duct in some manner.

This case is of special interest in connection with the other cases of cholecystotomy reported this evening, as in this case no gall-stones were found, the obstruction was in the cystic and not in the common duct, and the gall-bladder, as it probably was, contained only a clear fluid and no bile. It also shows how slight the symptoms may be from closure of the cystic duct compared with those of closure of the common duct. The attacks of pain in this case are better explained by some common form of gastric or intestinal disturbance than by any trouble of hepatic origin.

There was no jaundice at any time, and nothing which resembled biliary colic in character or severity. The obstruction of the duct and the growth of the cyst must have been of long standing, as when the patient first noticed the tumor, over a year before the operation, it was nearly as large as when it was seen and operated on by me. The cyst caused pain and discomfort simply from its size and pressure, and there were no symptoms of obstruction to the flow of bile, the history of the case throughout emphasizing the generally recognized fact that the gall-bladder is practically unnecessary to the animal economy.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

CASES OF CHOLECYSTOTOMY.[1]

BY GEORGE W. GAY, M.D.

Mrs. C., aged thirty, was under Dr. Clement's care for about two months before she entered the City Hospital. Her symptoms were: severe pain, jaundice, obstinate vomiting, emaciation, debility, tenderness over the gall-bladder (but no distinct tumor), fæces clay-colored, and urine dark brown, evidently due to bile-pigments. A judicious trial of the usual remedies had failed to give any permanent relief.

The day after entering the hospital the gall-bladder was opened by an oblique incision four inches long, an inch below the ribs, and commencing about an inch to the right of the median line. The lower edge of the liver projected an inch below the ribs. The gall-bladder was readily found. It was not distended, and on being caught in a loop of silk and opened, was found to contain only a drachm or two of thick bile. No calculus could be detected by the finger outside the duct, nor by a long probe passed into it. After irrigating the cavity of the gall-bladder with warm water, a small stone was easily detected with the probe and removed. It was broken by the forceps during the extraction, but was estimated to be about the size of a large pea.

The gall-bladder was stitched to the abdominal walls, and the wound closed around the drainage-tube in the usual way.

The convalescence was uneventful. Jaundice was a good deal diminished in two weeks, and bile was apparent in the stools. In four weeks the discharge from the wound was very slight, and the skin was about normal. She was up about the ward in a short time, and was discharged nearly well in seven weeks.

At the end of three months the patient is well. The wound is entirely healed, and she is in her usual health. It should be stated that this patient had previously undergone laparotomy for the removal of "pus-tubes."[2]

Mrs. G., also a patient of Dr. Clement's, aged fifty-nine, was seen in consultation in July, 1891. The present attack was of nine months' duration, and was the fourth in as many years. The usual symptoms were present, to wit: jaundice, vomiting, pain, exhaustion, loss of appetite, high-colored urine, pale fæces, and some emaciation. Being a very fat woman, no tumor nor area of dulness could be determined.

Operation July 5th. A vertical incision five inches long through very thick walls was carried down to the liver. Firm and extensive adhesions existed everywhere. In separating them with the finger below the liver, a profuse hæmorrhage was brought on, which threatened to terminate her life upon the table. Nothing could be seen on account of the free bleeding, and no gall-bladder nor foreign body could be felt in the mass of fat omentum and adhesions. As the patient was failing the operation was reluctantly abandoned. The wound was packed with baked gauze, and covered with a large mass of the same material. Stimulants were freely given. She rallied somewhat for a few days, but never sufficiently to justify further efforts to find the gall-bladder and the obstruction. A low muttering delirium set in, and the patient died at the end of ten days.

An autopsy revealed the presence of a calculus, about the size of a hazel-nut, in the common duct.

In the few cases of cholecystotomy that I have seen, the gall-bladder has not been distended, even though the jaundice has been most profound from the presence of gall-stones. On the contrary, in the case of a young lady upon whom I performed this operation several years ago, no stone was found, nor had she ever had jaundice. Yet the gall bladder was enormously distended by about three pints of thick bile. She recovered, and remains well at the present time.

In one case of gall-stones, which was under my care many years ago, the ulceration extended in various directions. Calculi not only came through the opening in the skin, but several were coughed up. At the autopsy the gall-bladder was found to be entirely obliterated.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

[2] This woman has recently had an attack of biliary colic. She is now taking the Fluid Extract of Garden Celandine.

TWO CASES OF ABSCESS OF THE LIVER.[1]

BY J. C. IRISH, M.D., OF LOWELL.

October 17, 1891, I was asked by Dr. Edwards, of North Chelmsford, to do an operation for abscess of the liver. The patient, F. M., a man aged thirty, was just recovering from a moderately severe attack of typhoid fever, when Dr. Edwards, his attending physician, discovered upon the right side a tumor, with distinct fluctuation, extending from the free border of the ribs to the median line, and a short distance below the umbilicus, and nearly to the pelvis on the right. Dr. Edwards aspirated, and drew off about one quart of pus. Two weeks later, when I saw the patient, the tumor had regained its former size; the abdominal walls were evenly distended over it; there was no place showing any tendency of the abscess to point.

An incision, three inches long and about two inches to the right of the median line and below the border of the ribs, was made. A large quantity of pus, about one quart, was discharged.

The enormously enlarged liver was so completely adherent to the abdominal parietes that no precautions to prevent an escape of pus into the abdominal cavity were necessary. The abscess cavity was thoroughly irrigated, and a glass drainage-tube inserted. The patient made an excellent recovery.

A second case of liver-abscess I saw December 7, 1891. Mr. M., of Lowell, aged sixty, had had during the past ten years several attacks of icterus, which had speedily cleared up. He had never suffered from biliary colic. Previous to December 7th, he had, for two weeks, severe and continuous pain in the right shoulder. At the time I saw him his skin was but slightly tinged with bile. A large, fluctuating tumor occupied the upper and right side of the abdomen, extending nearly to the pelvis. As in the preceding case, a long incision was made and about three quarts of pus escaped. The abscess cavity was thoroughly drained; but a large amount of pus continued to discharge, and the patient died of exhaustion, February 27th. I am uncertain whether death was due to the continued formation of pus or to the extensive destruction of liver-tissue that had occurred.

In this case, too, the abscess wall was so closely attached to the abdominal as to prevent any escape of pus within the cavity of the abdomen.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

Generally in the treatment of liver-abscesses, from whatever cause they arise, — dysentery, typhoid fever or gall-stones, — aspiration is valueless, except for purposes of diagnosis. As a curative means it fails here, as elsewhere, in dealing with an accumulation of pus. An incision through the abdominal walls, three or four inches in length, and a thorough drainage of the abscess cavity, I believe to be the only treatment. The operation is practically without danger. A long incision is especially mentioned, because with it we can more surely protect the abdominal cavity from the invasion of pus, when abscess and abdominal walls are not adherent. The fatalities of liver-abscess depend, not upon the operation, but upon the extent of the pus cavity and the relative amount of liver-substance that has been destroyed. Hence, the great importance of the earliest possible operation.

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LARGE ECHINOCOCCUS CYST OF THE LIVER SUCCESSFULLY OBLITERATED BY LAPAROTOMY AND DRAINAGE.[1]

BY MAURICE H. RICHARDSON, M.D.

On Monday, August 3, 1891, Charles H., aged thirty-two, was sent into the Massachusetts General Hospital from East Boston. With good family antecedents, he had always enjoyed the best of health up to the present illness. At the age of twelve he went to sea, and for eighteen years was knocked about the world in the capacity of able seaman. Never was in Iceland. Always had a dog on board ship. On the 30th of June, about a month ago, was taken with what the doctor called inflammation of the bowels. He was greatly nauseated, but could not vomit. There was some pain in the abdomen. Last Friday noticed a "knob" on the right side of the abdomen close to the ribs. The next morning the lump had increased in size and he felt feverish and had chills. His condition rapidly grew worse, and on Monday afternoon he was brought to the hospital. The patient in appearance was very strong and robust and of great endurance. There was a large tumor in the right side of the abdomen, which, continuous with the liver dulness, extended downward to the crest of the ileum and ended in a broadly rounded margin. The whole right side of of the abdomen was occupied by the mass. Toward the left, at the median line, the flatness gradually gave place to normal abdominal resonance. There was a distinct sensation of fluctuation and entire absence of resonance. There was nothing which suggested the peculiar thrill of an hydatid cyst. Over the region occupied by the tumor there was marked tenderness. The temperature was 102°, and pulse 120. There was no pain. All other signs were negative. It was impossible to make a diagnosis in this case. An abscess was not seriously thought of, for the operation was performed in Ward E. An echinococcus cyst was considered, but no diagnosis of such condition was made. It was impossible to eliminate dilated gall-bladder or hydronephrosis. Whatever the cause, it was quite evident from the severity of the symptoms that immediate exploration was imperative. No opportunity was therefore given us for that careful study and observation which obscure abdominal cases require.

The operation, under ether, was performed on Tuesday, August 4th. An incision three inches in length was made in the right flank, over the tumor, parallel with the fibres of the external oblique muscle. On cutting through the peritoneum a tumor presented which was very similar to liver in color and appearance. It was finely mottled, smooth and glistening, tense and fluctuating. The wall of the mass was sutured to the parietal wound with interrupted silk sutures, leaving an oblong space about an inch and a half in length and an inch in width occupied by uncovered tumor wall. At this point an aspirating needle showed the presence of pus. An incision was then made through about a quarter of an inch of normal liver substance until pus was reached. Large quantities escaped through the cut until the opening became clogged with a jelly-like substance, which, on being pulled out, was evidently the daughter cyst of an enormous echinococcus. At least five hundred cysts were removed by irrigation, varying from the size of an English walnut to a pin's head. The cyst was then thoroughly washed out with warm water. A large glass drainage-tube was left in the cavity, packed about with gauze. On the 5th the temperature was 99°. The discharge rapidly diminished under daily irrigation, and he was discharged on October 4th. At the present time he remains perfectly well.

This case shows the importance of early exploration in obscure abdominal cases which are accompanied by more or less severe constitutional disturbance — in all abdominal conditions where the symptoms are urgent and their cause not understood. This cyst was about ready to break into the abdominal cavity, and there was probably already existing a localized peritonitis, though none was discovered. As a safe and efficient method of treating echinococcus cysts enroaching upon the abdominal cavity, the case seems to be one of value, and the treatment may occasionally be imitated in the treatment of abscesses from other causes and in different regions of the abdomen. The appearance of what the patient called the "knob" in his side soon after the attack of inflammation of the bowels, together with its rapid growth, seems to me to indicate that the size of the cyst depended largely upon the accumulation of pus, and that previous to the inflammatory condition the tumor was so small as not to be noticeable.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, March 2, 1892, Dr. A. T. Cabot, the President, in the chair.

Dr. A. K. Stone, reported

BACTERIOLOGICAL AND CLINICAL INVESTIGATIONS INTO THE ACTION OF DERMATOL.

This wound-healing material was produced and first used in the laboratory and clinics of the University of Breslau. It is an odorless, astringent powder, aiding in the healing of fresh wounds and well-granulating surfaces, especially in all cases when primary union is threatened from the presence of much secretion. Its use is indicated wherever iodoform, aristol, or any inert powder would be used, excepting in such cases as require stimulation; here dermatol not only does not act favorably, but tends to increase the condition. It is also of great value in moist eczemas, etc.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1892.

In the bacteriological laboratory it was found that when bacteria were grown in the presence of dermatol, their products entered into chemical combination with the dermatol and were modified; and quantitive experiments showed that the dermatol materially hindered bacterial growth.

Dr. C. P. Putnam: In reference to dermatol, I have used it in the nostril in nose-bleed. One of the most disagreeable accompaniments of nose-bleed is the foul smell of the blood, which is difficult to remove afterwards without fear of starting the hæmorrhage again. In one case I introduced dermatol abundantly on the end of a pad of cotton-wool, which did not cause irritation, and prevented the foul odor.

Dr. J. E. Goldthwaite showed a patient suffering with

CHARCOT'S DISEASE OF BOTH HIP-JOINTS.

There is free play of the femur up and down for four inches, absolutely devoid of pain, and the attitude in standing is characteristic. There is a very marked rub of the two surfaces of the bone together. The reflexes are absent.

Dr. William W. Keen, of Philadelphia, presented a paper on

RESECTION OF A LARGE PORTION OF THE LIVER FOR ADENOMA OF THE BILE-DUCTS: RECOVERY.[1]

Dr. George W. Gay reported

CASES OF CHOLECYSTOTOMY.[2]

Dr. M. H. Richardson reported cholecystotomy cases, together with

A CASE OF ECHINOCOCCUS CYST OF THE LIVER.[3]

Dr. A. T. Cabot reported

TWO CASES OF CHOLECYSTOTOMY.[4]

Dr. William W. Keen, of Philadelphia: There are two or three points which have occurred to me in connection with this subject. To illustrate one I will narrate a case I had recently, in which, if I had been aware of the method of drainage Dr. Richardson has spoken of, I think possibly the result might have been different. A lady came to me who had consulted a number of practitioners in Europe as well as in this country, in consequence of pain in the region of the gall-bladder with intolerable itching all over the body, but with very moderate, in fact, scarcely any jaundice. One might say she was a very sallow woman, but not distinctly jaundiced. Her body was covered with scratch-marks. The symptoms had continued about three years. No relief had followed any treatment. She declared she would rather die than live as she was. The diagnosis was one of probable gall-stones from symptoms and not from physical signs, for there was no gall-bladder, no tumor, nothing of the kind to be found, and no special tenderness in the region of the gall-bladder. I agreed to do an exploratory laparotomy, and it proved to an excessively difficult one. I adopted, as I always have done in those cases, the same incision as Dr. Richardson's. As soon as I opened the abdominal cavity, I examined the under surface of the liver, but could not find the gall-bladder. Directly posterior to the incision was a hard mass, evidently more or less agglutinated, in which I presumed that the gall-bladder lay, though it could not be recognized. The diagnosis lay between gall-stone and cancer, probably of the pancreas, and I was very uncertain as to which I had to deal with. However, I tore through the mesentery and came down upon the pancreas, and to my surprise found no cancer of the pancreas at all, but a perfectly normal one; but immediately back of the pancreas still this hard mass was to be felt. Her instructions being that if relief was to be had she wished to have it, I felt justified in searching further, and with my fingers and a pair of hæmostatic forceps I bored through the pancreas, and back of it came upon a hard, nodulated mass, which I recognized as one or more gall-stones, presumably the gall-bladder, but lying directly across the spine. On opening this I removed one large and five or six small stones. I inserted a drainage-tube, but unfortunately I did not surround it with the gauze. I had the pleasure of seeing one of the operations, Dr. Richardson has so well described, and I was delighted with his method of drainage, and should have adopted it had I been familiar with it. The patient did very well for several hours; but in the middle of the night was suddenly taken with collapse, and died the next morning at seven o'clock. No post-mortem was allowed me. Only in one other case have I ever found the gall-bladder so entirely displaced. In that case also it lay transversely and immediately in front of the spine, but not behind the pancreas. I was therefore able to reach it readily without passing through any structure.

The cases he has referred to have thrown additional light on a point I raised in the paper I had the honor to read this evening, namely, the question of the escape of bile into the peritoneal cavity. Undoubtedly no glass drain, even if surrounded with gauze, will carry away, either through the tube or through the capillary attraction of the gauze, all of the bile. There must be more or less of it that will escape among the intestines during that period in which tubular drain is being established by agglutination of the intestines around the gauze that is placed outside of the tube. I think, therefore, we have here decidedly confirmatory proof of the fact I have mentioned, that the escape of bile into the peritoneal cavity is not necessarily a fatal occurrence.

Dr. Cabot's speaking of the case in which a number of gall-stones were passed, reminds me of a case of unsuspected gall-stones in an excessively fat woman on whom I did a laparotomy in consequence of pelvic abscesses. I made no examination of gall-bladder, for nothing had ever pointed in that direction. I paid attention exclusively to the conditions found in the pelvis, but after the operation the patient vomited continuously for a week. It was absolutely uncontrollable. Along with it, however, her temperature did not rise; and therefore I came to the conclusion that there must be some complication other than mere ether vomiting, and also that it had not to do with a peritonitis. About a week after the operation she began to pass gall-stones by the bowel. There was a perfect torrent of them for three days, during which time we obtained 101 of them. The vomiting then ceased entirely, and the patient never had a bad symptom afterward.

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[1] See page 405 of the Journal.
[2] See page 421 of the Journal.
[3] See page 422 of the Journal.
[4] See page 418 of the Journal.

Dr. Albert H. Tuttle, of Cambridge: Having assisted at the last two operations of the seven successfully treated by Dr. Marcy, I am led to report the same, by the kind permission of that gentleman, on account of certain interesting features in both cases, which demonstrated the rationale of his method of treating this affection, and also show the advantages to be obtained by similar methods over some that have been practised during the last few years.

Mrs. H., aged sixty, when first seen, had been under the treatment of a physician for several days; her condition was critical and she took the ether badly. A tumor with faint outlines was present, just beyond the linea semilunaris, below the margin of the ribs, and an incision about three and one-half inches long was made across its centre, parallel to the border of the ribs and carried through into the abdominal cavity; the edge of the liver and a part of the considerably distended gall-bladder presented in the wound, the latter more or less mottled, with dull, grayish-yellow spots of necrotic tissue. The bladder was drawn well into the wound and stitched to the edge of the peritoneum, care being taken to pass the sutures (kangaroo tendon) only through the outer coat.

Three layers of stitches, passing in the form of a ring about the base of the bladder, were thus taken, and served to completely shut off the peritoneal cavity, a condition especially desired as it was anticipated the sac contained pus. An incision about one inch long was then made into the bladder, which allowed the escape of three or four ounces of slightly yellowish fluid, the modified secretion of the bladder wall, and one gall-stone.

The probe detected the presence of another of very considerable size; this could not be removed through the opening in the bladder wall, and an attempt was made to crush it with a pair of strong forceps, but without success; it was then seized between the points of a pair of tenaculum, or modified bullet-forceps, and broken, when it was easily removed. There was still another stone discovered in the common duct, the cause of the severe symptoms, — constant vomiting, temperature 104° and 105°, small pulse, scanty, high-colored urine, containing bile and albumen, — which was of considerable size, but easily removed.

The first stone removed was lozenge-shape, the diameters were three quarters and one-quarter of an inch, the flattened surfaces faceted; the second and largest was cylindrical in form, about one and three-quarter inches long, and one and one-quarter inch in diameter. One end was faceted.

The third stone removed from the duct was nearly spherical, one inch in diameter, the surface partly smooth, the whole mass weighing two ounces in the condition in which it was taken from the body. The wound was drained and packed with iodoform gauze, and an aseptic dressing applied. This patient made an uneventful recovery, the temperature after the operation never reached 100°, and at the end of four weeks the patient was out, and the wound entirely healed. This, I am informed, was a longer period than any of the other five preceding cases required, most of which healed by primary union.

The second case was Mr. G., aged twenty-nine, and operated upon March 2, 1892. Three years ago he was taken with sharp, colic pains, which confined him in bed for several days; jaundice was marked, urine became dark and the stools clay-colored, although there was no local tenderness or swelling. There were two subsequent attacks with jaundice; the last, September, 1891, was called inflammation of the bowel, and followed a fall from his bicycle; it confined him to his bed three weeks, during which time he was badly jaundiced, and there was a great deal of soreness and pain over the region of the gall-bladder, but no local enlargement until about January 1, 1892. Since then the tumor has rapidly developed, until at the time of the operation it was about egg size, flattened and circumscribed, with distinct fluctuation in its centre, and firmly adherent to the abdominal wall. The general condition of the patient was fairly good, there was no jaundice, but his weight was from fifteen to twenty pounds below normal. The diagnosis was doubtful.

The tumor had been diagnosed as one of gall-bladder origin, but there was a superficial character about it, which pointed toward an abscess in the abdominal wall, and to help this opinion the tumor was firmly attached to the skin. It was in view of these facts that a straight incision was made through the skin over the centre of the tumor. The skin was thickened, and closely adherent to the parts below, and there was entire absence of muscular tissue.

The wall of the cyst was easily discriminated, and an incision three-quarters of an inch long made into it; some thick pus, containing a few small gall-stones, followed the withdrawal of the knife. Examination showed a contracted gall-bladder, the whole cavity of which was filled with a reticulated meshwork of tissue which was formed, evidently, from the inflamed mucous membrane, and containing strong bands of connective tissue which crossed the cavity in all directions. Firmly held in this web of tissue, were over one hundred stones of variable size, the largest being about three-eighths of an inch in diameter. These were slowly teased from their confinement by means of a dull curette, and the cavity packed with iodoform gauze, and an aseptic dressing applied.

Dr. S. J. Mixter read a paper on

RETENTION-CYST OF THE GALL-BLADDER.[5]

Dr. Whitney: As regards the diagnosis of the situation, it was rather by exclusion than anything else. The examination of the wall of the cyst showed it to be of fibrous nature, and the contained fluid was thin, rather viscid, and such as I have seen often in cases where the gall-bladder has been cut off from the bile, and where there has been accumulation of thin, mucus-like fluid within the gall-bladder. There was nothing of the nature of an echinococcus cyst-wall, and from the situation, I think, with Dr. Mixter, there is no other supposition tenable except that it was a retention-cyst of the gall-bladder, the communication with the common duct having been cut off.

Dr. M. H. Richardson showed a

RETRO-PERITONEAL CONGENITAL CYST,

removed eight days before from a baby of thirteen months, a patient of Dr. Bowers, of Clinton. When born the abdomen was abnormally enlarged, and the child was supposed to have something the matter with the liver. Later, as he developed, the swelling also increased in size. There was no interference with the general health of the baby. A few weeks ago it was decided, in consultation with Dr. F. C. Shattuck, to make an exploratory incision. The diagnosis was necessarily obscure, but it seemed, on the whole, to be more probably a congenital hydronephrosis than anything else. On opening the abdominal cavity in the median line, above the umbilicus, a large retro-peritoneal tumor was exposed. This contained about seven pounds of slightly opaque fluid. The cyst was attached just behind the pancreas. Over and in front of its neck the splenic vein passed, and it was necessary to tie and cut that vessel. The peritoneum was stripped from the tumor down to its base, and the pedicle ligated with catgut. The diagnosis made by Drs. R. H. Fitz and W. F. Whitney, after examination of the specimen, is retro-peritoneal cyst of congenital origin, and the case is apparently unique. The baby was discharged from the hospital well in about three weeks from the time of the operation.

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[5] See page 420 of the Journal.

Dr. Whitney: The specimen is quite unique, being a cyst developed behind the pancreas in the retro-peritoneal tissue, and is of interest from its point of origin, as cysts in this region are among the greatest rareties. In the ordinary literature of the subject I find no mention of it; and Dr. Fitz, who recently has given a great deal of attention to diseases of the pancreas tells me he has not come across any mention of a cyst occurring in this region.

As you look at the cyst you see on the upper surface the line where the peritoneum has been dissected off as a sort of ridge. In the fresh condition this contained numerous gray, rather lobulated masses which attracted my attention at first, and which I thought to be simply minute masses of fat of the peritoneum. On section, you see that the upper part are really portions of the pancreatic tissue, a sinous gland-tissue. Under the microscope you see denser masses, masses of pancreatic tissue, then the wall of the cyst, which is of fibrous tissue. As regards the fluid which this contained, I am sorry that it was not received in a fresh enough condition to make a very satisfactory examination. From the report of the house-officers who examined it, it contained a certain amount of fatty, degenerated, granular corpuscles and fat crystals and a little free fat. In one point of the cyst wall there is also a little fatty-looking tissue. There is no epithelial lining of the cyst wall, and nitrate of silver staining failed to disclose a distinct endothelial lining, such as usually lines the serous surface of the abdomen. Being of congenital origin, as the history plainly shows, we probably have to do with something of developmental character, and at once attention would be called to the peritoneum as the probable source of origin.

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Recent Literature.

A Manual of Hypodermatic Medication: the Treatment of Disease by the Hypodermatic or Subcutaneous Method. By Roberts Bartholow, A.M., M.D., LL.D., Emeritus Professor of Materia Medica, General Therapeutics and Hygiene in the Jefferson Medical College of Philadelphia, etc. Fifth edition, revised and enlarged. J. B. Lippincott Company. 1891.

The fifth edition of this work has grown to a book of 540 pages, as many of the articles have been rewritten and new matter has been added.

An interesting historical sketch of the hypodermatic method begins the work. The author uses the term hypodermatic in place of hypodermic, as the term hypodermic is not sanctioned by scholars, but the use of the less exact word is now so firmly established that it will be difficult to substitute the more proper one for it.

Under the group of remedies affecting nutrition, there are given valuable suggestions about the subcutaneous use of mercury, of pilocarpine, of iron, and various methods of transfusion are briefly considered. Then follows a group which is classed as agents having the power to destroy pathogenic micro-organisms, among which are found a number of antiseptics and antipyretics.

A large portion of the work is devoted to morphine, the treatment of the opium habit and the antagonisms between atropine and other alkaloids. Following this, and also among the remedies which affect the nervous system, are strychnine, the digitalis group, cocaine, caffeine and ergot. The subcutaneous use of quinine is, of course, taken up; and the peculiar advantages of the subcutaneous method of administering it is insisted on. Of the remaining topics those of amylhydrate, nitroglycerine and apemorphine are among the more important.

Besides a consideration of the subcutaneous use of the remedies, their history, properties and physiological action and uses are given. The work has many suggestions of practical value, but things of secondary importance are also included in a work which aims to be complete.

Dr. Bartholow recommends the hypodermatic use of atropine in asthma. Morphine is treated very fully; and the author takes the ground that it is not as much used as it deserves to be in relieving pain after operations and injuries, especially during the first few hours after fractures or dislocations.

So far as the reviewer is aware, this work is the largest and most comprehensive which has been written on this subject; and the well-known and distinguished author has evidently taken great pains to include all that has a bearing upon the subject of hypodermatic medication.

Therapeutics, its Principles and Practice. By H. C. Wood, M.D., LL.D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. Eighth edition. J. B. Lippincott Company. 1891.

It is a satisfaction to see the editions of this standard work on therapeutics follow each other at short intervals. Only a few years ago the seventh edition was published; and we now have the eighth edition in a revised and enlarged form.

There is no work on this subject which is more reliable in its teachings. The many familiar excellencies of this valuable book are retained, and it is unsurpassed by any other treatise.

Essentials of Medical Electricity. By D. D. Stewart, M.D., and E. S. Lawrence, M.D. 16mo, pp. 158, with sixty-five illustrations. Philadelphia: W. B. Saunders. 1892.

This little manual is better than the average of such compilations. It is clearly written, and affords a fairly safe guide to the beginner in this subject.

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THE REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD.

THIS valuable report contains the results of the investigations of the Local Government Board upon sanitary matters for the year 1890.[1]

From this report it appears that the percentage of young children who had not been formally accounted for in the vaccination returns amounted to 10.3 in London, and 8.2 in the rest of the country, a somewhat larger percentage than that of the years immediately preceding. This increase may partly be attributed to the fact that no serious epidemic of small-pox has occurred in England for the past six years. The investigations made by the medical inspectors of the Board during the year comprised an inquiry by Dr. Barry relative to an epidemic of typhoid fever in the valley of the River Tees. The circumstances attending this epidemic are so much like those which recently prevailed at Lowell[2] and Lawrence on the Merrimack River, as to be worth repeating here for the purpose of comparison. The Tees Valley embraces a district of 746,000 acres, with an estimated population in 1890 of 520,000, the principal towns being Middlesbrough, Darlington, Stockton and Auckland. In the district there were 570 cases of enteric fever reported in the four weeks ending with October 4th. After describing the conditions which prevailed in the district, during the previous season, Dr. Barry concludes as follows:

"From a consideration of all the circumstances of the case, I have personally no hesitation in attributing the epidemic of enteric fever in the lower Tees Valley to the water pumped from the River Tees during the fortnight ending August 23d, at a time, namely, when the river was in flood, and when it must have contained abundance of excremental matter. And I consider that, so long as water for drinking purposes is drawn from the Tees, the condition of that river remaining as at present, so long will there be danger of the occurrence of similar epidemics to that described in this report, in the districts thus supplied with Tees water.

"There can be no question that if the sewage and excremental and other refuse of the various towns and villages above the pumping station were prevented from passing into the Tees, the danger of specific pollution of the water would be very greatly reduced; but even under these circumstances it is still doubtful whether a water, pumped from a river at a point forty miles from its source is, anywhere in this country, a desirable supply for drinking purposes.

"Until some very decided improvement is effected, either in the river conditions or in the source of the water-supply, it will be advisable for persons residing in the towns recently infected by enteric fever, to boil all water prior to its use for drinking purposes."

Other important investigations follow upon epidemics of diphtheria, scarlet-fever, cerebro-spinal-meningitis, and pneumonia in different districts of England and Wales.

Dr. Parsons contributes a valuable inquiry as to the merits and demerits of water-closet construction, with special reference to the use of slop-closets and trough-closets. He is of the opinion that the slop-closet with automatic flushing is well-adapted for use at artisan's cottages, and that trough-closets might be introduced with advantage in common courts occupied by the lowest and roughest class of people, as well as at schools, mills, and other places where closets are used in common by large classes of people. Neither professes to be adapted for indoor use. One has for its object the economizing of rain and sink-water, where water is scarce; and the other, the prevention of injury to health by the misuse of water-closets. This advice would be better adapted for New England, if it were not for the liability of all outdoor fixtures to freeze during our rigorous winter weather.

Dr. Bullard contributes a summary of all the cases of food-poisoning which had been investigated by the Board during the previous twelve years, fourteen in number. Most of these resulted from eating pork, pork-pies, or tinned meats in some form or other. He describes the usual symptoms as follows:

"A person after eating the poisonous food, often and indeed usually without previous warning, is suddenly attacked by the initial symptoms, which may be rigors, or one or other of the following symptoms, faintness, muscular weakness and prostration, sometimes very severe, or giddiness, abdominal pain, vomiting and diarrhœa, followed by fever, thirst, and more or less violent headache, and pains in various parts, and a variety of nervous disturbances such as muscular twitchings, disturbances of vision, dilatation of the pupil, or drowsiness; there may be an eruption of the skin, and later on suppression of urine. Convalescence is apt to be prolonged and sometimes attended with desquamation of cuticle.

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[1] Twentieth Annual Report of the Local Government Board (1890-1891). Supplement containing the Report of the Medical Officer. Pp. xxi, 296. London: Eyre & Spottiswoode, 1891.

[2] Journal, vol. cxxiv, p. 397.

"Pathological conditions noticed after death in men and animals consist of inflammatory, hæmorrhagic or destructive changes in the stomach and intestines, pneumonic engorgement or a hæmorrhagic condition of the lung tissue, and inflammatory or destructive changes in the liver and kidneys. These are phenomena not of mere local irritation, but of a general disease. Both clinically and pathologically, therefore, the phenomena resemble those of our better-understood specific fevers, with which this form of malady must in future be classed."

In the special appendices at the close of the volume may be found a continuation of Dr. Klein's researches upon the etiology of diphtheria, in which he reaffirms, notwithstanding the doubts of Löffler, his statements relative to the inoculation of cats and cows with the bacillus of diphtheria.

Dr. Martin contributes a paper on the "Chemical Pathology of Anthrax"; Dr. Hamer presents a report on "Certain Conditions Determining Insusceptibility"; and Dr. Andrewes, a paper on "Pyogenic Organisms."

The report contains a memorandum which has much practical importance in connection with the management and control of infectious diseases. The subject included in the memorandum is, "The Circumstances under which the Closing of Public Elementary Schools or the Exclusion therefrom of Particular Children may be Required in order to Prevent the Spread of Disease."

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THE HOSPITAL SATURDAY AND SUNDAY ASSOCIATION.

A meeting of the New York Saturday and Sunday Association was held April 18th, at St. Luke's Hospital, to consider the annual report of collections for 1891. The report showed that the Association now embraces thirty-three hospitals. There are one hundred and fifty contributing churches, chapels and synagogues, while effective organizations for trade collections exist in all the principal business exchanges and trades of the city. During the last year a new impetus has been given to the work through the zeal and coöperation of women, who, through their Woman's Auxillary, collected $7,422.84 for the fund. The annual collection for the hospitals in New York amounted this year to $60,263.91, which is $1,921.68 more than that of last year.

The work of the Association has grown to such magnitude that a general agent has been permanently employed to foster interest and prepare the machinery for the annual collection, and to act as an intermediary between contributors and the hospitals with regard to the admission of patients.

Similar associations have been formed in some of the other cities of the country, and it is thought that the growth of interest in the cause may lead to the establishment of a National Hospital Saturday and Sunday Association. A committee that had been appointed in regard to awakening a more general interest in the movement made a report, and it was decided to issue a circular letter, setting forth the objects of the Association, and the work accomplished by it in New York, and to send this to persons interested in philanthropic work in the various cities and large towns of the country.

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SURGERY OF THE LIVER.

The present issue of the Journal may be fairly termed an hepatic number. It opens with a paper by Dr. W. W. Keen, of Philadelphia, on resection of the liver, especially for hepatic tumors, which includes a report of a successful resection for a very rare cystic adenoma of the bile-ducts. This is followed by a paper by Dr. M. H. Richardson, of Boston, on gall-bladder surgery, illustrated by eleven different cases, and in addition he reports an echinococcus cyst of the liver. Dr. Homer Gage, of Worcester, Mass., contributes a case of secondary laparotomy for pistol-wound of the liver; Drs. Gay and Cabot, of Boston, cases of cholecystotomy; Dr. Irish, of Lowell, cases of hepatic abscess; and Dr. S. J. Mixter, of Boston, a retention-cyst of the liver.

This is an uncommon collection of cases presented by able surgeons, especially when one reflects how very recent the development of hepatic surgery is. We shall do no more, and we could do no less, than direct the attention of our readers to this interesting series, which we are fortunate enough to be able to lay before them simultaneously, and to the report of the Society before which it was presented.

The surgeon and the physician are prying into the liver as never before; hepatic tissues and processes which not long ago were dreadful and mysterious are rapidly becoming less so or ceasing to be so at all. Editorially we have had our say, not long ago, on the surgery of the liver,[1] and very recently on biliary infections,[2] and gladly leave the reader, without further comment on our part, in the good company in which he finds himself to-day.

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MEDICAL NOTES.

The Paddock Pure Food Bill. — This bill, the details of which were given on page 276 of the Journal of March 17th, is now before the national house of representatives, and is being opposed by manufacturers of proprietary medicines, on the ground that it places undue restrictions upon an important and flourishing industry.

Physicians under Fire. — While two physicians in Brooklyn were endeavoring last week to have a child with small-pox removed to the hospital for contagious diseases at Flatbush the irate father of the child, in a fit of passion, fired two shots from a revolver at them. Fortunately no harm was done, and after the arrival of the police captain and several assistants, the child went to the hospital and the father to the station-house.

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[1] November 19, 1891, p. 554.
[2] April 14 and 21, 1892, pp. 373, 397.

MEDICAL DEGREES IN FRANCE. — During the academic year 1890–91, the number of persons admitted to the degree of Doctor of Medicine in all the French Faculties was 594, being three less than in the previous year. Of these degrees, Paris conferred 374, Lyons 71, Montpellier 60, Bordeaux 55, Lille 14, Nancy 11, and the newly-created faculty of Toulouse nine.

A MURDERER'S DEVOTION TO SCIENCE.— It is said that a French murderer, condemned to be guillotined, recently requested his brother, a medical student, to experiment with his head immediately after decapitation, in order to ascertain by a pre-arranged code of signals (winks and movements of the eye-balls), what he felt when the knife cut his head off, and how sensation and consciousness is retained.

THE SO-CALLED "PARROT EPIDEMIC" IN PARIS. — The Paris correspondent of the *British Medical Journal* notes the breaking out of a new epidemic of a hitherto unknown malady, which is supposed to have been transmitted by some parrots imported from Brazil. Professor Peter, of the Hôpital Necker, believes that it is oftener transmitted directly from the birds to the human subject than caught by one patient from another. One of the cases has come to autopsy. Professor Cornil says: "It is a new disease; this is the first time I have met with it." In this connection it is interesting to note that yellow fever is prevalent in Brazil.

FOOTBALL IN ENGLAND. — During the season in which the game of football is played in England, the record of accidents more or less serious, is practically continuous; and although many organs of public opinion from time to time contain articles remonstrating against the amount of injury suffered through the violence of the play indulged in at ordinary matches, still the frightful extent of it is not probably very generally realized. How widespread is the mischief, however, is forcibly brought out when the fatalities and injuries which occur within a single season are collected together and arrayed in a tabular fashion, as has recently been done in the pages of the *Pall Mall Gazette.* The result here shown is that during the football season of 1891–92 there died through accidents received on the field no fewer than eleven players, while more than seventy others received injuries, mostly in the shape of fractures, which would entail on them weeks of suffering and incapacity for work. The time has surely come when an attempt ought to be made in favor of arresting the annual tribute of lives to the craze for dangerous excitement, to which alone it is possible to attribute the popularity of the game.

BOSTON AND NEW ENGLAND.

THE WEST-END NURSERY AND INFANTS' HOSPITAL. — The directors of the West-End Nursery and Infants' Hospital, while acknowledging the receipt of generous contributions, regret that they must appeal to the public again for aid in order that the work may be continued in its present manner until June 1st, and that arrangements may be made for caring for a number of babies during the summer months.

MASSACHUSETTS EMERGENCY AND HYGIENE ASSOCIATION. — The annual meeting was held April 21st at the house of Dr. Francis Minot. Mrs. Kate Gannet Wells read the report of the executive committee, Dr. O. H. Marion that of the militia work, and Miss Tower of the children's playgrounds. The financial statement showed that the association had not gone into debt, but that the public should be appealed to in aid of the funds to carry on the philanthropic work.

CASES OF TRICHINOSIS IN ROXBURY. — Cases of trichinosis have been recently reported in Roxbury (Boston). There were eight or ten cases in all, and one death. All the cases apparently originated from the ham of a four-year-old pig, brought up in the neighborhood, The meat was eaten uncooked, and the cases occurred in four families, all Germans from Saxony. Trichinæ were found in the ham and in the muscles of the man who died. Trichinosis has been very rare in or about Boston for many years.

CHILDREN'S ISLAND SANITARIUM. — The annual meeting of the Children's Island Sanitarium was held April 21st at the office of the treasurer. By the reports presented it appeared that 430 persons were admitted to the benefits of the institution last summer, and $4,876 was expended in carrying on the work. With the exception of George Hayward, M.D., whose resignation was received and accepted with much regret, the old board of officers was re-elected as follows: President, C. E. Inches, M,D.; Treasurer, J. O. Shaw, Jr.; Secretary and Medical Superintendent, H. C. Haven, M.D.

NEWTON (MASS.) HOSPITAL AID ASSOCIATION.— A fund has been started by the Newton Hospital Aid Association, to establish what is to be known as the Palmer Memorial Home for Nurses in connection with the Cottage Hospital of Newton. The plan is to erect a suitable building with at least ten dormitories for the pupil nurses, and a large sitting and recreation room. It is to be named in honor of Miss Palmer, the former matron of the Cottage Hospital and the founder of the training-school.

NEW YORK.

CHANGES IN THE BOARD OF HEALTH. — A number of changes among the medical officers of the Board of Health were ordered at the meeting of the Board held April 19th. Dr. W. A. Ewing, who has been Sanitary Superintendent for three years, was discharged, and Dr. Cyrus Edson appointed in his place. Dr. Charles F. Roberts was promoted to the position of Chief Inspector of Contagious Diseases vacated by Dr. Edson. Dr. John T. Nagle was promoted to the position of Registrar of Records, and Dr. Roger F. Tracy, who had previously been Registrar, was given the position of Deputy Registrar, hitherto occupied by Dr. Nagle. Dr. F. R. Percival was discharged from the post of resident physician at the hospital for contagious diseases on North Brother Island.

TYPHUS FEVER AND SMALL-POX. — During the past week two or three new cases of typhus fever were reported. There were two deaths from small-pox, and a large number of new cases of the disease, as many as six being sometimes reported in one day. During the past month there have been more cases of small-pox in the city than for several years past, but the disease is apparently of a mild type, the mortality having been very small.

YELLOW FEVER. — The steamer *Alliance*, which arrived at quarantine from Brazilian ports on April 22d, had a number of cases of yellow fever on board before she finally left Brazil. One of the patients, a young man belonging to a wealthy New York family, who contracted the disease at Santos, died on the vessel. Two of the ship's crew were sent on shore at Santos, and six at Rio Janeiro, suffering with the fever.

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Miscellany.

THE FIFTY-NINTH YEAR OF THE BOSTON LYING-IN HOSPITAL.

THIS admirable hospital has issued a handsome report for the year 1891, which includes a statement of its history, work, officers, staff, board of lady visitors and corporate members, the names of donors, statistics of its physicians, finances, and of its training-school for nurses.

It has judiciously provided itself with all the modern appendages for the successful working of a modern charitable institution.

The Boston Lying-in Hospital was originally established by the coöperation of the Massachusetts Humane Society and the Charitable Fire Society. What the hospital now is and what it does, cannot be better told than in the words of this report:

"During the past twenty years it has in various ways performed an important service to the city of Boston and to the larger community whose welfare it affects.

"The work which the institution accomplishes in caring for more than five hundred women annually in the hospital, and in extending its aid each year to more than seven hundred women in their own homes, fills a vital need, and at the same time relieves the public institutions of the city from the practice of a charity which can be far more effectively and properly exercised by private benevolence; but this is not the only and perhaps not the most valuable benefit which the hospital confers. It is only by a large hospital, where many and difficult cases are treated, and where the treatment is carried on systematically and under constant observation and record, that scientific advancement can be made, new discoveries achieved, and improved methods inaugurated.

"The Boston Lying-in Hospital has taken a leading place among the institutions of its kind; and the results which have been here attained have been quoted both in this country and Europe, and have helped to form the basis upon which the wonderful progress in obstetrics has been founded. Considered in the light of the dangers and fatalities which in the immediate past have attended women at this critical period, it is a triumph of science and skill, as remarkable as it is gratifying, that of a thousand patients — many brought because of their exceptional difficulty and from exceptionally adverse circumstances — not a single death should occur fairly ascribable to childbirth. Such a fact appeals to every family; and it is owing to the work done in this and similar maternity hospitals that such facts are made possible.

"The hospital is not only thus adding to general medical knowledge and skill, but is at the same time doing a more immediately practical work for this community. Its wards make possible for medical students a clinical instruction which is invaluable, and indeed almost indispensable, to the young physician. Through its out-patient department more than a hundred student externes are annually afforded, under the hospital oversight, a practical experience in the homes of the poor, which inures to the benefit alike of practitioner and patient. Each year half-a-dozen young physicians, after four months' service, go from the hospital into active work with a knowledge and skill which physicians ordinarily are unable to gain by a lifetime of practice in obstetrics; and each year the hospital's training-school graduates nearly a score of nurses thoroughly equipped and instructed in the best methods for securing the care, comfort and safety of private patients. The hospital is, therefore, more than a charity, and there is no class to which its important benefits are limited."

The buildings have lately been much enlarged and extended; and, in order to properly accomplish its beneficent work in accordance with these increased facilities, the list of generous donors should also be greatly increased, as it undoubtedly easily will be, since the benefits which such a hospital confers upon a community are so patent.

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THE LANGENBECKHAUS AT BERLIN.

PROF. ERNST VON BERGMANN has presented a report to the German Emperor in which he gives an interesting account of the foundation and progress towards completion of the Langenbeckhaus at Berlin. This institution, which is intended for the accommodation of the medical societies of the Prussian capital, owes its origin to a suggestion made by the late Empress Augusta, as far back as in 1878, while the seventh congress of German surgeons was in session. Von Langenbeck announced that such a building was in contemplation. It was not, however, till after his death that the proposal took practical shape, and the German Surgical Society and the Berlin Medical Society undertook to carry the suggestion into effect by making the institution a memorial to that surgeon. A committee was formed which set to work without delay collecting funds. At the head of the list of subscribers figure the names of the Empress Augusta, the Emperor Frederick, and the present Emperor, the latter giving 100,000 marks (£5,000). German practitioners in America contributed £500, Russian military surgeons £100. The profession in Germany also subscribed largely. The site is in the Ziegelstrasse, close to the Royal Surgical Clinic, which was so long the scene of von Langenbeck's labors and triumphs. The building, which is now all but completed, is both architecturally imposing and excellently adapted for its purpose. It provides ample accommodation for meetings of several societies or for the different sections of a congress simultaneously. The largest room can seat 800 persons, and there are four others of somewhat smaller size, besides one, seating 100 persons, for smaller assemblies, one for microscopic and other demonstrations, a room for preparations, and two to be used as a library and reading-room.

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INFLUENZA AT SEA AGAIN.

The following note is of interest inasmuch as it adds another to the list of outbreaks occurring on shipboard, and like some of the other reported instances seems to show that something different from the mere association with people ill with influenza is in some instances responsible for an epidemic outbreak.

Dr. D. G. MacGowan, of Los Angeles, in a paper read before the Los Angeles County Medical Association on March 18th, in speaking of a recent trip to Japan, says: "We left San Francisco with every one well, excepting the doctor. Five days out every one on board was sneezing, and upon the sixth day nearly all of the white crew had well-developed attacks of influenza, which affected chiefly the nervous and respiratory systems. In about a week or ten days we suddenly seemed to sail out of the influenza belt, and every one rapidly recovered."

Such notes are of scientific value as an aid to the study of the etiology of the affection; and it is a pity that such observations are not more frequently reported in the medical journals.

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PASSAGE OF TUBERCLE BACILLUS FROM THE MOTHER TO THE FŒTUS.

Birch-Hirschfeld and Schmal[1] have recorded a case which they consider is the first in which it has been definitely shown that in the human subject tubercle bacilli can pass from the mother to the fœtus. The patient was a young woman who, shortly after the commencement of her first pregnancy, began to exhibit symptoms of incipient phthisis; the disease assumed an acute form, and progressed so rapidly that the patient died during the seventh months of her pregnancy. Immediately after the death of the mother the child was removed by the operation of Cæsarean section. A post-mortem examination was made on the body of the mother. Advanced tubercular changes were found in the lungs, and also some miliary tubercles in the liver and other organs. The child had been felt to move after the death of the mother, but by the time the operation had been performed it was found to be dead. The thorax was at once opened, but the lungs appeared to be quite healthy. The body was then removed to the laboratory, the surface of the abdomen washed with perchloride of mercury, and the cavity opened by means of sterilized knives. No evidences of tubercle could be found in any of the organs. Small pieces of the liver, spleen, and kidney were removed with sterilized instruments, and placed in the abdominal cavity of two guinea-pigs and a rabbit. One of the guinea-pigs died in fourteen days; miliary tubercles were found in the peritoneum and large omentum. The second one was killed about six weeks after inoculation, and the same appearances were noted. The animal had appeared ill, it was feverish, and emaciating rapidly. The rabbit lived considerably longer — three months; after death tubercles were found in the liver and lung. From these experiments it was evident that although no tubercular lesions could be found in the organs of the child, yet the latter were capable of infecting animals; and had the child survived, it would have undoubtedly developed tuberculosis at an early age. It is a point of great interest to read that tubercle bacilli were found in the umbilical cord and in the blood of the umbilical vein.

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THERAPEUTIC NOTES.

Strichnine for Snake-Bite. — During the past year the *Australasian Medical Gazette* has been collecting evidence of the value of strichnine in snake-bite. This treatment, first suggested by Mueller, in Australia, consists in injecting subcutaneously liquor strichninæ, B. P., in large doses, until symptoms of the action of strichnine appear. Persons suffering from snake-bite appear to be very tolerant of the drug, the total dosage sometimes reaching as much as a grain. The opinion is expressed that ammonia and alcohol are frequently, if not always, prejudicial in snake-bite poisoning.

The Administration of Bromoform. — Bedford[1] calls attention to the improper method in which bromoform is often prescribed, that is, in a mixture of alcohol, syrup and water. In this manner the bromoform is precipitated, and most of the drug may be taken in the last doses. The following formula is suggested:

℞	Bromoform	♏ xvi.	
	Alcohol	ℨ ij.	
	Glycerine	ℨ xij.	
	Compound tincture of cardamon .	ℨ ij.	M.

Each fluid drachm contains one minim of the bromoform in perfect solution. Syrup or water should not be used, as either will reduce the bromoform.

Prescribing of Pepsin[2] — Dr. R. G. Eccles, in a paper recently read before the Chemical Section of the Brooklyn Institute, stated that one-half of all the prescriptions which came to the drug stores containing pepsin also contained an alkali, thus destroying the efficacy of the pepsin.

Palatable Castor Oil. — As the result of a series of experiments, Staadke[3] believes that he has succeeded in removing the nauseous taste of castor oil. The best castor oil is repeatedly treated with hot water, then sweetened with sufficient saccharin to possess a syrupy taste. Minute quantities of the aldehyde of cinnamon oil and of vanilla flavoring suffice to completely cover whatever disagreeableness of taste remains. Oil so prepared has been found to be as efficacious and as permanent as the ordinary oil.

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[1] Beiträge zur Path. Anatomie und zur Allg. Path., 1891, p. 429.

[1] Pharmaceutical Record, February 11th.

[2] Brooklyn Medical Journal.

[3] Deutsche med. Woch., 1892, No. 4, p. 87.

The Sodio-Salicylate of Theobromine, or Diuretin. — Dr. H. A. Hare[4] reports his experience with this drug: Encouraged by the favorable results obtained by Keyes and Babcock in this country, by Gram and Hoffmann in Germany, and by Koritschoner in Vienna, he gave 120 grains daily, in divided doses, to four patients, — two of them with cardiac disease, one with general anasarca, and one with senile enlargement of the prostate. In these cases he failed to find any increase in the daily urinary flow — which could be justly attributed to the action of the diuretin. In one the urine did increase somewhat in amount; but he considered this due to the digitalis which it became necessary to administer. The diuretin (Knoll) and the sodio-salicylate of theobromine (Merck) were both employed, and no difference in result was noted. There is, however, a difference in the price of the two; diuretin (Knoll) costs two dollars and fifty cents an ounce, but sodio-salicylate of theobromine (Merck) costs fifty cents an ounce, or one-fifth as much.

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Correspondence.

INTERNATIONAL PERIODICAL CONGRESS OF GYNÆCOLOGY AND OBSTETRICS.

First Session. — Brussels, Belgium, September 14 to 19, 1892.

Chicago, April 21, 1892.

Mr. Editor: — The following named distinguished gentlemen have been delegated to represent the British Gynecological Society at the International Congress of Gynecology and Obstetrics, next September: Robert Barnes, A. S. Simpson, Granville Bantock and Lawson Tait.

Great preparations are being made to entertain visiting physicians. His Majesty, King Leopold, will assist at the opening of the Congress. There will be a grand reception by the Belgian Gynecological Society; gala performance at the Grand Opera; also a banquet by the Belgian Gynecological Society; garden-party in the gardens of the royal family, etc.

For all information relating to the Congress, address,

Dr. F. Henrotin, *American Secretary,*
353 La Salle Ave., Chicago, Ill.

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[4] Therapeutic Gazette, March 15th.

METEOROLOGICAL RECORD,

For the week ending April 16, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...10	29.58	39	46	33	59	50	54	W.	W.	25	18	C.	C.	
M..11	29.86	39	46	33	50	44	47	W.	W.	26	22	O.	C.	
T..12	30.00	38	47	30	37	39	38	W.	N.W.	19	12	C.	C.	
W. 13	30.02	43	55	31	52	47	50	N.W.	N.	16	21	C.	C.	
T..14	29.96	43	54	33	37	40	38	N.W.	S.	16	6	C.	O.	
F..15	29.67	41	44	38	55	51	53	N.E.	S.	20	6	O.	O.	
S..16	29.79	44	52	36	45	34	40	N.W.	W.	12	12	O.	F.	
☞	29.84	41	49	33	48	44	46			19	14			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 16, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	937	370	18.48	22.22	2.97	1.65	7.04
Chicago . . .	1,099,850	452	190	14.30	17.82	1.76	.66	6.82
Philadelphia .	1,046,964	495	172	13.40	9.60	3.40	1.20	6.00
Brooklyn . .	806,343	356	111	11.20	22.96	3.92	.84	4.20
St. Louis . . .	451,770	163	65	13.42	9.76	.61	4.27	5.49
Boston . . .	448,477	210	65	12.96	18.72	1.92	.96	6.80
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	—	—	—	—	—	—	—
Cleveland . .	262,000	95	30	9.45	14.70	—	—	4.20
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	115	53	14.79	13.92	3.48	—	2.61
Milwaukee . .	240,000	88	39	18.24	7.98	1.14	1.14	15.96
Washington .	230,392	124	35	7.29	19.44	1.62	—	.81
Nashville . .	76,168	29	6	6.90	3.45	—	3.45	—
Charleston . .	65,165	46	10	6.51	4.34	—	4.34	—
Portland . . .	36,425	12	0	—	—	—	—	—
Worcester . .	84,655	32	14	12.52	12.52	—	—	6.26
Lowell . . .	77,696	55	14	7.28	9.10	5.46	—	—
Fall River . .	74,398	28	10	10.71	28.56	—	7.14	3.57
Cambridge . .	70,028	26	10	15.40	11.55	—	3.85	7.70
Lynn	55,727	24	4	—	45.76	—	—	—
Lawrence . .	44,654	27	12	22.20	18.50	7.40	—	—
Springfield . .	44,179	—	—	—	—	—	—	—
New Bedford .	40,733	12	6	8.33	8.33	—	—	—
Salem	30,801	13	2	—	—	—	—	—
Chelsea . . .	27,909	8	0	25.00	25.00	25.00	—	—
Haverhill . .	27,412	14	6	7.14	7.14	—	—	—
Taunton . . .	25,445	—	—	—	—	—	—	—
Gloucester . .	24,651	7	1	—	28.56	—	—	—
Newton . . .	24,379	7	1	28.56	42.84	—	14.28	—
Malden . . .	23,031	14	3	—	14.28	—	—	—
Fitchburg . .	22,037	5	1	—	20.00	—	—	—
Waltham . .	18,707	7	1	14.28	14.28	—	—	—
Pittsfield . .	17,281	5	1	—	40.00	—	—	—
Quincy . . .	16,723	5	1	—	40.00	—	—	—
Northampton .	14,990	5	2	20.00	20.00	—	—	20.00
Newburyport .	13,947	7	0	—	14.28	—	—	—
Medford . . .	11,079	2	0	—	—	—	—	—
Hyde Park . .	10,193	2	0	—	—	—	—	—
Peabody . . .	10,158	4	0	—	25.00	—	—	—

Deaths reported 3,431: under five years of age 1,235; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 438, acute lung diseases 587, consumption 373, diphtheria and croup 192, scarlet fever 96, diarrhœal diseases 54, measles 42, typhoid fever 41, cerebro-spinal meningitis 17, erysipelas 17, whooping-cough 16, malarial fever 7, puerperal fever 5, small-pox 1.

From typhoid fever Chicago 11, Pittsburgh and Washington 6 each, Philadelphia 5, Brooklyn and Boston 2 each, St. Louis, Cleveland, Lowell, New Bedford and Waltham 1 each. From measles New York 27, Philadelphia 5, Chicago 3, Brooklyn and Cleveland 2 each, Boston, Pittsburgh and Lawrence 1 each. From cerebro-spinal meningitis New York 7, Chicago and Lawrence 3 each, Worcester 2, Brooklyn and Cleveland 1 each. From erysipelas New York and St. Louis 4 each, Chicago 3, Philadelphia and Boston 2 each, Brooklyn and Cambridge 1 each. From whooping-cough New York 8, Pittsburgh 2, Chicago, Philadelphia, Cleveland, Nashville, Charleston and Haverhill 1 each. From malarial fever New York 4, Brooklyn 2, Philadelphia 1. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending April 2d, the death-rate was 22.2. Deaths reported 4,346: acute diseases of the respiratory organs (London) 430, whooping-cough 170, measles 134, diarrhœa 42, scarlet fever 33, diphtheria 30, fever 16, small-pox (London) 2.

The death-rates ranged from 14.7 in Croydon to 28.1 in Manchester; Birmingham 21.9, Bolton 26.0, Bristol 25.2, Hull 18.8, Leeds 24.6, Liecester 21.8, Liverpool 25.0, London 21.4, Nottingham 23.2, Oldham 24.5, Sheffield 20.7, Sunderland 22.8, Wolverhampton 26.2.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING APRIL 16, 1892.

Bailhache, P. H., surgeon. Granted leave of absence for seven days. March 29, 1892.

Purviance, George, surgeon. Detailed as chairman of Board for physical examination of officers, Revenue Marine Service. March 30, 1892.

Godfrey, John, surgeon. Detailed as inspector of immigrants, port of New York. April 14, 1892.

Hamilton, J. B., surgeon. Detailed as chairman of Board for physical examination of surfman, Life-Saving Service. March 31, 1892.

Mead, F. W., surgeon. Detailed as chairman of Board for physical examination of officers of Revenue Marine Service. April 16, 1892.

Banks, C. E., passed assistant surgeon. Ordered to examination for promotion. April 14, 1892.

Carmichael, D. A., passed assistant surgeon. When relieved at Port Townsend, Wash., to proceed to San Francisco Quarantine for duty. April 8, 1892.

McIntosh, W. P., passed assistant surgeon. When relieved at San Francisco Quarantine to proceed to New Orleans, La., for duty. April 8, 1892.

Pettus, W. J., passed assistant surgeon. Granted leave of absence for thirty days. April 12, 1892.

Magruder, G. M., passed assistant surgeon. When relieved at Portland, Oregon, to proceed to Port Townsend, Wash., for duty. April 8, 1892.

Kinyoun, J. J., passed assistant surgeon. Detailed as chairman of Board for physical examination of candidates and officers, Revenue Marine Service. March 30, 1892. Detailed as recorder of Board for physical examination of officers, Revenue Marine Service. April 16, 1892.

Vaughan, G. F., passed assistant surgeon. Detailed as recorder of Board for physical examination of candidates and officers, Revenue Marine Service. March 30, 1892.

Geddings, H. D., assistant surgeon. Ordered to examination for promotion. March 29, 1892.

Wertenbaker, C. P., assistant surgeon. Detailed as recorder of Board for physical examination of surfman, Life-Saving Service. March 31, 1892. Ordered to examination for promotion. April 5, 1892.

Perry, J. C., assistant surgeon. To proceed to Gulf Quarantine for temporary duty. April 9, 1892.

Young, G. B., assistant surgeon. When relieved at St. Louis, Mo., to proceed to Portland, Oregon, for duty. April 8, 1892.

Stimpson, W. G., assistant surgeon. Detailed as recorder of Board for physical examination of officers, Revenue Marine Service. March 30, 1892.

Brown, B. W., assistant surgeon. Detailed as chairman of Board for physical examination of officers, Revenue Marine Service. April 1, 1892. To proceed to Port Townsend, Wash., for temporary duty, April 8, 1892.

Rosenan, M. J., assistant surgeon. When relieved at New Orleans, La., to proceed to St. Louis, Mo., for duty. April 8, 1892.

Cofer, L. E., assistant surgeon, To proceed to Buffalo, N. Y., for temporary duty. April 8, 1892.

Eager, J. M., assistant surgeon. To proceed to Gallipolis, Ohio, for temporary duty. April 8, 1892.

Gardner, C. H., assistant surgeon. To proceed to San Francisco, Cal., for temporary duty. April 8, 1892.

AMERICAN PEDIATRIC SOCIETY.

Preliminary Programme.

The American Pediatric Society will hold its fourth annual meeting in Boston, Mass., May 2, 3, and 4, 1892. The Sessions will be held in the Boston Medical Library Association Building, 19 Boylston Place.

Monday, May 2.

First Session (2 p. m.). — 1. The President's Annual Address. By William Osler, M.D., of Baltimore, Md. 2. "Experiments as to the Value of Nascent Ozone in certain Forms of Diseases of Children, with Demonstration of an Efficient Generator," Augustus Caille, M.D , New York City. 3. "Manifestations of La Grippe in Children," Chas. Warrington Earle, M.D., Chicago, Ill. 4. "An Epidemic of Alopecia in a School of Girls," Chas. P. Putnam, M.D., Boston, Mass.

Tuesday, May 3.

Morning Session (10 a. m.). — 1. Discussion arranged by the Council on "The Relations of Rheumatism and Chorea," by C. W. Townsend, M.D., Boston, Mass., M. Allen Starr, M.D., New York City, Samuel S. Adams, M.D., Washington, D. C. 2. "Nomenclature of Diseases of the Mouth," T. M. Rotch, M.D., Boston, Mass. 3. Report of the Committee on Nomenclature of Stomatitis. 4. "Pseudo-Diphtheric Processes," W. D. Booker, M.D., Baltimore, Md. 5. "Treatment of Diphtheria by Sublimations of Mercury," Dillon Brown, M.D., New York City.

Afternoon Session (3 p. m.). — 1. "Typhoid Fever in Children under Two Years," W. P. Northrup, M.D., New York City. 2. "Typhoid Fever in Children," Chas. Warrington Earle, M.D., Chicago, Ill. 3. "Typhoid Fever in Infancy," W. S. Christopher, M.D., Chicago, Ill. 4. "Acute Emphysema in Children, with Report of Cases," F. Forchheimer, M.D., Cincinnati, O. 5. "Pre-tubercular Anæmia," B. K. Rachford, M.D., Newport, Ky.

Evening Session (8 p. m.). — 1. Business Meeting at the residence of Dr. T. M. Rotch, No. 197 Commonwealth Avenue. 2. Report of the Council and election of officers.

Reception (9 p. m.), of the members of the American Pediatric Society, to be given by Dr. T. M. Rotch at his residence.

Wednesday, May 4.

Morning Session (10 a. m.). — 1. Prevention *versus* Medication in the Management of Diseases of Children," J. N. Love, M.D., St. Louis, Mo. 2 "Syphilitic Broncho-Stenosis," A. Seibert, M.D , New York City. 3. "A Simple Method for Clinical Examination of Breast Milk," L. Emmet Holt, M.D., New York City. 4. "Sacro-Coccygeal Tumor in a Child Three Weeks Old; Operation; Recovery," F. Huber, M.D., New York City. 5. (Title to be announced,) Henry Koplik, M.D., New York City.

Afternoon Session (3 p. m.). — 1. "Two Tracheal and Bronchial Casts," F. Huber, M.D., New York City. 2. "A Case of Death from Laryngismus Stridulus in Incipient Rachitis," Samuel S. Adams, M.D., Washington, D. C. 3. "The Value of Milk Laboratories for the Advancement of our Knowledge of Artificial Feeding,"[1] T.M. Rotch, M.D., Boston, Mass. 4. Action relative to the death of Dr. John Amory Jeffries, of Boston, Mass.

Samuel S. Adams, M.D., *Secretary*,
1632 K Street, Washington, D. C.

SOCIETY NOTICES.

Suffolk District Medical Society. — The annual meeting will be held at 19 Boylston Place, on Saturday, April 30, 1892, at 8 p. m.

Dr. G. W. Gay: "A Case of Nephrolithotomy; removal of a stone weighing five ounces; Recovery."

Dr. T. M. Rotch: "Improved Methods of Modifying Milk for Infant Feeding."

Dr. J. H. McCollom will show (by lantern slides) the various stages of the eruption of Small-pox.

Dr. C. B. Belt will read a circular of information in regard to the Pan-American Medical Congress: Dr. A. P. Clarke, of Cambridge, and Dr. Marcy will make remarks about it.

Election of officers.

Supper after the meeting.

Members are requested to notify the Secretary at 188 Marlborough Street, of any error or change in address.

Edward N. Whittier, M.D., *President*.
James J. Minot, M.D., *Secretary*.

Boston Society for Medical Observation. — A regular meeting will be held Monday, May 2, 1892, at 8 o'clock, at 19 Boylston Place.

Readers: Drs. M. H. Richardson and J. G. Mumford, "Surgical Methods in Private Practice, with Report of Cases."

Dr. F. H. Williams will report "A Case of Transfusion after Intestinal Hæmorrhage in Typhoid Fever."

John C. Munro, M.D., *Secretary*.

Surgical Section of the Suffolk District Medical Society. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, May 4, 1892, at 8 o'clock.

Dr. S. J. Mixter, "Median Abdominal Section for Removal of Tumor of the Kidney; Recovery."

Dr. H. W. Cushing, "A Case of Nephrectomy; Recovery."

Dr. John L. Morse, "Tracheotomy with Delayed Removal of the Tube."

Dr. C. L. Scudder, "Diphtheria; Tracheotomy, Curetting the Trachea; Recovery."

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

THE MIDDLETON-GOLDSMITH LECTURE,

This lecture before the New York Pathological Society, will be delivered by Dr. Francis P. Kinnicutt, Wednesday evening, May 11th, at the Academy of Medicine. Subject, "New Outlooks in the Prophylaxis and Treatment of Tuberculosis."

APPOINTMENT.

Dr. W. S. Halsted has been elevated to the full professorship of surgery in Johns Hopkins University. He was formerly assistant professor.

RECENT DEATHS.

Sheldon S. Clark, M.D., of St. Albans, Vt., died April 21st, at the age of sixty-five years. He had been engaged in the active practice of his profession since 1849, he was a member of the Vermont State Medical Society and had been secretary and later the president of the Society.

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[1] During the Sessions of the Society, the members are invited to visit and inspect the Milk Laboratory, 203 Clarendon Street.

Original Articles.

THE OPERATIVE TREATMENT OF GOITRE.[1]

BY J. COLLINS WARREN, M.D.

Tumors of the thyroid gland are not common in this country, and consequently the experience of American surgeons is small as compared with that of many on the continent of Europe, where within the last decade the operative treatment has received a considerable impetus.

The dangers of goitre appear to be due principally to dislocation and compression of the trachea and consequent interference with the respiration. There is also a certain amount of venous congestion in the cervical region, with consequent dilatation of the right heart, which may be followed by degenerative changes in the tissue of that organ. There may also exist some bronchiectasis and emphysema.

Pressure upon the trachea causes, in advanced cases of the disease, displacement and flattening of the tracheal canal, so that it presents an appearance known as the scabbard-like distortion. There is also, according to Rose, a softening of the tracheal rings, due to pressure, giving rise to a condition which favors the formation of a kink in the canal, following quick movements of the head, while the body is motionless. Sudden death may result under these circumstances. The disorders of respiration, seen in animals after removal of the thyroid gland, are regarded by Horsley as due to changes in the functional ability and activity of the respiratory centre, due to changes brought about in the nutrition of the tissues by the cessation of function of the gland.

The difficulties and dangers of thyroidectomy have usually been considered as objections to the operation. On this account many modes of treatment have been devised. It is not my purpose to give you this evening a complete summary of the various forms of treatment of goitre. I will, therefore, briefly refer only to one or two methods in which I have had some experience.

For clinical purposes the enlargement of the thyroid gland may be divided into three varieties — the vascular, the parenchymatous and the cystic. A favorite method of treating the vascular goitre is by electrolysis, and many of you are familiar with the monograph by Dr. Robert Amory. His results show that the operation is well suited to this variety, and if complete cure cannot be effected in all cases, considerable diminution in the size of the gland may be procured. Good results can also doubtless be attained in some of the parenchymatous types of the disease by this method.

The internal use of iodine may be of some use in young persons in diffuse forms of goitre; but, according to Bruns, if no change occurs in the size of the tumor very soon after the use of the drug, improvement is not to be looked for.

Parenchymatous injections of iodine have been employed, particularly in the cystic variety. A number of cases of sudden deaths are, however, reported as following the use of this remedy, although many favorable results have been obtained.

Death may be caused by embolism, and also by paralysis of the abductor muscles through reflex irritation following an absorption of the iodine into the pneumogastric nerve or the recurrent laryngeal.

Wörner reports 75% of successful cases by this method, and in one case a single cyst, the size of a man's head, was cured in this way. It appears to be best adapted to single, thin-walled cysts. The possibility of suppuration following this mode of treatment should be considered, as well as the occurrence of hæmorrhage from the interior of such cysts when once they have been opened.

The operation of thyroidectomy appears to be indicated in cases when the difficulty of breathing has become a prominent symptom, or when the tumor shows a tendency to grow rapidly and there is also some disturbance in the respiration. For cosmetic purposes solely, the operation should not be performed, except, perhaps, for a small nodule which can easily be enucleated.

The mortality of the operation has dropped, according to Bruns, from 41%, in 1850, to 5.8%, in 1884. Kocher reports 250 operations, with only six deaths.

The incisions recommended by different operators are either Y or V shaped, in the case of removal of both lateral lobes, or along the border of the sterno-mastoid if one lobe only is to be removed.

Several large subcutaneous veins are usually found running vertically over the front of the tumor. Their lumen is very capacious, and they retract quickly beneath the margins of the incision, and unless promptly secured with forceps are liable at any moment to give rise to troublesome bleeding. In order to reach the surface of the tumor, the edge of the sterno-mastoid must be sought for, and that muscle, which is thin and flattened, must be drawn aside. In two of my cases it was necessary to divide the sterno-thyroid and sterno-hyoid muscles, but the omo-hyoid, which frequently has to be divided in these operations, was not seen. On reaching the tumor, it is important to divide all layers of connective tissue until the capsule is reached. It is also important to avoid cutting into the tumor itself, owing to the difficulty in controlling the hæmorrhage which ensues. Starting now from the median line the lobe should be slowly and cautiously separated from the surrounding tissues by the finger or some blunt instrument, and an effort made to reach its upper and outer border, beneath the margin of which the superior thyroid artery will be found. This should be clamped, as also a number of smaller vessels which have been divided in the meantime. The tumor is then drawn inwards and downwards until the inferior thyroid is reached, which must also be clamped and divided. Great care must be taken at this point to avoid clamping or cutting the recurrent laryngeal nerve, which lies close to and behind this vessel. The nerve is always hard to find, and in no case have I seen it. By keeping close to the surface of the tumor, and avoiding wandering between outlying layers of connective tissue, this mishap can be avoided probably in the great majority of cases. Large masses of tissues should not be hastily caught up with the forceps during this period of the operation. If the artery can be found and isolated, it would be well to pass a ligature around it with an aneurism needle. On approaching the trachea the knife has to be used more freely, as the tumor is usually quite adherent to its anterior surface.

In very large and adherent growths the operator may content himself with dividing the isthmus, as the tumor may subsequently undergo atrophy after this operation. Pressure on the trachea will be relieved also in this way.

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[1] Read before the Boston Society for Medical Improvement, February 8, 1892.

Whatever the method employed be, the bleeding is usually very free, and the operation more or less prolonged. Rose reports a case where 200 ligatures were applied, and the operation lasted several hours. The larger types of goitre, so familiar to the Swiss tourist, are fortunately rarely seen in this country. I am in the habit of using a small drainage-tube to avoid pressure on the trachea during the primary serous oozing.

The most important feature of the operation remains to be mentioned; that is, the necessity of leaving behind a portion of the thyroid gland, as myxœdema is almost certain to develop if all the gland-tissue has been removed. It is true that quite a number of cases of "total extirpation" have been found without the occurrence of this unfortunate sequel, but it is probable either that a portion of gland-tissue has unwittingly been left behind, or that accessory glands existed. The presence of such glands is stated by one writer to be demonstrated in about one-half the cases examined. They lie in different places — near the arch of the aorta, at the side of the trachea, or between it and the œsophagus, or near the hyoid bone.

There are various theories still put forward as to the functions of this gland. By some it is supposed to be a blood-gland connected in some way with the development of the blood-corpuscle. It is also supposed to remove certain deleterious substances from the blood, or to prepare for the nerves certain substances which are necessary for their proper nutrition. It is also supposed to be a regulator of the circulation of the brain. It is probable, as shown from experiments on cats and dogs, all of which died after removal of these glands, that the organ plays an important part in the nutrition of the nervous system. Before this peculiar result of the removal of the gland was understood a large number of cases of total extirpation were performed. Kocher found a development of myxœdema, or cachexia strumipriva, as it was originally called, in all but two of eighteen cases: as a recurrence of the growth took place in both of these cases it is probable that a portion of the gland was left behind in both instances. Reverdin in eleven cases of total removal had but five cases of cachexia.

In those cases where only a small fragment is left behind the symptoms of myxœdema may develop to a certain extent and subsequently disappear after the fragment enlarges, as is usually the case. They may grow to considerable size, as the following case by Bircher shows:

A servant girl, twenty-seven years old, underwent the operation of total extirpation for a goitre accompanied with difficulty of breathing. The operation was followed by paralysis of both recurrent laryngeal nerves, the resulting hoarseness disappearing seven weeks later. Four weeks after the operation she became languid and sleepy, so as to be unfit for housework. Her mental condition deteriorated; her expression changed; and her complexion became pale and the skin wrinkled. This condition continued for two months, and gradually improved; and at the end of six months had entirely disappeared. In front of the larynx there was now to be seen a fragment of the thyroid gland, which had grown to the size of a filbert. It had evidently been left behind by accident.

Another case described by this author is of peculiar interest, as the symptoms of myxœdema were temporarily relieved by the grafting of a fragment into the peritoneal cavity and apparently permanently removed by a second operation of the same kind.

A peasant woman, thirty-three years old, slightly affected by cretinism, was operated upon for partial removal of the thyroid gland. A small lobe, which it was intended to leave behind, came out accidentally with the rest of the tumor. The wound healed by first intention. Two months later she returned, and reported attacks of severe cramps. She was easily tired, and was always sleepy. Her appearance had changed entirely. Her face had become swollen under the eyes and about the cheeks and lips. Her gait was staggering. Her intellect was much deteriorated. Soon after entering the hospital she had an epileptic seizure. Six months later the marasmus had become so pronounced that she could not leave the bed. It was decided to try implantation of thyroid tissue into the abdominal cavity. Laparotomy was performed simultaneously with thyroidectomy in a case of partially cystic goitre. Two fragments, about the size of filberts, were introduced through a small incision into the peritoneal cavity. A few days later improvement began to show itself, and in twelve days the patient was able to leave her bed and to walk about the ward. Her intelligence improved somewhat. At the end of two months, however, a relapse occurred; and the operation of implantation was repeated, about five times the amount of gland-tissue being introduced into the abdomen on this occasion. The myxœdema swelling soon began to disappear; and, in the course of two months, the patient was able to do a good day's work as kitchen-maid. Six months after the second implantation the patient was still in good health.

The non-operative or atrophic myxœdema is a rare disease and occurs sporadically, not being indigenous to any particular quarter of the globe. It is found more frequently in women than in men or children. It is supposed to have some connection with disturbed genital function, as it occurs frequently at the menopause. The disease develops slowly. The first symptoms are observed in the skin, which becomes rough and dry. The hair, sometimes the teeth, drop out, and the nails become brittle. The skin next becomes œdematous, but there is not as in ordinary œdema pitting on pressure. The face swells first, and loses its expression, later, the head, abdomen and extremities are affected; genuine œdema may occur in the later stages of the disease when the internal organs have undergone extensive changes. The changes seen in the nervous system are more or less well marked. The reflexes are diminished; there is slowing of all movements and the gait is a rambling one. The power of co-ordination is somewhat disturbed. The intellect is at first intact, but later there are delusions, and sometimes delirium. The circulation is feeble; hæmorrhages are often seen in the skin and mucous membranes, and the catamenia are irregular. The course of the disease is slow the duration varying from six to twenty years. Death occurs from exhaustion and visceral complications. The pathological changes consist in gelatinous hypertrophy of the connective tissue, particularly of the skin and subcutaneous adipose tissue, with enlargement of the lymphatic vessels. There is also a thickening of the walls of the arteries. The thyroid gland tissue atrophies and gradually disappears and the interstitial fibrous tissue becomes greatly increased in amount.

The operative myxœdema or the cachexia strumipriva has become familiar since the general adoption of the total extirpation of the thyroid — an operation which has in consequence been abandoned. This type runs its course more rapidly. The cerebral irritation is more marked in consequence, and we find vertigo, tetanic spasm and epilepsy in many cases. It may terminate fatally. It is interesting to note in this connection that after thyroidectomy in dogs the pituitary gland is swollen and the cells became vacuolated and ultimately disintegrated the longer the animal survives the operation. In sporadic cretinism when the thyroid gland is lost, the pituitary body has been found to be enlarged.[2] In this form, however, recovery may occasionally result either by the development of accessory lobes or fragment of gland tissue left behind, or by the implantation of portions of the gland. Those fragments left behind may grow to the size of a walnut, and it is only by the development of these fragments that the patient escapes the disease.

It is proved by experiment that dogs and cats cannot live without the thyroid gland — the animals become inert, sleepy and slow in movement. The sensibility is diminished and muscular twitchings are frequent. Death occurs in four to twenty-seven days. At least one-third or in some cases one-fourth of the gland must be left to prevent the onset of the fatal cachexia. Shiff found that if a piece of gland was implanted into an animal the thyroid gland could be removed without injury. When animals thus treated were killed a few months later fragments of the original gland implanted were found still remaining. If the implanted gland becomes properly vascularized and resumes its functional activity the cachexia does not show itself, but if the gland undergoes atrophy and degeneration the cachexia supervenes. Colzi and Ewald found that the transfusion of the blood of healthy animals into the circulation of those which had been deprived of the gland delayed the cachexia. Improvement always followed subcutaneous injection of the juice of the gland. These observers conclude that the gland removes from the blood certain substances which are injurious to it if allowed to accumulate — a condition analogous to uræmia after extirpation of both kidneys. Horsley found a diminution in the red corpuscles and an increase in the white corpuscles in experimental myxœdema. There was a diminished power of coagulation and an increase in the amount of globulin and mucin in the serum, and also an increase of mucin in the parotid and submaxillary glands. Horsley holds that the "thyroid gland is a structure essentially connected with the metabolism of the blood and tissues; that in fulfilment of its functions it is hæmopoietic both directly and indirectly, and that it forms, that is, secretes from the blood, a colloidal substance, which is transmitted *via* the lymphatics from the acini of the gland to the circulation."[3]

Cretinism is regarded by Bircher as essentially a different disease from myxœdema. It occurs endemical and is found at an early period of life, and is associated with goitre. The change in the facial appearance, the motor disturbances and the alteration in speech and intelligence are common to both diseases, but we do not find the same changes in the hard skin and sensation as in myxœdema. In the latter disease the pathological changes are found in the soft parts, but in cretinism the principal deformity is produced by alteration in the form and arrangement of the bones. These are particularly marked in the skull, which is much broader than in the normal state. The departure from the normal condition may be very slight in some forms, little being noticed beyond an enlargement of the thyroid. In another class of cases deafmutism is the principal symptom. In the more prominent type the patients are idiotic. The speech is affected in the great majority of all cases, a symptom rarely noticed in myxœdema. It is more common in male adults in its severest type.

The following series of four cases represent the extent of my experience upon the subject. They show that the milder forms can be easily removed by an operation apparently harmless, but one, at the same time, not without its dangers. When, however, we consider the great deformity and discomfort of a large bronchocele and the danger of sudden death, we are hardly authorized in declining to perform the operation.

Case I. Cyst of thyroid. H. M., seventeen years of age, a domestic, was born in New York, but has lived for many years in Wakefield, Mass. She entered the hospital November 10, 1891. Her father died of consumption and she herself has never been healthy. Seven years ago she first noticed a little tumor in the front of her neck which has grown steadily until two months ago a little additional nodule began to form below. On examination the thyroid gland appears to be symmetrically developed and a swelling about the size of a lemon occupies the median line of the neck, a smaller growth appears to be attached to the tumor at the lower right-hand corner. There had been occasionally slight disturbance of respiration, but the patient was anxious for the removal of the tumor, partly on account of the deformity as it showed a tendency to increase in size. The operation was performed on November 15th. An incision was made in the median line about four inches long over the tumor, which, when exposed, was found to be cystic. When the cyst wall was reached it was enucleated without much difficulty from the normal gland-tissue. There was very little hæmorrhage, a quill-drain was inserted and the edges of the incision were brought together by interrupted sutures and a light, dry dressing was applied.

The patient rallied well from the operation, but about five hours after the operation, while my assistant, Dr. Bartol, was in the ward, respiration suddenly ceased, the patient became cyanotic and the jaws were firmly closed. Tracheotomy was performed by Dr. Bartol immediately and an elastic catheter was introduced and retained until a tube could be obtained. The tube was allowed to remain for forty-eight hours. The patient made a rapid recovery and was discharged December 3d with the wound entirely healed. She visited me recently, about a year after the operation, and was in excellent health without any signs of thyroid enlargement.

The following report was made by Dr. Whitney: "Cystic growth from region of thyroid. Section shows several cysts, the largest was the size of a small peach filled with dark, reddish-black fluid, showing blood-corpuscles, granular-corpuscles and cholesterin crystals. Section of wall shows normal thyroid tissue with here and there a tendency to cystic dilatation. Diagnosis: goitre with cystic degeneration."

Case II. Cyst of thyroid. L. M., age twenty-seven, married; born in Massachusetts, lives in Quincy. Entered the hospital January 5, 1892. Her family history was negative. Was always well and has had five children. Four years ago the patient first noticed a small swelling in the neck which has grown very slowly and has never pained her. She states that she has some difficulty in swallowing and that her breathing is somewhat impeded and that she suffers from dyspnœa on exertion. On examination a tumor the size of a large hen's-egg is seen just below the cricoid cartilage on the right of the median line. It is soft and movable and ascends and descends with the movements of the trachea during the act of swallowing. Pulse 90, strong and regular. The eyes are not prominent.

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[2] Horsley.

[3] British Medical Journal, January 30, 1892.

A laryngoscopic examination was made on January 6th, by Dr. J. P. Clark, who states that the rima glottidis was practically in the median line; motion of cords free, although in respiration the right cord does not move as far from the median line as the left. Some prominence below the right cord of the tracheal wall. No evident diminution of the calibre of the trachea.

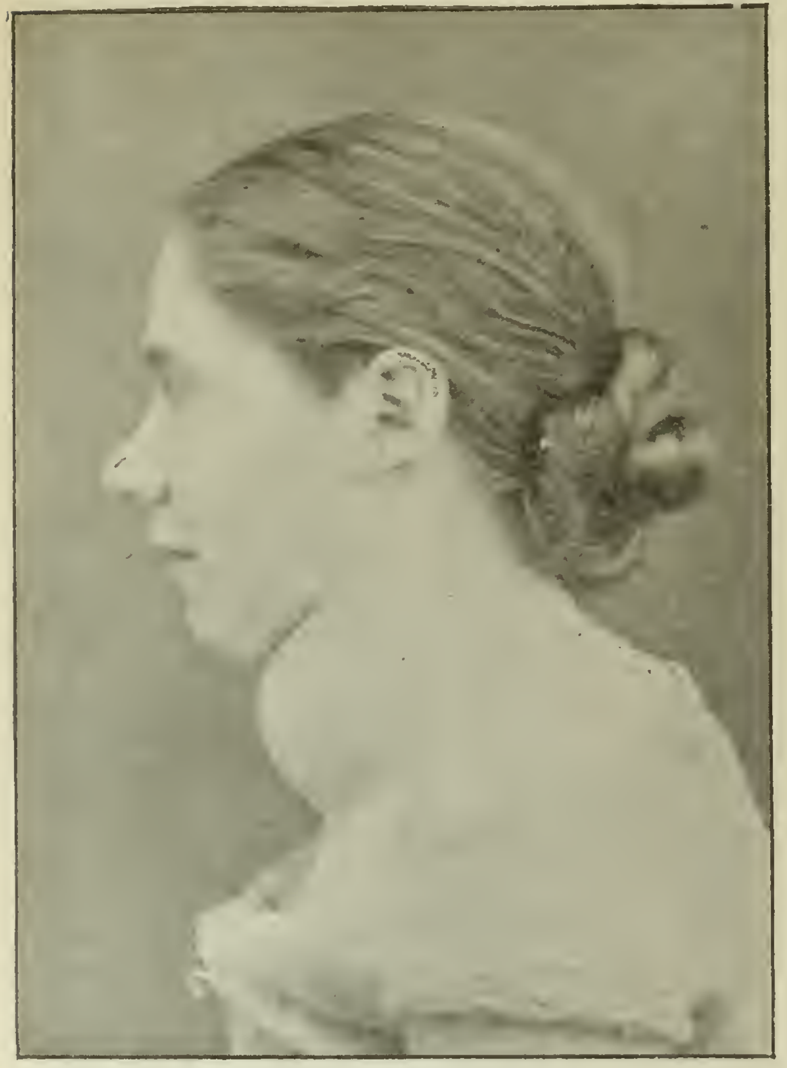

Fig. 1. Before Operation.

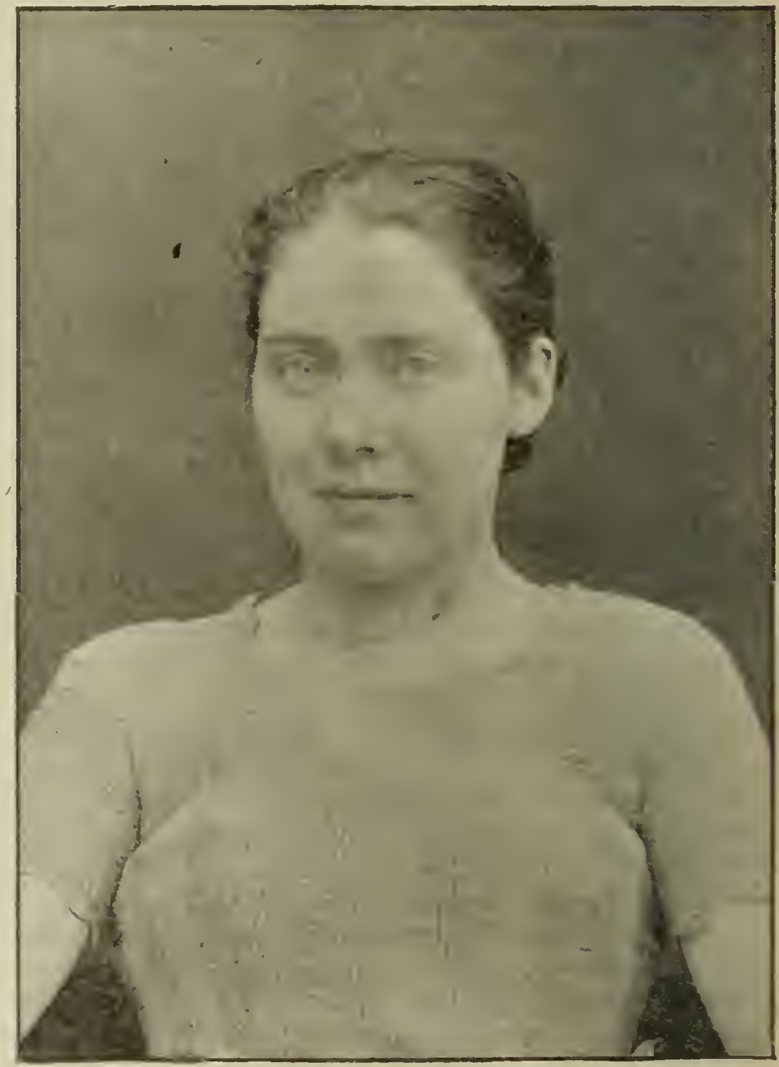

Fig. 2. Cicatrix Fourteen Days after Operation.

Operation, January 9, 1892. An incision parallel to the anterior border of the sterno mastoid muscle was made over the tumor, exposing the wall of the cyst which was carefully dissected out with but little hæmorrhage. It was found to contain a dark fluid. A small drainage-tube was inserted and the edges of the wound brought together by silk sutures.

The stitches were removed on the sixth day, and the wound healed promptly except at the point of drainage where a small sinus remained for two or three weeks.

Dr. W. F. Whitney made the following report of the microscopic examination: "A cystic growth the size or a small peach in one lobe of the thyroid. Microscopic examination showed portions of the gland in the wall of the cyst. Cyst of thyroid."

Case III. Parenchymatous growth of thyroid. C. M., forty years of age, was born in Canada but lives at present in Boston; is married and had one child eighteen years ago, two still-births since. Her mother and one sister are both the subjects of goitre. Her general health has been good. Eleven years ago the patient first noticed a small swelling corresponding to the right lobe of the gland followed later by a similar condition on the left side, eventually there was enlargement of the isthmus. The tumor has grown slowly and has varied considerably in size from time to time. During the past year there has been an increasing obstruction to respiration. The eyes are not prominent; the pulse is 115 and regular, but not strong. There is dyspnœa on exertion. The catamenia are regular.

On examination a tumor of dumb-bell shape is seen stretched across the trachea. The right lobe is about the size of an orange and the left lobe is the size of a goose-egg. There are numerous enlarged veins running over its surface. It is movable and rises with the larynx on swallowing. There is no pulsation.

Laryngoscopic examination by Dr. J. P. Clark: "Rima glottidis obliquely situated, being turned somewhat to the right. The trachea is bent to the left slightly. No constriction as far down as the fourth or fifth ring. Motion of cords apparently free and equal."

Operation, January 9, 1892. A curved incision with convexity downwards was made from the apex of left lobe to that of the right lobe, and the operation performed as already described. Two small fragments of gland-tissue are left behind, one in the left lobe about the size of half a walnut, and one in the isthmus of the same dimensions. Two quill tubes were inserted to avoid pressure during the early oozing of the walls of the wound. The stitches and tubes were removed on the third day, and the wound dressed with collodion and cotton. A small collection of pus subsequently formed at the most dependent point of wound, and left a sinus which had not healed three months after the operation, when the patient left the convalescent home. There were at that time no signs of myxœdema.

Microscopical examination by Dr. W. F. Whitney: "Several large, dark, rounded growths from thyroid region. Section showed some small cystic cavities, the walls in places infiltrated with lime salts, but in general the growth was of the character of the thyroid, but with enlarged alveoli containing a colloid material. Bronchocele."

This patient suffered from aphonia for several weeks after the operation, and a laryngoscopic examination showed that the right vocal cord was paralyzed. The voice, however, was subsequently fully restored.

Case IV. A. S., single, twenty-five years of age, entered the hospital February 1, 1892. She was born in Ireland, and lives at present in Dorchester. Her family history is good. She has always been healthy. Five years ago she first noticed a "bunch below the Adams apple." This has grown steadily since, although it varies at times somewhat in size (Fig. 1). There is no difficulty in swallowing and no change in voice or breathing.

On examination an enlargement of the thyroid gland is seen on both sides, that on the left being about the size of a large orange, and about twice as large as that on the right. The tumor is non-pulsatile and moves with deglutition. The larynx and trachea are displaced somewhat to the right of the median line. There is no protrusion of the eyes. Extirpation of the gland performed February 6th. A semilunar incision, about five inches in length, was made from the apex of the left lobe downwards and across the median line to a point considerably lower on the left (Fig. 2). A number of large veins were divided, but there was no great difficulty in controlling the bleeding as the capsule was separated from the surrounding tissues. A portion of the right lobe, about the size of a horse-chestnut, was allowed to remain. One quill drainage-tube was inserted, and the edges of the wound were brought together by silk sutures. The dressing was applied loosely, but sufficiently firm to prevent exposure of the wound.

The wound healed by first intention, the drain having been removed on the second day. The photograph (Fig. 2) was taken about ten days after the operation. A microscopical examination showed a growth similar to that found in Case III.

In a case of large cystic goitre, which recently came under my notice, where tapping and the injection of iodine had been tried, the swelling and signs of suppuration induced me to lay open the sac freely and pack it with iodoform gauze, which operation was successfully performed without any trouble from hæmorrhage. The tumor was about the size of a cocoanut. I have not yet heard of the subsequent history of the case.

TUBERCULAR ULCERATION OF THE HARD PALATE AND GUMS.[1]

BY A. COOLIDGE, JR., M.D.

The lesion to which I wish especially to call attention is a tubercular ulceration which occurs on the gums around the upper front teeth and on the hard palate just behind them. Its usual appearance is that of a coarse, granular ulceration, deep red, and often in places presenting a raspberry appearance. It is most active close to the teeth, and there is little or no swelling. The edges of the ulcer on the hard palate are not elevated, and often merge gradually into the healthy mucous membrane. The mucous membrane alone is attacked; there is no caries of bone. It is essentially chronic in its history, and shows no attempt to heal, at least, while the teeth remain. The gums may be slowly absorbed, leaving the roots of the teeth bare.

This appearance has been described as occurring secondarily, both in cases of primary lupus of the face and of the throat. It has also been seen in connection with more active tuberculosis of the lungs, pharynx and other organs.

The anterior palatine canal has been suspected as the channel through which the disease extended from the nose to the palate, or from the palate to the nose, and this seems to be borne out in two of the cases which I report. It surely seems possible that this lesion of the gums may be the bridge by which lupus or other tubercular disease may pass from the throat to the nose, or *vice versa*.

In the three cases which I report, the lesion of the gums and hard palate is the only symptom which occurs in all. In none of them has there been up to this time any disease of the lungs, larynx or epiglottis.

Case I. The first case is a typical one of lupus. I. K., twenty-one years of age. Her grandmother died of phthisis, her family history otherwise negative, previous health good. In 1888, she noticed a sore spot on the gum above the right canine tooth, which in the course of two or three months had spread around the gums of the upper incisors on to the hard palate just back of the teeth, and appeared as a small spot inside the nostril, after which it appeared on the face. When the fauces became involved it is difficult to say. The patient noticed that she was growing deaf a year before the spot appeared on the gum, but did not notice any serious trouble in the throat until afterwards. The disease in the pharynx gave the patient so little discomfort that she did not realize that there was any serious trouble there until extensive cicatrices had formed. I suspect that the soft palate was the primary seat of the disease. I first saw her in August, 1890, she was, and still is, being treated by Dr. J. C. White for lupus of the nose and face. The gums round the upper incisors, and the mucous membrane of the hard palate, for an inch back of the incisor teeth, showed a granular ulceration of a deep red color. The pillars of the fauces and the velum had coalesced with the posterior pharyngeal wall leaving only a small opening into the nasal pharynx. The uvula had disappeared, the velum and back of the pharynx were white, cicatricial and hard, except that on the borders of the cicatricial tissue in some places were slightly elevated, inflamed nodules. From January until May, the patient was in the Massachusetts

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[1] Read before the Boston Society for Medical Improvement, February 8, 1892.

General Hospital for treatment with tuberculin. While there, a small ulcer appeared on the tongue about an inch from the tip, which has slowly extended since, until it is now about the size of a quarter. The ulceration of the gums spread somewhat on to the mucous membrane of the lip. The treatment produced little or no permanent effect upon the local disease. On two or three occasions, the white cicatricial tissue of the pillars has become inflamed, and local ulcerations have temporarily appeared, a process which has often been noticed in lupus of the throat.

At present, the patient is in much the same condition as when first seen, except that the skin has improved very much under treatment and that the tongue is involved. The granulations of the gums have resulted in their contraction, so that the roots of the teeth are more exposed than formerly. The molar teeth are also surrounded by granulations. The mucous membrane of the hard palate is ulcerated in the vicinity of the teeth, and cicatricial in the centre.

Case II. G. H., aged eighteen years. Her two grandmothers died of phthisis, other members of the family including the patient have always been delicate; family history otherwise negative. She has for some years been a patient of Dr. White at the Massachusetts General Hospital. At the age of fourteen the patient had diphtheria followed by enlarged glands of the neck, which discharged externally for a short time. A year later a spot appeared on the leg, which increased to about the size of a silver dollar, ulcerated, and after a few months cicatrized. She subsequently had five or six similar patches on the leg and arm. In 1887, her throat began to be sore and to feel swollen, and she began to be deaf. The next year, she noticed a spot on the hard palate, which soon spread to the gums of the incisor teeth. I saw her first in September, 1889, there was then nothing on her skin but the cicatrices mentioned above. In the throat, the left anterior pillar was of a pale pink color and irregularly thickened. The right pillar was ulcerated, cicatrizing round the edges of the ulcer with very little infiltration, and there was some loss of substance. The uvula was nearly buried by the cicatrization of the pillars. The interior of the nostril was normal. On the hard palate for about an inch behind the front teeth and on the gums around the incisor teeth, there was a granulating ulcer The patient was given full doses of mercury and iodide of potash for some time, but the local disturbances were apparently made worse by the treatment. For over a year different applications were made but without effect, except that after curetting the ulcer of the hard palate it cicatrized, but broke down again in a few weeks. It spread very slowly on to the mucous membrane of the upper lip, and by the destruction of the gums the roots of the teeth became prominent. In the autumn of 1890, a small ulcer appeared on the floor of the right nostril. At the same time also the ulceration of the right pillar extended on to the pharyngeal wall, but later cicatrized, binding the pillar and wall of the pharynx together on that side. In January, 1891, she entered the City Hospital in the service of Dr. George B. Shattuck, for treatment with tuberculin. Examinations of scrapings from the gums failed to show any tubercle bacilli. After injections with tuberculin, the ulcerations round the teeth and in the nostril became inflamed, the pharynx was less actively affected. The ulceration in the nostril extended, being preceded by an inflammatory zone, which finally attacked the skin of the nose just above the ala, and also the septal cartilage. While in the hospital the destruction of the gums was more rapid, the incisor teeth were so loosened that they were removed. An interesting point is that after the removal of the teeth, the ulceration of the hard palate, gums and mucous membrane of the lip which had existed for three years, cicatrized speedily leaving only a slight ulceration around the canine teeth. This has continued since, and has already loosened the canine, and has attacked the molars. At present, the patient has upon the side and bridge of the nose an ulcer about the size of a five-cent piece, with elevated edges, a destruction not only of the skin, but also of the septal cartilage. The patient's general condition is much better than it was a year ago.

Case III. M. F., twenty-seven years old, family history negative, previous health excellent, except that she had frequent headaches, which disappeared entirely while the mouth was sore, but have now returned. Five years ago, her brother noticed an ulceration, apparently tuberculous, on the edge of his left nostril, which has been under treatment, and which has, up to this time, involved only the skin around the nostril. Two years ago, the patient first noticed a sore spot on the gum over the left canine tooth, which slowly spread during a year and a half around the incisor teeth and on to the hard palate. I first saw her in the out-patient department last May. The gums around the front teeth and on the hard palate for half an inch behind them were ulcerated, deep red and coarsely granular. The patient complained of a tender spot on the floor of the left nostril, but nothing could be seen there. Except for this ulceration, the patient presented no signs of disease. She had felt run down for a few months, but was otherwise in good health. A month later, the disease had spread slightly. She was then sent into the hospital where, on July 25th, Dr. F. B. Harrington resected the upper jaw, removing all trace of the disease. The patient made a good recovery, and in three months had gained fifteen pounds. There has up to this time been no return of the disease. The part removed contained the alveolar process as far back as the first molar teeth and the anterior part of the palate process. The teeth although well-cared for had been very subject to caries as is seen by the number of fillings which they contain.

In reviewing these cases, we find a very similar lesion of the gums and hard palate in three cases presenting very different clinical histories; and this I have found to accord with previous reports. The granular ulceration of the gums has been most frequently seen in connection with lupus of the nose, especially where the soft palate or the larynx is also involved. The first of my cases belongs to this class. In the second case it appeared with a condition of the throat which has been described as scrofulous. In the third case the lesion on the gums and hard palate and a small spot in the nostril are the only evidence of disease.

Lennox Brown, in his book on diseases of the throat, puts under the head of tuberculosis only the more malignant form seen in connection with tuberculosis of the lungs and other organs. Lupus he considers a distinct disease, clinically at least. There is surely a great difference between the more malignant tuberculosis and the very slow progress often seen in lupus of the pharynx which tends to form hard cicatrices and which may lose all activity, at least temporarily.

There are, however, certain cases which are slow in their course and in which the diagnosis of lupus from the appearance in the throat alone is hard to make. That lupus may be primarily in the throat is not now doubted. Such a case was reported by Dr. F. I. Knight,[2] in 1881, before the American Laryngological Association, and similar cases have been reported since. The differential diagnosis between lupus and other tubercular lesions in the throat is often difficult. In the mouth, and especially around the teeth the distinction is even more difficult to make. Clutton[3] prefers to call it tubercular ulceration, and the same view is taken by Michelson[4] in a review of the literature of the subject. Tuberculosis of the mouth is generally secondary to tuberculosis of the lungs, pharynx or other organs, or to lupus. Primary tuberculosis of the mouth is not common. Some cases have, however, been reported, in most of which the disease has soon appeared in other parts of the body.

Tubercular ulceration of the gums and of the hard palate just behind the gums generally shows no tendency to heal, at least while the teeth remain. It tends to destroy the gums and loosen the teeth, and altogether acts as if the tissue immediately around the teeth were a favorable seat for the disease. It has been suggested that when the disease spreads from the gums to the nose, or from the nose to the gums, it does so through the anterior palatine canal. The lip is seldom involved, and the bone never.

I think that it is important to recognize the malignant character of this form of ulceration around the front teeth, and in cases in which both the nose and the soft palate, or pharynx, or larynx are not already involved, to take active measures to check the disease, and if possible to prevent it crossing by this bridge from the nose to the throat or *vice versa*. Of primary importance in the treatment is the removal of the teeth, the gums of which are attacked. While the teeth remain, the gums show no tendency to heal; after the teeth are out the gums are much more amenable to treatment. In my second case, by using the curette and galvano-cautery, the ulcer on the hard palate cicatrized, but the disease could not be got at around the teeth, and the cicatrization was only temporary. After the teeth had been removed the ulcer cicatrized readily; but by that time the nose was involved, apparently by direct extension. In the third case the unhealthy tissue was entirely removed, and I hope that the patient has been saved from tuberculous disease in other places. I have not been able to find a report of a similar operation for this trouble.

Microscopic examination of the mucous membrane, from Case III, after hardening in alcohol and imbedding in celloidine, showed a granulation tissue resembling in every respect that seen in tuberculosis, namely, very numerous Langhans giant-cells, intermingled with epithelioid and small round cells. The number of Langhans cells corresponded to those found in lupus, as distinguished from some of the other forms of tuberculosis. There was very little "cheesy degeneration" seen. A few sections stained by the Ziehl method failed to reveal the presence of tubercle bacilli, but the bacteriological examination was not sufficiently thorough to warrant any deductions.

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SEASON AND DISEASE-PREVALENCE IN CAMBRIDGE, 1880–1889 INCLUSIVE.

BY EDWIN FARNHAM, M.D., CAMBRIDGE, MASS.

Max. ±, min. =, above average +, below average —.

Disease.	January.	February.	March.	1st Quarter.	April.	May.	June.	2d Quarter.	July.	August.	September.	3d Quarter.	October.	November.	December.	4th Quarter.	Total.	Monthly Average.
Diphtheria . .	67 ±	37 —	43 —	147 —	43 —	59 +	47 —	149 —	55 +	44 —	34 =	133 =	63 +	62 +	64 +	189 ±	618	51.50
Scarlet Fever .	20 ±	12 +	12 +	44 +	5 =	13 +	6 —	24 —	5 =	5 =	10 —	20 =	11 —	18 +	17 +	46 ±	134	11.16
Typhoid Fever .	14 —	6 —	6 —	26 —	3 =	6 —	7 —	16 =	8 —	20 +	29 +	57 =	42 ±	27 +	24 +	93 ±	192	16.00
Measles	3 —	2 —	4 —	9 —	6 +	22 ±	16 +	44 ±	7 +	6 +	1 —	14 —	0 =	2 —	2 —	4 =	71	5.91
Whooping Cough, . .	13 +	6 —	8 —	27 +	4 —	5 —	2 =	11 =	18 ±	11 +	18 ±	47 ±	9 +	5 —	3 —	17 —	102	8.50
Diarrhœal Diseases, . .	8 =	8 =	8 =	24 =	9 —	10 —	43 —	62 —	343 +	383 ±	193 +	919 ±	62 —	19 —	8 =	89 —	1094	91.16
Bronchitis . . .	51 ±	47 +	36 +	134 ±	42 +	32 —	25 —	99 +	16 —	14 =	15 —	45 =	28 —	36 +	44 +	108 +	386	32.16
Pneumonia . .	119 +	98 +	110 +	327 ±	127 ±	93 +	48 —	268 +	42 —	27 =	40 —	109 =	63 —	97 +	118 +	278 +	982	81.83
Phthisis . . .	157 +	161 +	167 +	485 +	178 ±	152 —	159 +	489 ±	131 =	146 —	138 —	415 =	155 +	150 —	161 +	466 +	1855	154.58

SEASON AND REPORTED CASES OF DIPHTHERIA, SCARLET FEVER AND TYPHOID FEVER IN CAMBRIDGE, 1880–1889 INCLUSIVE.

Diphtheria . .	255 +	166 —	167 —	588 +	180 —	193 —	154 —	527 —	172 —	133 —	124 =	429 =	263 +	250 +	272 ±	785 ±	2329	194.08
Scarlet Fever .	230 +	184 +	195 +	609 +	143 —	139 —	120 —	402 —	100 —	77 =	126 —	303 =	190 +	257 +	279 ±	726 ±	2040	170.00
Typhoid Fever .	61 —	40 —	27 —	128 —	16 =	20 —	25 —	61 =	35 —	182 +	253 ±	470 +	219 +	165 +	94 —	478 ±	1137	94.75

The diseases contained in the accompanying table were selected on account of the large contingent supplied by them to the deaths from all causes, and because some of them belong to the class of diseases it is customary to call preventable, while others are ones which we hope to see hereafter included in that class.

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[2] Archives of Laryngology, vol. ii, 1881, p. 273.
[3] Clinical Society Transactions, vol. xix, 1886, and vol. xx, 1887.
[4] Zeitschrift für Klin. Med., 1890, xvii, p. 202.

In the period considered, the total number of deaths was 11,541, to which those here given contributed 5,434 (47%). The signs used are of little absolute value apart from the figures; for instance, in October scarlet fever has the sign —, in February and March the sign +, while the figures are 11 and 12.

In comparing individual months it must be borne in mind that February contains 283 days, the longest months 310 and the others 300 each. So also with the quarters: the third and fourth are equal, 920 days each, while the second has 910, and the first 903.

Diphtheria, scarlet fever and typhoid fever are notification diseases. In them the maximum number of deaths fell in the months immediately following those during which the maximum number of cases were reported.

Measles. — Not a notification disease during this period. No death from it in October. Out of 71 deaths, 38, or 53%, occurred in May and June. In the last four months only five deaths.

Whooping-Cough. — Not a notification disease. Of 102 deaths, 47 occurred in third quarter, 46% of the total. January had a large number, while June and December contained respectively two and three deaths.

Diarrhœal Diseases.— Includes diseases certified under the following names: diarrhœa, summer diarrhœa, infantile diarrhœa, inflammatory diarrhœa, summer complaint, enteritis, gastro-enteritis, entero-colitis, colo-enteritis, colitis, cholera infantum. The third quarter contains 84% of all the deaths from these diseases.

The greatest incidence and largest number of deaths in these diseases probably coincide pretty closely.

Bronchitis and Pneumonia. — Beginning with the third quarter, the minimum one for both, they rise in the second, with a further rise in the fourth, to reach their maximum in the first quarter.

In bronchitis, the rise from the minimum month, August, to the maximum month, January, is an unbroken one, while in the decline April appears to break the regularity.

In pneumonia, the rise from August, the minimum month, to April, the maximum month, has its regularity broken in February and March. In February, we are, of course, dealing with a shorter period than in the other months.

In bronchitis, the fourth plus the first quarter contains 62% of the total deaths. In pneumonia the same period contains 61%. In bronchitis, the minimum month, August, is to the maximum month, January, as 1 is to 3.6. In pneumonia the proportion is as 1 to 4.7.

Phthisis. — During the period considered this disease caused 16% of all the deaths. Its maximum month coincides with the maximum month of pneumonia. While the signs represent phthisis, pneumonia and bronchitis as above the average during January, February, March and April, the figures show the percentage of deaths from those diseases respectively during these three months to have been as follows: bronchitis 45%, pneumonia 46%, phthisis 35%. If we take July, August, September and October, it will be seen that bronchitis has fallen to 18%, pneumonia to 17%, while the phthisis deaths are 30% of the total.

Typhoid Fever. — In August, September, October and November, 819 cases, 72% of the total, occurred.

Diphtheria. — Though prevailing at all times there is between its maximum and minimum months a difference of more than 100%. It rises abruptly from September to October, and falls abruptly from January to February. From February to September it seems to oscillate irregularly.

Scarlet Fever. — The proportion of the minimum to the maximum months is as 1 to 3.6. The rise from the minimum to the maximum month is more regular and shorter than the decline, the former comprising four monthly waves, the latter eight. The fourth and first quarters contain 65% of all the cases.

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NOMENCLATURE OF PEDICULOSIS.[1]

BY CHARLES W. ALLEN, M.D., NEW YORK,
Surgeon to the Charity Hospital, etc.

Most of the text-books, in this country at least, divide the subject of pediculosis into the three general varieties: *pediculosis capitis, pediculosis corporis* and *pediculosis pubis.*

Against the designation of the first variety I have no objections to offer. The pediculus which inhabits the hairy-scalp confines his entire attention to this region and it is only by accident that he is found upon any other portion of the surface. The pediculus which habitually goes by the name of the body-louse or pediculus corporis does not however live upon the body as the head-louse lives upon the scalp. His habitat is in the clothing; and it is only for purposes of feeding, and possibly of exercise and recreation, that he makes excursions upon the skin's surface. If you strip a subject affected with this variety, only a laggard who has been caught unawares can be found upon the skin, and he will make all haste to rejoin those remaining upon the clothing. Instead of laying their eggs upon the hair-shafts as do both the other varieties, these lice deposit their ova along the seams of the garments. For these reasons, it seems to me, this variety should be called only by its other name, pediculus vestimenti, and the term pediculus corporis be given up exclusively to designate what is now universally known as the pediculus pubis or crab-louse. From the extensive migrations of this last mentioned pest, wandering, as it does, wherever hairs abound, and not even sparing the scalp in rare instances, as in a case of an infant of five months reported by Trouessart,[2] it has come to be variously called according to the situation in which its presence is most prominently made known; *pediculus inguinalis, pediculus axillarum, pediculus palpebrarum, pediculus ciliorum and pediculus barbæ.*

Now, all this leads to confusion, and explanations have to be entered into whenever we speak or write of the *phtheirius inguinalis* as occurring in locations other than the genital regions, and if pediculosis ciliorum or axillarum is mentioned, one must explain, to students at least, that the particular louse in question is the so-called pediculus pubis.

There is another reason why the latter should be distinguished as the body-louse and that is its decidedly great prevalence in many quarters over the pediculus vestimenti. In my office I see frequent instances of the former in both sexes, and rarely if ever one of the latter. In the report of the Good Samaritan Dispensary for 1891 we find, that, in the two principal classes, 232 phtheiriasis cases were treated. Of these 185 were of the head, 36 were due to the pediculus pubis, and only 11 to the pediculus vestimenti. Beside this, in the eye class, where of necessity only the one kind would be found, there were no less than 85 instances of phtheiriasis ciliorum out of a total of 5,974 eye cases treated. The same proportion is found to obtain in former years; thus in 1889, out of 202 instances of pediculosis, 135 were put down to the credit of the head louse, 56 to that of the pediculus pubis affecting various regions, and again only 11 to the pediculus vestimenti. Here, too the proportion is increased by 68 cases of pediculosis of the lids in the eye department.

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[1] Read at the New York Dermatological Society, February 23, 1892.
[2] Le Bulletin Médical, January 6, 1892.

At the Charity Hospital we naturally have more phtheiriasis in the skin wards, due to the irritation of the pediculus vestimenti, than to that of the crab-louse; but this is simply because the latter does not, as a rule, cause that amount of scratching and consequent alteration in the skin which would call for hospital treatment. The prevalence of the crab-louse among the patients at large is, however, very great; and as it is so often found in the armpits, upon the chest, down upon the thighs and legs, in the beard, and upon the margins of the eyelids, it is only due to its enterprise to give it the more dignified and comprehensive name, *pediculus corporis*.

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Clinical Department.

PANCREATIC CYST APPARENTLY CURED BY INCISION AND DRAINAGE; RECURRENCE, PERFORATION OF THE STOMACH, DEATH, AUTOPSY.[1]

BY MAURICE H. RICHARDSON, M.D.

The case of D. C. L. was reported in the *Boston Medical and Surgical Journal* for January 29, 1891. He had been admitted to the Massachusetts General Hospital on October 10, 1890. A diagnosis of pancreatic cyst was made and operation advised. On October 24, 1890, the cyst was exposed and drained. The tumor, everywhere adherent, was found and drained without any difficulty. He made a good recovery and was discharged from the hospital, wearing a drainage-tube, on the 26th day of November, 1890.

February 3, 1891. Mr. L. reported to me that he felt very well indeed, that he had grown stronger and fleshier. He had, from time to time, attacks of dizziness in the head. He still wore the tube. There was no change in the character of the clear white fluid discharged from the sinus, and its amount was considerable.

May 26, 1891, he said: "There seems to be less discharge. There is something about four inches deep which hinders the tube going in. It is just before it strikes the water." General health and appearance very good.

July 9, 1891. "The discharge has ceased almost entirely, but it is sore in the region of the tube, and there has been, for a week, some matter." I removed the tube and the sinus became closed in a few weeks. During the fall the patient called occasionally and I had the opportunity often to examine the abdomen. Nothing abnormal could be detected by physical examination, and I looked upon the case as one of perfect and permanent cure.

On Saturday evening, January 23, 1892, I was asked by Dr. Cowdrey, of Stoneham, to go out early the following morning prepared to operate upon Mr. L., because it was thought that he was suffering from acute obstruction of the bowels. I found him in great pain, vomiting constantly large quantities of greenish-black fluid. The abdomen was distended and everywhere tympanitic.

History. — Dr. Cowdrey gave the following history: Some two weeks ago, Mr. L. was taken with a cold, to which he was subject. With the cold he had quite a severe attack of diarrhœa. The cough which accompanied the cold, and seemed like asthma, left him. Then, a week ago Friday, he said that he had been sick all day, and that he could feel a lump in his stomach. That night he was quite restless. Two weeks before that time — that is, between three and four weeks ago — he said that he never felt better in his life, that the old trouble had entirely disappeared. There was nothing in the stomach which he complained of. During the last three or four weeks his appetite has been poor, although otherwise he has been about the same as before. On Saturday he stayed at home all day, and there was no vomiting and no pain. On the Monday previous to my visit he felt no better. He referred his trouble to his stomach. On Monday night he took a pill, which produced free operation some time towards morning. There was no fever. On Tuesday he said that his stomach did not feel right, although he had no pain. He could not get rid of that lump in his stomach. He was nervous and restless and has a feeling of distress. On Tuesday night he was taken with the same distress, and we sent him to bed and put on hot flannels. At this time he began to vomit, which was the first attack of vomiting that he had. I found him, on Wednesday, vomiting what seemed to be bilious matter. Temperature was normal, pulse was about 80. I gave him morphia subcutaneously, on account of the distress. I found the epigastrium full, but there was no fulness in the abdomen. There was this prominence below the ensiform cartilage. There was some nausea and some pain all over him. Tongue was furred. Since my visit nothing has passed him, except some gas this (Sunday) morning. He is terribly thirsty, but he vomits whatever water he drinks immediately.

Physical Examination. — General appearance fair. Tongue coated slightly. There is incessant vomiting of very dark, greenish fluid, almost black, and odorless. Over the scar of the original operation there is a slight hernia. The abdomen is everywhere tympanitic. Deep pressure reveals a tumor which fills the epigastrium and extends from the region of the liver to that of the spleen. In front of the tumor it is everywhere tympanitic. There is no tenderness.

I could not satisfy myself that there was any fluctuation. His condition was not good. Pulse was 120, and of poor quality; face flushed, and expression anxious. He said he preferred to die rather than to be obliged to wear a tube all his life. It seemed to me that, on the chances, the tumor had refilled, and that the obstruction which apparently existed was due to the pressure of the mass upon the duodenum, or the upper intestine somewhere. I advised immediate interference with the hope of finding something which could be relieved by a very short operation.

Assisted by Dr. J. H. Swasey, of New York, I opened the abdomen through the scar of the former operation. On separating the adhesions, I found the anterior wall of the stomach presenting, pushed well forward by a tumor behind. I separated the adhesions in the region of the duodenum, where there seemed to be a hard mass about the size of an egg, with one or two nodules like lymph-glands. To the left the tumor was quite well defined. The mass in the region of the duodenum seemed to be malignant, and not to admit of any permanent relief. The patient's condition was very bad, and I abandoned the operation, closing the wound with interrupted sutures in the usual manner. During the operation, which was very brief, not lasting more than fifteen minutes in all, the pulse became very feeble and respiration alarming. It seemed impossible for him to recover under any circumstances. I was much surprised by his rapid recovery from the operation and the ether. On the following day I aspirated the tumor through both walls of the stomach, and withdrew about two quarts of dark fluid in gross appearances precisely like that vomited the days before the operation. He was much relieved by this, and vomiting ceased immediately. He said, "I feel as though five hundred pounds were taken off of me." He suffered no more pain that afternoon and vomited none. His nourishment was increased until he took about four ounces every hour and a half. He continued in this way about seven days, and on the following Saturday began to have movements of the bowels. On Sunday he began to fail, the pulse became intermittent and more rapid, and he refused to take his nourishment. From that time he gradually grew weaker, and died Friday morning, February 5th. He had no pain from the time of the operation until his death.

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[1] Read before the Boston Society for Medical Improvement, February 8, 1892.

Autopsy, by Dr. W. F. Whitney on February 5th, at twelve o'clock, five hours after death. After opening the abdomen I made an examination of the cyst which had become refilled, but which was not as tense as at the time of the exploration on the preceding Sunday. On examining in the region where I felt the hard mass before, my finger accidentally passed into the cyst. This showed the friable nature of the cyst at this part. It was very difficult, and even impossible, at the time of the autopsy to dissect the cyst out from the parts to which it was adherent.

Dr. Whitney's report is as follows: "Lying between the stomach and the transverse colon, covered by the omentum and adherent to the stomach wall, was a cyst almost the size of the stomach, lined with a membrane looking like a mucous one. Dissection revealed a normal head of the pancreas in connection with the duodenum. A small probe could be passed through the pancreatic duct directly into the cyst. At the opening into the cyst was a minute white thickening, suggesting connective tissue. About two inches of normal pancreatic tissue was found lying between the cyst and the spleen. From this also a duct could be traced into the cyst. At the point of attachment of the cyst, near the pylorus, was a perforation into the stomach, the mucous membrane of which was dissected up in various directions. Although not absolutely proved, the appearances were highly suggestive of an ante-mortem perforation. The gall-bladder was dilated and thickened. The other organs were normal."

There was no peritonitis from the second operation. The hard mass and the nodules found at the operation proved to be the head of the pancreas. There was no evident of malignant disease whatever. Clinically this case would seem to show that communication existed between the stomach and the cyst at the time he was vomiting the peculiar fluid described. It was impossible to distinguish the vomitus from the aspirated fluid by color, odor, or other gross appearances. Why this communication, if it did exist, should have caused his uncontrollable vomiting seems to me inexplicable, nor can I understand why the vomiting ceased immediately upon relieving the tension, unless it was caused by pressure upon the stomach or duodenum or an actual mechanical obstruction. Another possibility was suggested by Dr. Whitney, that the tumor caused an irritation of the solar plexus. It is very evident from the appearance of this cyst and from its intimate connections with other organs, from its great size and its thick walls, that drainage would never have been followed by a complete obliteration. It is apparent that the cyst wall could not have been dissected out.

The conclusion, therefore, must be reached that this was essentially an incurable case and that the permanent use of a tube would have been necessary. Nothing was found at the autopsy to account for the sac which occupied the body of the pancreas, and was probably a dilatation of the canal of Wirsung. A prominent feature in the history of the case is the rapidity with which the sinus closed after the removal of the tube. This has suggested to my mind the possibility, or the probability, that, in cases of pancreatic cyst previously reported as cured, the same condition has existed as in this case, and that the apparent cure was not real. The rapid healing of the sinus after the removal of the tube leads us to think that the cyst has been permanently obliterated.

It would be very interesting to follow the cases hitherto reported and to know whether there ever had been any recurrence. In the case reported a few weeks ago in the Journal[2] there was still considerable discharge, and at my last visit, the very day I was called to Stoneham, I recommended the removal of the tube. In the light of my recent experience, I have advised the re-establishment of drainage.

One other point of interest in the surgical management of this case is the question of drainage at the second operation. I should have done this at the time if it had not been necessary to separate extensive adhesions between the colon, stomach and the omentum. It was not possible to do this without spending a good deal of time and without making a careful suture through the abdominal wall. This I should have done at the time had the patient's condition justified it. I thought it much better to abandon the operation and to drain the cyst by aspiration on the following day, if he survived the exploration, which did not seem likely. The drainage of the cyst with the needle, and the immediate subsidence of grave symptoms, seemed to me to show that they were due, probably, to pressure. The fact, however, that the relief of pressure was not followed by recovery seems to me sufficient evidence that the case was essentially an incurable one, and that the conditions then existing could not have been relieved by any operative method whatever.

The New United States Coins. — It may be useful to know that the new coins are made to weigh definite amounts according to the metric system, and may consequently be used in one side of the scales. The half-dollar weighs twelve and one-half grammes, and the dime two and one-half grammes.

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[2] Vol cxxvi, No. 4, p. 86.

FORCIBLE STRAIGHTENING FOR PERMANENT FLEXION OF THE KNEE.

Urethral Stricture, with a Combined Internal and External Urethrotomy in the same case.

REPORTED BY JOEL E. GOLDTHWAIT, M.D.,
Former House-Surgeon at Boston City Hospital.

The following case is of interest, particularly, as it illustrates a new and very satisfactory mode of treatment for deformities of the leg resulting from chronic rheumatism. The patient was treated at the Boston City Hospital, and was under the care of Dr. E. H. Bradford and Dr. Abner Post. I am indebted to these gentlemen for permission to report the case.

P. C., thirty-four years of age, entered the Boston City Hospital March 18, 1890, upon Dr. Bradford's service. He gave the following history: Since boyhood he had been subject to attacks of acute articular rheumatism; at the age of seventeen, after an attack of gonorrhœa, the rheumatism, which had been quiescent for two or three years, became more severe; and from this time on he has had frequent attacks of gonorrhœa, each time followed by an exacerbation of the "rheumatism." Five years ago, after a fresh attack of the urethral trouble, the pain and swelling in the knee became unusually severe. From this he was a year in recovering, and at this time the deformity of the leg, which is present, occurred.

At the time of entrance to the hospital, the left knee was flexed to nearly a right angle, the tibia was subluxated backwards and rotated outwards. There was very little motion possible, and this was very painful. The foot of the same side was fixed in the position of extreme valgus. There were also strictures in both the deep and the anterior urethra.

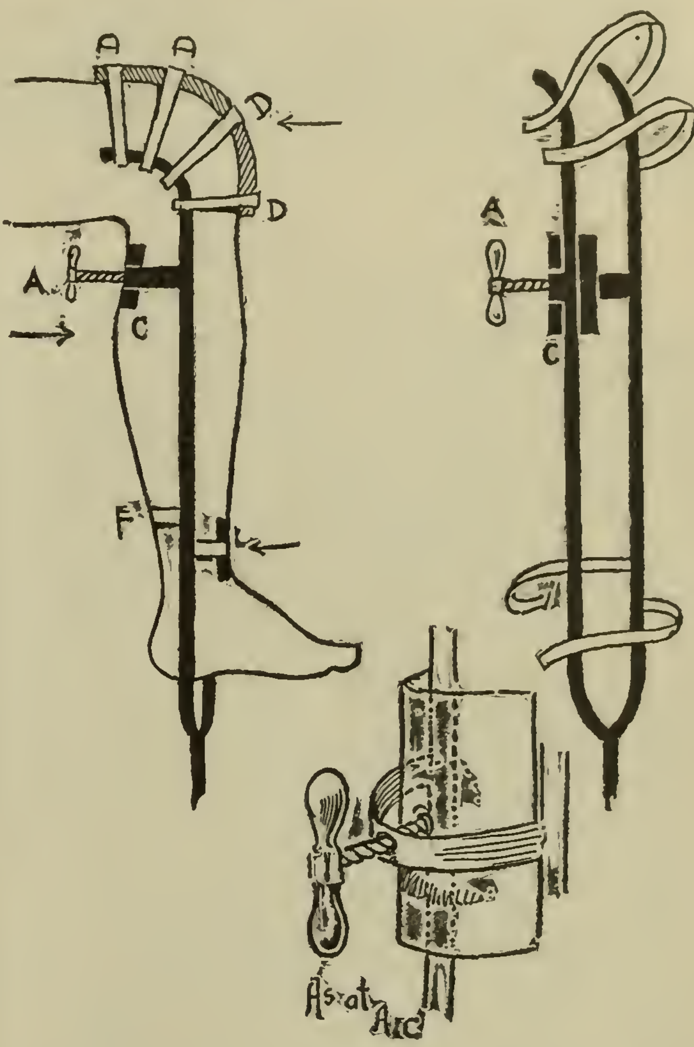
One week later Dr. Bradford operated. (In the interval the patient had been kept in bed, with extension to the leg.) The adhesions in both knee and ankle were broken up, and the leg brought into as good position as was possible by manual force. The subluxation of the tibia, however, could not be corrected. A plaster-of-Paris bandage was applied. Following this, the patient had a great deal of pain in the knee; he was obliged to remain in bed for four weeks, and even then could move about but little with the aid of crutches and the plaster bandage.

On the 23d of May a combined internal and external urethrotomy was done by Dr. Post, who was then on duty. From this the patient made a good recovery; the catheter was removed on the next day and the urine came in drops from the wound for about two weeks. At this time the pain in the knee became much more severe than usual.

Two months later, the pain in the knee still remaining, more radical operative procedure became necessary. He himself demanded amputation if relief from the incessant pain could not be obtained in any other way. On July 29th Dr. Post operated. After the adhesions were broken up, the genuclast devised by Dr. Bradford was applied; and, with the use of a great deal of force, the subluxation was corrected, the leg straightened and done up in plaster-of-Paris. (This apparatus which was not to be had at the time of the first operation is shown in the following illustration.)

Its construction and mechanical principles are apparent. When it is applied and the leg straightened, the straps D press the femur back while the screw-pad C forces the tibia forward.

After this operation, or after the bones were once in place, the pain ceased, only one dose of morphia being necessary, whereas formerly it had been used very freely. In one week the patient was up about the ward; and on the tenth day he was discharged, using crutches and wearing the plaster bandage.



Since then he has done well. When last seen, about six months ago or over a year from the time of operation, he was at work, wearing a Thomas caliper knee-splint, with a strap over the knee to prevent a recurrence of the deformity. Even without this splint he is able to walk very well, and is free from pain.

The case is of interest particularly, aside from the history in which gonorrhœa is so mixed up with the joint condition and urethral trouble, as it shows the possibility, by means of such an apparatus, of offering the patient a useful leg, whereas otherwise amputation would have been the alternative. The cessation of the pain is also noticeable, immediately after breaking up the adhesions and restoring the bones to their proper positions.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

STATISTICS OF ANÆSTHESIA.

Gurll's[1] report is an analysis of the observations of the members of the Deutsche Gesellschaft für Chirurgie made between July 1 and December 31, 1891, and are founded on the data contributed by sixty-six members. The total number of cases where anæsthesia was produced was 24,625.

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[1] Arch. f. Klin. Chir., 1891, Bd. xlii, 2, p. 282.

22,656 Cases Chloroform . . .	71 Cases Asphyxia	6 Deaths
470 Cases Ether	0 " "	0 "
1,055 Cases Chloroform and Ether .	5 " "	0 "
417 Cases A. C. E. Mixture . .	4 " "	0 "
27 Cases Brom-ethyl . . .	0 " "	0 "

These figures show one death from chloroform in each 3,776 cases, and severe asphyxiation once in every 319 cases. It is difficult to form an opinion from them of the comparative fatality of ether, but a good knowledge of the death-rate from chloroform is shown by this investigation.

THE ADMINISTRATION OF ANÆSTHETICS IN ORAL AND NASAL SURGERY.

As anæsthetist, Frederick Hewitt of the Charing Cross and Dental Hospitals, London,[2] has developed the following points:

Ordinarily, it is best to anæsthetize the patient with ether and to continue the anæsthesia with chloroform, care being taken not to make the substitution until the patient begins to show signs of emerging from the ether narcosis. The advantages of the ether are: (1) It is possible to fill the patient with such a quantity that for many operations it is not necessary to add more than to produce profound narcosis. (2) There is no objection to having the patient's head elevated or even to the sitting posture. (3) Should any difficulties dependent upon the presence of morbid growths, etc., in the nose or mouth arise during the administration of ether, there is not that liability to circulatory depression which exists during the use of chloroform under similar circumstances.

When considerable bleeding is anticipated, one of two positions should be chosen, if possible: (1) The etherized patient should be slowly raised into the sitting posture and his head and shoulders thrown well forward; or (2) he should lie on his side with arm under him and, his head being near the edge of the table, his face should be directed downward, the mouth being well opened by some form of gag in either case.

ASEPSIS IN THE BERGMANN KLINIK.

A recent report by Schimmelbusch[3] describes the methods used at Berlin for aseptic work. Among the statements made, the importance given to cleanliness by mechanical means that is, scrubbing, washing, etc., is striking. It is sufficient for the most obstinate hardened spore or coccus. Physical sterilization, that is, by steam, hot air, or boiling water, is preferred to chemical antiseptics. For instruments, boiling for five minutes in a one per cent. soda solution is claimed to prevent rusting and to be perfectly effectual. The soda increases the disinfecting power of the boiling water, and the boiling soda solution is the most powerful disinfecting agent which one can use in practical work. For detail the reader is referred to the original article. Brushes are disinfected by soaking in a one-half per cent. aqueous sublimate solution, unless strongly infected, in which case they are boiled.

THE TREATMENT OF ERYSIPELAS.

From an interesting paper by Charles W. Allen[4] of a personal experience in fifty cases of erysipelas, he suggests the following plan of treatment:

First, internally, such systematic treatment as the nature of the case seems to require. Antipyretics only in case of high or persistent fever (over 103.5° to 104°). Then antipyrine in doses of at least fifteen to twenty grains, for an adult, guarded by alcohol. Cooling drinks. Calomel or saline aperients in full dose if constipation. If much weakness, alcoholic drinks given freely, especially at critical periods, and iron or iron and quinine; digitalis, if much fever and prostration; bromides for delirium; antipyrine or phenacetin for headache, with cold applications to head, and as concentrated and nutritious a diet as possible.

Second, locally, I would paint the patch and surrounding margin of healthy skin thickly with ichthyol in collodion, one drachm to two drachms to one ounce. If the scalp is the region affected, a watery solution or ointment of ichthyol can be employed. To arrest the spread I should in every case make an attempt, either with the band of adhesive plaster, or by scarification, or both, the latter to follow the former, in case the disease spreads beyond the adhesive strips. In erysipelas of the face which had not yet reached the forehead, or at least its upper part, I would apply a band tightly about the forehead and just above the ears, cutting the hair in a strip around if necessary to secure firm pressure. The chances of arresting the process here should be at least equal to those of checking the spread upon an extremity, for we have a hard, bony base over which to make our compression. If the boundary is passed, then I should at once have the scalp shaved and apply another band higher up. The hair should be cut in any case in which the scalp is invaded or threatened. Then the same application of ichthyol in collodion can be made, as to the face or other part. If there be much tension, swelling, heat and discomfort (which is not apt to be the case under collodion) any oily substance can be applied over it.

DIAGNOSTIC VALUE OF PUS COCCI IN THE BLOOD.

A. von Eiselberg claims that the demonstration of the presence of pus microbes in the blood by culture (streptococci pyogenes, staphylococci pyogenes aureus, staphylococci pyogenes albus) indicates also the presence of a suppurative process; and that in doubtful cases he has thus made the diagnosis of septic infection of operation wounds, osteomyelitis, hip-abscess, etc.[5] He does not think that failure to find such pathogenic microörganisms by culture, proves the absence of suppurative processes.

THE PULSE AS AN INDICATION FOR LAPAROTOMY.

G. H. Burrell's article[6] on the value of the pulse-rate as an indication for laparotomy in cases of acute traumatic peritonitis is being quoted in European journals. Burrell stated that in such cases where there was no especial rise of temperature, a pulse-rate of 120 or over per minute, was an indication for an exploratory laparotomy. The value of the pulse-rate as an indication for operation in cases of appendicitis was suggested by J. W. Elliot of this city, several years ago.

MENINGOCELE SPURIA TRAUMATICA.

A case representing this affection at Czerny Klinik has led Bayerthal to investigate this lesion.[7] His patient was a boy, aged seven. The tumor was noticed two days after birth. Delivery instrumental. Site, left parietal region. Tumor soft, size of a bean when first noticed; growth corresponds to growth of body. Pulsation synchronous with heart. Crying, coughing, etc., causes tumor to increase in size. It is surrounded by a bony ring, the edge of the adjacent bone. Strong compression causes symptoms of cerebral compression, that is, loss of consciousness, dilated pupil, deep and prolonged respiration, convulsions, etc. Bayerthal has found twenty-one cases including eight autopsies. It is an affection of infancy, not of adult life. Conditions: (1) A thin skull; (2) adherent dura; (3) deficient calcification. Symptoms: First, of concussion; then appearance of tumor contents, at first blood, later (after a few days) cerebro-spinal fluid. Rate of growth and size of tumor varies much. It may be rapid and continuous, or slow, or after attaining a certain size, remain stationary or diminish or disappear. Prognosis: Bad with rapid growth; seen in cases where there is communication with the ventricle. Slow growth good; growth ceases sooner or later since no such communication. Site: In most cases the parietal bone and generally the right. No change, as a rule, in the superjacent tissues except thinning and rupture of skin in very rapid growths. Contour generally round or elliptical. Pulsation, respiratory disturbance, the surrounding thickened bony edge, fluctuation, possibility of reduction, participation of cerebral tissues, are discussed in detail in the original article. Diagnosis generally easy. To be distinguished from cavernous angioma, bony defects of skull, congenital hernia cerebri, blood cysts of skull connected with the longitudinal sinus, soft sarcoma of the dura which forms a pulsating tumor after perforating the skull. Prognosis: As regards recovery, always unfavorable; as regards life, guarded, uncertain. Treatment, none satisfactory or effective known.

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[2] London Lancet, and Annals of Surgery, vol. xiv, No. 5, November, 1891.

[3] Arch. f. Klin. Chir., 1891, xlii, 1, p. 123.

[4] American Journal of Medical Sciences, July, 1891, p. 51.

[5] Wien. Med. Wochnschr., 1890, iii, 38.

[6] Lancet, 1890, i, p. 850.

[7] Beitr. z. Klin. Chir., 1891, vii, 367.

PNEUMATOCELE SYNCIPITALIS.[8]

This rare affection is again brought to notice by C. v. Helly[9] (Graz), who reports a case and discusses the etiology, condition, frequency and treatment of this disease. He states that it is an air-containing tumor between the skull and periosteum. The source of the aerial contents is from the air-containing cavities of the skull; the contents, atmospheric air. Hence a communication with such an air-cavity through the bone is necessary to the existence of such tumors. These communications are congenital defects or foramina; abnormally thin bone, solution of continuity from trauma, and the effect of inflammatory processes in the cavities above mentioned or of its bony walls. Helly has collected reports of seventeen cases where the tumor was occipital. Those where the frontal sinus is the source, are, on the contrary, seldom seen. He finds record of eight cases and his own makes nine. This was in a patient aged twenty-eight, cause, a kick from a cow. Loss of sight in right eye. Five years after, subsequent to a discharge of sequestra from the nose, the pneumatocele appeared in the left frontal region. Of Helly's nine cases of anterior pneumatocele the youngest was in a patient aged twelve years. He claims that the frontal sinus does not exist before the age of ten. Etiology: Trauma, three; syphilis, one; empyema of the frontal sinus, four. In some cases the air must pass through congenital foramina in the frontal bone or mastoid, or such openings are enlarged by inflammatory processes. Helly found such congenital openings in the anterior wall of the frontal sinus in four among 474 skulls examined. There were frequently foramina for the transmission of vessels. The diagnosis is usually easy. The tumor is tympanitic. The frontal tumors are never so large as the occipital. Treatment: In three cases puncture was without result; compression can be used where pus is absent. The surest method consists of free division of the wall and healing by granulation.

EXTIRPATION OF LARYNX AND PHARYNX.[10]

In October, 1889, K. Poulsen (Copenhagen) performed this operation for carcinoma. The pharynx was also involved in a zone which did not extend below the cricoid cartilage. The growth was throughout the larynx. Preliminary low tracheotomy was done; then a sub-hyoid pharyngotomy, through which the limits of the growth were ascertained by digital exploration. A vertical skin incision was then made from the mid-point of the pharyngotomy wound to half an inch of the tracheotomy incision, then continued downward by two smaller lateral cuts.

The two quadrangular flaps then formed, were dissected back laterally to the sterno-cleido mastoid muscles. The muscles of the larynx were separated with blunt instruments, also the pharynx from the vertebræ. The pharynx was divided one centimetre above the growth, the œsophagus one centimetre below it, the trachea below the cricoid cartilage. No especial bleeding. The skin flaps, including the pre-vertebral connective tissue were united in the median line with silk sutures. The upper and lower edges of the flaps were sutured to the posterior edge of the divided pharynx above, and the œsophagus below; a tube was passed through the nose down into the severed œsophagus. Wound plugged with iodoform gauze. The wounds healed, and a new posterior pharyngeal wall resulted. The tube was removed after a few days, but passed subsequently three times daily for feeding the patient.

Three weeks later the anterior pharyngeal wall was formed by a flap from each side by aid of one vertical and two horizontal cuts. The flaps were turned in and sutured together in the median line — raw surface exposed. Their upper border was sutured to the anterior edge of the pharynx. Their lower to the anterior edge of the œsophagus. The patient could at once swallow liquids. After three or four days a small opening formed from gangrene of a small area next the œsophagus. This, when tamponed, did not interfere with feeding. The patient died from septic pneumonia (seven weeks after the first operation). Autopsy showed a new-formed pharynx, six centimetres long and nine centimetres in circumference; epidermis intact, and beginning to assume the appearance of mucous membrane.

SHOCK ACCOMPANYING EXTIRPATION OF THE LARYNX.

Alpiger[11] (Vienna) reports an interesting and valuable investigation made by him to explain a sudden heart paralysis and death in a healthy man, aged fifty-six, from whom Billroth had extirpated the left half of the larynx for carcinoma. The case apparently was explained by the discovery of an anastomosis between the external branch of the superior laryngeal and the superior cardiac branch of the sympathetic. He assumes that this anastomotic branch may contain cardiac depressant fibres, possibly from its connection with the superior laryngeal nerve. However, the practical point for the surgeon is that the danger exists; and since the nerve is more frequent on the left than the right side, left-sided operations are to be considered more dangerous. For a detailed anatomical description the reader is referred to the original article[12] or a good *résumé*.

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[8] See Surgical Report, Boston Medical Surgical Journal, 1890, vol. cxxii, 247.

[9] Arch. f. Klin. Chir., 1891, xli, 685.

[10] Centbl. f. Chir., 1891, No. 1.

[11] Arch. f. Klin. Chir., 1890, xl, 4, p. 761.

THE RESULTS OF REMOVAL OF THE BREAST.

Terrillon,[13] has arrived at the following conclusions as a result of partial or total removal of the breast in one hundred patients, in the treatment of tumors of various kinds:

The gravity of the operation is insignificant; recurrence seems to be the rule when the axillary glands are involved in the disease; when mammary tumors are malignant, or of a mixed character, the entire gland and involved lymphatic glands should be removed if recurrence takes place. The operation may be repeated once or several times, especially if primary union of the skin can be secured; by this means the condition of the patient is ameliorated, the drain attending ulceration is obviated, and the unfavorable course of the disease seems to be retarded.

TREATMENT OF TRAUMATIC PNEUMOTHORAX.

Witzel[14] successfully relieved a case of this nature, which forms such a dangerous complication in wounds of the thorax by impeding respiration and pressure on heart and large blood-vessels, by placing a catheter in the upper angle of the wound, then suturing the opening till air-tight; then filling the pleural cavity with warm boric acid solution, which gradually displaced the air, which escaped through the catheter. The liquid then was removed by siphoning it out through the catheter. After this procedure respiration became quiet and regular, and percussion and ascultation showed normal conditions.

REMOVAL OF THE APEX OF THE LUNG FOR TUBERCULOSIS.

Dr. Tuffier,[15] in a case of early tuberculous disease of the apex of the right lung, resorted to an operation. A simple incision was made through the second intercostal space anteriorly; the parietal pleura was divided, which induced a kind of sub-pleural pneumothorax; the apex of the lung became reduced in bulk sufficiently to be easily drawn through the wound; it was then cut away by the ecraseur, and the stump sutured to the intercostal incision to prevent retraction of the lung. The case progressed very favorably after the operation.

(*To be continued.*)

THE King of the Belgians has consented to be Patron of the International Congress of Gynecology and Obstetrics, which will meet this year at Brussels.

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[12] Schmidt Jahr. f. gesamt. Med., 1891, No. 3, p. 396.

[13] Bulletin Gén. de Thérap., May 15, 1891; Medical News, July 11, 1891.

[14] Centbl. f. Chir., 1891, No. 28.

[15] Gazette hebd. de Sci. Méd.; Medical News, September, 1891.

New Instruments.

AN IMPROVED APPARATUS FOR ESTIMATING UREA.

BY H. F. ADAMS, M.D., PHŒNIX, ARIZONA.

THE convenient hypobromite process has called out numerous devices to make the quantitative analysis of urine for urea at once handy and rapid.

Those of Marshall,[1] Green, Doremus[2] and Squibb[3] are perhaps the best.

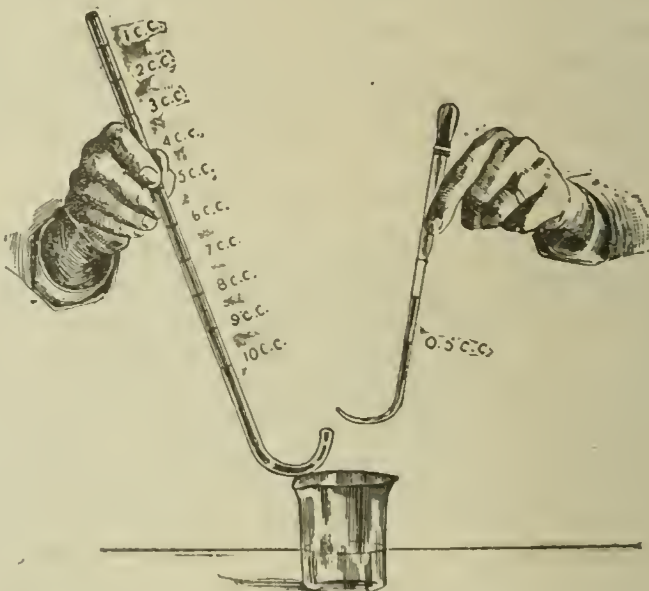
The modification figured below, possesses, I believe, the following advantages:

(1) It is inexpensive. It is easily made from ordinary glass tubing with a common alcohol lamp.

(2) It reduces the cost of analysis, requiring only about one quarter of the amount of caustic soda and bromine needed by others.

(3) It is neater to use and easier to clean. Neater to use, because it can be filled and operated without soiling the fingers, and because of the small amount of caustic solution to overflow; and easier to clean, because the apparatus is of uniform calibre, and rinses easily.

(4) It is of superior accuracy: first, because of the small calibres of the urine-pipette and of the nitrogen-receiver, thus giving very close readings; second, because of the adjustment of the urine-pipette, and of the absence of any waste or error in adding the urine, as often happens with the usual pipettes; third, because of the long column of hypobromite solution, favoring a rapid and complete decomposition of the urea as the urine rises.



The ureometer is made from glass tubing having a little more than a quarter-inch bore. It is fifteen inches long, closed at one end, and curved at the other for about three inches, with a radius of one inch. It holds, filled, about seventeen cubic centimetres, and is graduated from the closed end in cubic centimetres. It is best filled with the sodium hypobromite solution by means of a long pipette, with a *small delivery*, which easily takes the solution from a bottle and prevents any spilling.

The urine is added by a pipette made of very small glass tubing curved to the same radius as the large tube. This curved pipette is long enough to contain something more than one-half cubic centimetre, and is graduated to that amount. It is attached by a short piece of rubber tubing to an ordinary medicine dropper. This attachment allows the analyst to take up a little more than one-half cubic centimetre of urine, and then to adjust exactly to that quantity without touching the bulb.

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[1] Tyson's Pract. Exam. Urine, 7th Edition, p. 156.

[2] The Medical News, May 30, 1885.

[3] Ephemeris, January, 1884.

The pipette thus loaded is introduced into the tube full of hypobromite solution, exactly as a male catheter is passed. The pipette should have a very small delivery, allowing a very slow discharge of the urine. The overflow of the caustic solution is caught in a beaker. The tube may be sunk in a vessel of water to the level of the remaining liquid, in order to correct the pressure, before reading the amount of nitrogen.

The solutions used, and the calculation of the result, are according to the usual standards. Each cubic centimetre of nitrogen is nearly the product of 0.00282 grammes of urea; or, each 1% of urea, in the 0.5 c. c. of urine used, gives 1.77 c. c. of nitrogen. From these figures it is easy to graduate the tube so as to read the percentage of urea without calculation.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, February 8, 1892, the President Dr. Frederick I. Knight in the chair.

Dr. J. C. Warren read a paper on

THE OPERATIVE TREATMENT OF GOITRE.[1]

Dr. Warren: Cretinism is etiologically and pathologically a different disease. Superficially the two diseases resemble one another very much. There is in both a disturbed look about the face, feeble mental condition, imperfect action of the organs of sense, etc. Here the resemblance ceases. In the case of myxœdema the distortion is due to the condition of the tissues. In cretinism the distortion is due to the shape of the bones. The widening of the face, of the eyes, peculiar distortion of the head, are characteristic of cretinism, and due probably to the condition of the skeleton rather than of the soft tissues. The connective-tissue is the one chiefly affected in the myxœdema cases. The condition of mind in the myxœdema cases is not necessarily as bad as one might suppose. They are slow of thought, but they appear to have more or less intellect and do not seem to lose their intelligence. Their movements are slow.

Dr. Richardson: This paper has been very interesting to me. I am sorry to say that I have no experience in the entire removal of thyroid tumors. Case I, was under my observation some weeks in the summer, and I did not operate because I did not think that the tumor was large enough to cause any inconvenience except from its unsightly appearance. I was very sorry afterwards that I did not operate when I learned the nature of it. It always seemed to me a very formidable operation. I dare say it is not so difficult as it seems. The position of the inferior thyroides and their relation with the recurrent nerve makes it very important to avoid that nerve. Dr. Dwight had a large number of observations made to show that relation in the dissecting-room, and I think he found that the nerve generally went behind the artery, although that is not constant. It seems to me to avoid the recurrent nerve you need to keep well away from the trachea and œsophagus, because unless the tumor is very low down indeed the nerve is there between the two. I have had quite gratifying results in the treatment of cystic tumors by drainage, and one case in which it was necessary to insert a tube into the trachea through a very large malignant growth, perhaps one of the most difficult operations. In the cystic variety, Dr. Warren may remember the old man who came a year ago with an enormous thyroid tumor. This I succeeded in curing by drainage. I think, if we can find that it is possible to remove thyroid tumors with safety and without the serious after-effects, that we shall have opened a very great and interesting field in surgery, which thus far has been very little explored in this vicinity.

Dr. Mixter: I was fortunate enough to see a very considerable number of these cases in Billroth's ward in Vienna; and a very large number were operated on, some being what were supposed to be total extirpations, but others partial, and there were also a large number treated by the injection of iodine and other substances, so that I had a very considerable number of cases to watch in all the different stages, and also had the privilege of making sections of all the growths removed, and I have now specimens from all the thyroid tumors I believe that were removed for a considerable number of years in Billroth's clinic. There are a number of points that come up in the paper, and the first is the position of the thyroid tumor in its relation to the trachea and the œsophagus. Generally the compression Dr. Warren says is from the side, but I have seen, in at least two cases that Billroth removed, where the trachea seemed to be encircled by the enlarged thyroid, in other words, where, instead of passing across, the tumor extended directly round the trachea and the œsophagus, completely encircling it, and of course in that position the operation was very much more difficult, the trachea and the œsophagus being completely separated. In those cases I think the recurrent laryngeal nerve was generally exposed and sought for and found before the operation was carried to its completion. The injection of iodine I saw in a good many cases and with very varying results. In some cases the tumor was rapidly diminished, and in other cases, as a rule, a swelling following the injection, and then a diminution in size which carried it down to a considerable point below where it stood at the time of the injection. In other cases, after this inflammatory process had apparently subsided, the tumor would grow much more rapidly, and in these cases it was invariably removed; and in a large number of these cases I believe the growth was found to be sarcomatous. In the ordinary cystic tumor it was very generally quite successful, but I have one tumor that was removed, in which this injection had been made a large number of times and at different points. You can see the cicatrices and shrinking following, and there is one point showing the inflammatory process following the injection.

The paralysis of the recurrent laryngeal has been spoken of, and that is a very important thing to avoid. In some of these cases it was rather startling to find that there was this paralysis, but in all these cases it was temporary. In some of the malignant cases these nerves being pulled upon, I suppose, were temporarily paralyzed; but in all cases the patient recovered inside of a week. It would be noticed immediately after the patient came out of the chloroform, so that in case you find you have the symptom it is not necessary to suppose you have cut the recurrent laryngeal.

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[1] See page 433 of the Journal.

There is the danger of sudden suffocation in these cases, and it is well in all cases to have every possible instrument at hand for catheterizing or intubing the larynx or performing tracheotomy. I have seen a tracheotomy tube put through three or four inches of malignant growth where breathing had suddenly stopped.

These cases that Dr. Warren reports are of practically one type, the cystic type, with larger or smaller cysts, the bronchocele. In Vienna I saw a large number of sarcomas of the thyroid, and several carcinomas. The sarcomas are very rapid in growth, and in all that I saw the recurrence was very rapid, and death took place in each case.

I saw none of these cases of myxœdema at that time. I remember it was denied that it was so, and evidently, in those cases where myxœdema did not follow, it was because the whole gland had not been removed.

Dr. Whitney: An attempt has been made to divide the goitres into different classes, such as the hyperplastic, colloid and cystic form. But in all the process is essentially the same, the variation in the relative amount of these *cystic materials* giving the name; as all can usually be found in the same specimen.

For transplantion a modification of the Mixter punch might be used, in which the end opposite to the punch is sharpened to a needle-point. A piece cut out with the punch from one patient, the instrument turned round and the needle-point introduced at the desired place in the second.

Dr. J. P. Clark: In reviewing the recent literature on the thyroid gland, for a certain publication, I have seen several reports of cases of myxœdema in which the thyroid gland of a sheep has been transplanted either into the abdominal cavity or beneath the breast. The immediate effect on the myxœdema has been excellent, but unfortunately in, I believe, all the cases so far reported, the gland becomes absorbed after a longer or shorter period, and the symptoms return. George R. Murray has reported recently, in the *British Medical Journal*, a case of myxœdema which showed marked improvement from the occasional subcutaneous injection of a perfectly sterile extract of a sheep's thyroid.

Dr. Warren: There is one case Dr. Otis kindly sent to me, of a tumor of the thyroid in a girl sixteen years of age. It had been growing rapidly for a few weeks, presented all the outlines of goitre, and was motionless on deglutition, went down apparently into the mediastinum. Its rapid growth and the somewhat cachectic appearance of the patient caused him to advise against thyroidectomy. It is a case I would like to study a little more before making a diagnosis. It seemed to me like a malignant type of the disease of which we have occasional examples here. I have seen a number that were distinctly malignant.[2]

Dr. A. Coolidge, Jr., reported

THREE CASES OF TUBERCULOSIS OF THE PHARYNX.[3]

Dr. S. W. Langmaid: I remember many of these cases distinctly and the various ways in which they were treated. When the disease is primarily manifested in the skin it is very easy to make the diagnosis, but when it first appears in the nose it is very difficult. It is almost impossible to discriminate between that and syphilis. When it exists in the mouth and palate I do not think it could ever be mistaken for syphilis by one who had had much experience in syphilitic lesions of the mouth. I have never seen but one case in which there was not a manifestation sooner or later on the skin, and I believe that was the only case in which the manifestation did not precede the manifestation in the nose. In that case a very excellent cure was effected which has lasted about two years.

With regard to treatment, I myself have had so little experience that I should hesitate to recommend any particular form of treatment, but I do think that the application of escharotics preceded possibly by curetting will in a certain number of cases yield good results. In the case to which I have referred as being cured, the application of an acid solution of nitrate of mercury seemed to be the most efficacious. I applied it to the nose, mouth, tongue and even to the larynx. It was in no case followed by extensive inflammation or swelling. I was at first very cautious in my applications to the larynx, but I soon became bolder, and it was very interesting to see how ulcerations healed under its application. I think I have a distinct recollection that the application was made in one or more of those cases Dr. Coolidge has reported as unsuccessful.

The fact that the disease has a tendency to spontaneous cure is an interesting one and may be some guide in prognosis. To be sure if the disease exists in the larynx it may result in a stenosis of the larynx, but the progress of the disease is very slow, and generally has cured itself as it were. I do not know enough about lupus on the skin to know whether that is generally the case in lupus of the skin. Dr. White can inform us with regard to that.

It is very singular that up to within a few years so few cases were reported. Very many cases have been reported of scrofulous ulcers of the mouth and pharynx. What those cases are I myself do not know. I have never seen one. All I have ever seen have been tuberculous, syphilitic, lupus or one case of pemphigus. It seems to me likely that the so-called scrofulous ulcers of the mouth and pharynx reported by the French must have been either those of lupus or of tuberculosis.

It has been said that in the large proportion of cases of tuberculosis of the skin if the lesion was sought for in the mucous membrane it would be found there, and I think it is. Braun, of Vienna, who gives an account of such a study being made, and that in a certain per cent., the mucous membrane was found to be the seat of lupus. The reason it is not discovered is because the disease is so painless in its progress and because it causes so little inconvenience. If it goes into the larynx there may be some hoarseness.

It did not seem to me that these cases which Dr. Coolidge has reported were all of the same type. The appearances varied a good deal. While we had the superficial ulceration, with the ulceration in the region of the teeth with here and there raised masses, lupus nodules, still there was a very great variety in the appearances of these three cases which I believe to have been all of the same kind.

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[2] I have since learned that the patient is in a very feeble condition and at times delirious.

[3] See page 437 of the Journal.

Primary tuberculosis of the pharynx is rare. Lupus is probably common. That assists in the diagnosis.

With regard to treatment again, it seems to me that about all means have been exhausted. This one Dr. Coolidge speaks of, the extraction of the teeth, is entirely new so far as my reading goes and my experience, and is worthy of consideration. I do not see why it should cure the disease, but it seems in all of these cases to have been of great benefit and the removal of a portion of the upper jaw seems to have resulted in almost cure, that is, there has been no return of the disease after nine months.

Dr. J. C. White: I have little to say about tuberculosis of the mucous membranes for I have no experience with the appearances or treatment of that affection. I would like to make one or two comments on what has been said. The writer speaks of some of these affections of the mucous membrane in the cavity of the mouth and throat as being lupus and of others as being tuberculosis, as though they were distinct clinical forms, but I think that the course of these cases and the diverse lesions as he described them are only examples of the great multiformity of one process and that they confirm one in the opinion that we must abandon these terms: lupus, tuberculous and scrofulous disease as representing distinct anatomical processes, and that they must be all called forms of tuberculous, or tuberculides, as the French would like to call them.

The writer spoke of certain scrapings having been examined for the presence of bacilli and of the failure to find them; negative evidence of that kind is of little value. Leloir, who has extensively studied the different forms in the skin, expects to make eighty sections on an average to find one containing bacilli, so sparse is the growth of the bacillus in the ordinary forms of clinical lupus. Of course there are other forms of cutaneous tuberculosis in which you find it much more abundant.

I think we should abandon these various terms and speak of all forms as tuberculosis. In the few cases I have seen in the throat-room I should not be able to state why one of them should receive the name lupus and another tuberculosis by any distinguishing appearances I could recognize.

Dr. T. A. DeBlois: I had the privilege of seeing Dr. Coolidge's second case. I suppose I may have had cases of lupus myself, but always called them tuberculosis. If lupus is slow-acting tuberculosis, I have one now which has not progressed for five months. There is a lesion of the tongue and larynx. It is easy to watch the progress of the spot on the tongue. I have used escharotics, lactic acid regularly.

I have had cases of dissecting tubercular disease of the mouth and hard palate, but they were very rapid in their progress, and I have always spoken of them as tubercular ulceration of the mouth. I never had a case in which the nose was involved, except secondarily from propagation through the hard palate.

Dr. Geo. B. Shattuck: My only connection with the case was in treating her with tuberculin, and the results of that were extremely unsatisfactory. She was the least satisfactory patient I had in that treatment. She was unsatisfactory generally and unsatisfactory locally. She reacted locally, as Dr. Coolidge has said, but she did not improve and she did not gain generally as most of the other patients did. She had the usual treatment I gave, namely, from one-half up to fifteen or sixteen milligrames at intervals of two or three times a week. I think she was under treatment five to six weeks and went away because there was no improvement.

Dr. Knight: Dr. Coolidge has referred to a case of mine which I published some years ago, at a time when I attempted with others, to draw a distinction between lupus and tuberculosis, and in thinking over that case and others since the discovery of the bacillus it has seemed to me that the most probable explanation of the different appearances in those cases, as we tried to make it, might be fairly due to the fact that in the cases we classed as lupus the progress of the disease was slow, particularly on account of the non-complication of pulmonary disease, that in those cases which we had been in the habit of pronouncing as decided tubercular, there was the disease of the lung which gave us the confirmation, and that disease of the lung debilitated the patient and necessarily hastened the progress of the disease. In those cases in which it happened to be found only in the throat, the disease was slow as it is in the skin and in that way we got that proliferation of tissue and extensive thickenings which we failed to get in the cases having also tubercular disease of the lungs, which are of short duration.

It always seemed to me that a good many of those cases of so-called scrofulous disease abroad, which are very hastily diagnosticated, were probably cases of congenital syphilis.

Dr. Coolidge: I am glad to hear Dr. White say that on the skin lupus and tuberculosis are merely different forms of the same thing, because it seems to me that in the throat and on the hard palate it is distinctly so. In these cases almost exactly the same appearance has been noticed as in cases which were distinctly lupus, and in cases in which there was nothing which suggested lupus. A similar lesion on the hard palate by extension on the nose and face has produced entirely different lesions, — one typical lupus and one that cannot be called lupus. The same is true in the throat. Entirely different looking lesions in the pharynx have been associated with the same lesion around the teeth.

Dr. M. H. Richardson described a case of

PANCREATIC CYST APPARENTLY CURED BY EXCISION AND DRAINAGE; RECURRENCE, PERFORATION OF THE STOMACH, DEATH, AUTOPSY.[4]

Dr. Whitney: Cysts of the pancreas are almost all regarded as dilatations of the duct. Usually the sacculated form is the most common. Here we have dilatation of the middle part of duct with destruction of tissue, leaving the head and tail of pancreas intact.

As regards the formation of fistula, it has been noted that pancreatic fistulæ are extremely rare. As a rule, when a communication has been established with the cyst, it readily closes. Perforations into the stomach and into the root of the mesentery are also mentioned.

Dr. Richardson: In Senn's article on this subject he reports a few cases, all he was able to collect two or three years ago; and I noticed that the most of them were of short duration, so that they may have recurred. From what experience I have had I believe that no cyst would close up. I do not believe any such cyst as this would ever heal. I do not see how it is possible for it ever to heal from the bottom.

Dr. Stebbins: I have here the ovaries taken from a Jewess, aged twenty-two. She came to the out-patient department complaining of pain in the pelvic region for a year or more. She was found to have a small tumor, about the size of an orange, on the right side. On removal, there was found to be a dermoid about the size of a small orange. The tumor was cut open this morning, showing a good deal of hair and some bits of bone and cartilage embedded in it. There is in the Fallopian tube another small cyst. The left ovary was found to contain a cyst smaller than the other, and on section fluid came out. At the fimbriated end of the Fallopian tube were several small cysts.

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[4] See page 441 of the Journal.

Dr. Coolidge showed a piece of sponge removed from the nasal cavity of a patient, who gave the following history: Two years ago he had been etherized, and a polypus had been removed from his nostril. After the operation he found that the impediment to breathing was worse than it had been before; he therefore decided to change his physician. He has done so several times during the past two years. The sponge had evidently been put in to stop hæmorrhage, and its presence was not suspected by the patient. The purulent discharge had existed for two years, during which time he had lost much flesh and became very anæmic. After the removal of the sponge, the foul odor of the discharge disappeared within a week, and the patient already began to feel very much better. A foul discharge from one nostril only should always suggest a possibility of a foreign body, especially in children.

Dr. Knight: A few years ago a gentleman came to me from Newport, who had had a pretty severe hæmorrhage from the nose. A physician had plugged posteriorly, but had forgotten to put on the string to the tail end of the plug, but pulled an enormous sponge as far as he could into the nose. The patient went about for three weeks from one to another, and no one got it out. I finally succeeded in breaking up the thing and getting it out anteriorly.

Dr. Mixter showed a stone he had crushed, weighing 900 grains. It was very hard. There was difficulty in grasping it even with the largest Bigelow lithotrite. It was three inches in length, and could not be grasped by its long diameter. The symptoms had lasted two years. The patient left the hospital at the end of a week, without a symptom of pain or discomfort.

Recent Literature.

Sleep, Insomnia and Hypnotics. By E. P. Hurd, M.D. Detroit: George S. Davis. 1891.

This little volume is one of the Physician's Leisure Library Series. It contains about one hundred pages, and the title-page indicates the contents, each one of the three subjects of the title being the heading of one of the three chapters into which the book is divided. A concise statement of the physiology of sleep and the causes of insomnia prepares the reader for an intelligent, conservative and sensible consideration of the delicate question of hypnotics and their use. The author does not regard drugs as the most important therapeutic agents; though recognizing their uses, he thinks physicians should be very chary in prescribing the medicinal hypnotics, as many of them by constant or frequent use become positively baneful, and he closes the book with an exhortation to first try fully, when possible, all available hygienic resources before resorting to them.

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PRESENTATION OF PORTRAITS OF DR. OLIVER WENDELL HOLMES AND DR. ALFRED STILLÉ TO THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

A notable occasion in recent medical annals was the presentation of a portrait of Dr. Alfred Stillé, ex-President of the Philadelphia College of Physicians, and one of Dr. Oliver Wendell Holmes, an Associate Fellow, to that body. The former, the gift of the physicians of Philadelphia, was presented through Dr. H. C. Wood, and accepted on behalf of the Fellows by the President; the latter, the personal gift of the President, Dr. S. Weir Mitchell, was accepted by the Vice-President, Dr. J. M. DaCosta. The occasion was a dinner of the College of Physicians of Philadelphia, on the evening of the 30th ult., at which were present, besides the Fellows, a number of Associates and invited guests, including Drs. William H. Welch, of Baltimore, Hermann Knapp, of New York, and Wm. Osler, of Baltimore, and Talcott Williams, Esq., the entire number of those who sat down to dinner being nearly two hundred.

Both paintings were of life-size, in oil, half-length, and both excellent portraits. The portrait of Dr. Holmes represented the poet-physician in the black robe of the Faculty; it is the work of Mrs. Sarah Whitman, and is said to be the finest portrait of the genial autocrat that has ever been painted. There are many personal allusions in Dr. Holmes's poem referring to incidents during his attendance upon the second annual meeting of the American Medical Association, which took place in Philadelphia, and regarding which the President made a few explanatory remarks before reading his own contribution.

We venture to think our readers will condone the substitution of unpublished poems by the Doctor-Poet of Philadelphia and the Poet-Doctor of Boston for the customary editorials.

Verses by Dr. Mitchell on Presenting the Portrait of Dr. Oliver Wendell Holmes.

We call them great who have the magic art
To summon tears and stir the human heart,
With fictive grief to bring the soul annoy,
And leave a dew drop in the rose of joy.
A nobler purpose had the Masters wise
Who from your walls look down with kindly eyes.
Theirs the firm hand and theirs the ready brain
Strong for the battle with disease and pain.
Large were their lives; these scholars, gentle, brave,
Knew all of man from cradle unto grave.
What note of torment had they failed to hear?
All grief's stern gamut knew each pitying ear.
Nor theirs the useless sympathy that stands
Besides the suffering with defenceless hands;
Divinely wise, their pity and the art
To teach the brain the ardor of the heart.
These left a meaner for a nobler George;
These trod the red snows by the Valley Forge,
Saw the wild birth-throes of a Nation's life,
The long-drawn misery and the doubtful strife:
Yea, and on darker fields they left their dead
Where grass-grown streets heard but the bearer's tread,
While the sad death-roll of those fatal days
Left small reward beyond the poor man's praise.
Lo! Shadowy greetings from each canvas come,
Lips seem to move now for a century dumb:
From tongues long hushed the sound of welcome falls,
"Place, place for Holmes upon these honored walls."
The lights are out, the festal flowers fade,
Our guests are gone, the great hall wrapped in shade.
Lone in the midst the silent picture stands,
Ringed with the learning of a score of lands.
From dusty tones in many a tongue I hear
A gentle Babel, — "Welcome, Brother dear.
Yea, though Apollo won thy larger hours,
And stole our fruit, and only left us flowers,
The poet's rank thy title here completes —
Doctor and Poet, — so were Goldsmith, — Keats."
The voices failing murmur to an end
With "Welcome Doctor, Scholar, Poet, Friend."

In elder days of quiet wiser folks,
When the great Hub had not so many spokes,
Two wandering gods, upon the Common, found
A weary school-boy sleeping on the ground.
Swift to his brain their eager message went,
Swift to his heart each ardent claim was sent;
"Be mine," Minerva cried. "This tender hand
Skilled in the art of arts shall understand
With magic touch the demon pain to lay.
From skill to skill and on to clearer day,
Far through the years shall fare that ample brain
To read the riddles of disease and pain."
"Nay, mine the boy," Apollo cried aloud,
"His the glad errand, beautiful and proud,
To wing the arrows of delightful mirth,
To slay with jests the sadder things of earth.
At his gay science melancholy dies,
At his clear laugh each morbid fancy flies.
Rich is the quiver I shall give his bow,
The eagle's pinion some bold shafts shall know;
Swift to its mark the angry Arrow-song,
Shall find the centre of a nation's wrong;
Or in a people's heart one tingling shot
Pleads not in vain against the war-ship's lot.
Yea, I will see that for a gentler flight
The dove's soft feathers send his darts aright
When smiles and pathos, kindly wedded, chant
The plaintive lay of that unmarried aunt;
Or sails his Nautilus the sea of time,
Blown by the breezes of immortal rhyme,
Or with a Godspeed from her poet's brain,
Sweet Clémence trips a-down the Rue de Seine.
The humming-bird shall plume the quivering song,
Blithe, gay and restless, never dull or long,
Where gaily passionate his soul is set
To sing the Katydid's supreme regret,
Or creaking jokes, through never-ending days,
Rolls the quaint story of the Deacon's chaise.
Away with tears; when this glad poet sings,
The angel laughter spreads her broadest wings.
By land and sea where'er St. George's cross
And the starred banner in the breezes toss,
The merry music of his wholesome mirth
Sends rippling smiles around our English earth.

"Not mine," Minerva cried, "to spoil thy joy —
Divide the honors, let us share the boy."

Lines by Dr. Oliver Wendell Holmes on the Presentation of his Portrait.

"How came I here?" The portrait thus might speak,
The crimson mantling in its canvas cheek,
"Here in this concourse of the grave and wise
Who look upon me with inquiring eyes,
As on some homeless wanderer, caught astray?
An *error loci*, Boerhaave would say.
Is this great hive of industry my home?
Where is the Common? Where my gilded dome?
Where the Old South? The frog pond? Most of all,
My sacred temple, Freedom's Faneuil Hall?"

No answer comes; no trick of human art
Can force those fixed, unmoving lips apart.
He whom the picture shadows must explain
This lawless inroad on a strange domain.
Were it *my* votive offering, meant to show
My grateful sense of all the debts I owe
To your fair city, its unlooked-for face
Might find no cavilier to dispute its place.
Yet though the friendly offering is not mine
It bears my benediction to the shrine
Where, if it meets a welcome, longer yet
Will stretch the column which displays my debt.
Friends of my earlier manhood, ever dear,
Whose lives, whose labors all were centred here,
How bright each figure stands before me now
With eyes undimmed and fair unwrinkled brow,
As when, with life before us yet untried,
We walked the "Latin Quarter" side by side
Through halls of death, through palaces of pain
That cast their shadows on the turbid Seine.

When o'er our coffee, at the old "Procope,"
Smiling, we cast each other's horoscope,
Daring the future's dubious path to scan,
Gerhard, your *Gerhard* was the coming man.
Strong-brained, strong-willed, inquiring, patient, wise,
He looked on truth through achromatic eyes:
Sure to succeed, for Nature, like a maid,
Loves best the lovers who are not afraid,
Lends them her hand to lead them where they please,
And trusts them boldly with her master-keys.
Behold, unfading on the rolls of fame
Typhus and *Typhoid* stamped with Gerhard's name.

Look on the stately form at Gerhard's side.
He, too, shall live to be his city's pride.
Tall, manly, quiet, grave, but not austere,
Not slow of wit, a little dull of ear,
Him we predestined to the place he won, —
Norris, the Quaker City's noble son.
Armed with the skill that science renders sure
His look, his touch, were half his patient's cure;
What need his merits I should further tell?
His record stands; your pages know it well.

Still wandering, lonely, mid the funeral urns
To one loved name my saddening thought returns
Less to the many known, but to the few
A precious memory, — *Stewardson*, to you.

Through many a league we two together fared,
The traveller's comforts and discomforts shared,
When hills and valleys parted distant towns,
Long ere the railway smoothed their ups and downs.
In all the trials wearing days could bring
No fretful utterance ever left its sting:
Pity it was that, chased by pallid fears,
He walked in shadow through his morning years.
Talked of his early doom, and then, and then
Lived on, and on, past threescore years and ten.
Too shy, perhaps too timid, for success
He fought life's battle bravely not the less.
Others left prouder memories, none more dear,
For those a sigh, for Stewardson a tear!

Well, years rolled on, we went our several ways
Not unrewarded with our need of praise;
Time took the weight and measure of our brains
Set us our tasks and paid us for our pains.
At length (our side-locks fast were turning gray)
He brought our art that all-important day
When here our Æsculapian Congress met
(Its second gathering, you will not forget).
I with the crowd your far-famed city sought,
Pleased to behold the schools where Rush had taught,
Where Wistar labored and where Horner led
His thirsting flock to Surgery's fountain-head.

What kindly welcome with the rest I shared;
A little pleased — perhaps a little scared,
When *Chapman* hugged me in his huge embrace
With praise that lit a bonfire in my face —
When *Francis*, guest at *Mitchell's* generous board,
My humble name across the table roared,
Coupled with one which figures on the roll
Of England's poets — bless his worthy soul!
Garth — good Sir Samuel, whose poetic spark
Scarce seen by day, still glimmers in the dark.
These flitting phantoms of the past survive,
While grateful Memory keeps her fires alive.
Friends of the days that fear and anguish knew,
My heart records a deeper debt to you.

To this kind refuge hallowed evermore,
Her shattered sufferers fond affection bore.
Full many a father tracked his bleeding son
Fresh from the murderous conflict, lost or won,
Strayed through some quiet ward, and looking round,
In pity's sheltering arms the lost was found.

Enough! Enough! these eyes will overflow
In sweet remembrance of the debt I owe —
A debt 'twould bankrupt gratitude to pay —
But Heaven perhaps will hear me when I pray:
Peace to your borders! Long may Science reign
Supreme, unchallenged o'er her old domain!
While sons as worthy as their sires of old
Her borrowed sceptre still unbroken hold
Till a new RUSH arise who dares to think —
An unborn LEIDY finds the missing link.

MEDICAL NOTES.

Yellow Fever in Brazil. — The yellow fever in Brazil is reported to be further spreading from the Brazilian coast to the interior. The principal victims are said to be Germans, English, Swiss, Austrians and Swedes.

Small-Pox in England. — Cases of small-pox continue to occur with disquieting frequency in various widely separated parts of England. Last week there were two deaths in London, one in Croydon, and one in Halifax. There were, however, forty-eight cases in the infectious hospitals of the metropolis, and it is thought that the death statistics do not give a true idea of the extent of the present prevalence of the disease. Owing to the enforcement of the vaccination laws in the past, a large proportion of the adult population are more or less protected from small-pox.

A Heart as a Drug. — Two Tartars in the neighborhood of Kazan have been sentenced to twelve years' penal servitude for the murder of a little girl of six years of age. They cut out her heart to give it to a sick person to eat, as a human heart had been prescribed by a mullah!

First Aid to the Injured in the French Army. — The French Minister of War has issued an order that henceforth every officer and every man in the French army shall, when on active service, carry on his person material for a first dressing in case of his being wounded.

NEW YORK.

St. Luke's Hospital. — The trustees of St. Luke's Hospital, at a meeting held April 25th, decided upon the general plans of the buildings to be erected on the new site between 113th and 114th Streets, and Amsterdam and Morningside Avenues. They also decided upon the names of five architects or firms of architects who are to be invited to compete in making the designs for the future hospital. They are to receive the sum of $400 each for their plans; but the competition is not to be confined to these five, as any other architect is at liberty to submit plans if he so desire. Those who do so voluntarily, however, will receive no money. The buildings are to be fireproof throughout, with basements of stone, and the upper stories of brick, with stone trimmings. It is at present contemplated to provide accommodations for about 600 persons, including 100 nurses, and about one-tenth of the hospital space will be reserved for private patients. In each ward of the hospital there are to be twenty beds, with 1,500 cubic feet of air for each patient, and every ward will have its own dining-room, "quiet-room," private room for nurses, etc. There will be a large administration building, on the front of which is to be placed a statue of St. Luke in a niche, and beneath this a tablet with an inscription referring to the former site of the hospital and to its founder, the Rev. Dr. Muhlenberg. The chapel is to seat an audience of 300, and to be easily accessible from the various wards, and the nurses' home will be a detached structure, fronting on 114th Street.

The Week's Mortality in New York. — The week ending April 23d there were 901 deaths reported, which is 55 below the average of the corresponding week for the past five years, and represents an annual death-rate of 27.30 per 1,000 of the estimated population. There were three deaths from small-pox and two from influenza. In the week preceding there were nine deaths from the latter disease. On the 26th of April a man suffering from typhus fever escaped from the Reception Hospital at the foot of East 16th Street, and notwithstanding the vigilant efforts of the health authorities he was not found again until three days had elapsed.

The Church Hospital and Dispensary. — A new charitable medical institution, under the auspices of the Protestant Episcopal Church, has just been opened on West 41st Street. It represents the union of several parish dispensaries for the more efficient carrying on of the work in their charge, and is to be known as the Church Hospital and Dispensary. The building occupies two city lots, and provision has been made for a large outdoor and distinct visiting service.

At the Pasteur Institute. — A patient has been admitted to the Pasteur Institute who was recently bitten at Middleton, Mass., by a horse suffering from rabies contracted from the bite of a dog on April 4th, at Danvers. The horse subsequently died of the disease. This is the first case of the kind that Dr. Gibier has had since he opened the Institute.

Death from Appendicitis and its Sequelæ. — In the case of Dr. Charles F. Clark, who recently died in Brooklyn, it was found at the autopsy that there was chronic appendicitis, with acute appendicitis superinduced and multiple metastatic abscesses in the liver, lung and kidney. The caput coli, which is usually held in position on the right side of the abdomen by the peritoneum and connective-tissue, was free, and had swung over to the left side.

Miscellany.

A PHYSICIANS' BUREAU OF SERVICE AND INFORMATION, AT THE WORLD'S FAIR.

A Bureau of Service and Information, for the exclusive use and benefit of visiting physicians and surgeons and their families, with ample room for the successful operation of each department, and additional space for the use of the secretaries and other officers of medical societies and conventions will be established at the Columbian Exposition by Chas. Truax, Greene & Co. of Chicago.

A list of leading hotels and boarding-houses will be kept, with location, description and rates. A miniature post-office will be established, so that mail matter may be addressed to the bureau and also telegrams.

Telegraph, Telephone, Stenographic, District Messenger, Livery, Cab, Express, Baggage and Freight Service arranged for in the building and legitimate rates secured. Parcels and small packages will be received and checks issued for the same. A reading and reception room, with writing facilities and stationery, will be provided, where physicians may meet their friends, attend to correspondence, etc. Theatre, exposition, sleeping car and railway tickets will be secured, and assistance rendered in purchasing goods in all lines of trade. German, French, Spanish and other interpreters will be permanently located in the building.

These privileges will be granted to physicians and surgeons (and their families) only — college and date of graduation required on registration.

THE BACILLUS OF MEASLES.

Canon and Pielicke[1] have succeeded in isolating a bacillus which they consider the specific organism of measles. This bacillus was found in the blood in fourteen cases of measles. Organisms similar to those found in the blood were detected in the sputum and in the nasal and conjunctival secretions. They succeeded in making first cultures of the bacillus in bouillon, but the organism would not grow on the other media usually employed, nor could further cultivations be obtained from the bouillon. This bacillus is essentially different from the organisms previously suspected as being the cause of the disease. Its size is very variable, sometimes they are as long as half the diameter of a red blood-corpuscle, sometimes they are quite small, and have the appearance of diplococci; between these two extremes they show several gradations in size. Occasionally they are of extraordinary length, almost equal to the diameter of a red corpuscle. They are found in very variable numbers, one specimen of blood sometimes showing only a few bacilli, while in others the field was packed close with them. They frequently occur singly, but in the majority of cases they were arranged in larger or smaller clusters. They were found during the whole course of the disease, and in one case even three days after defervescence. As a rule, they were found most abundantly at the time of defervescence. The authors also examined the blood of seven children who had had measles just before, and in some of whom the rash had not entirely faded away, but the results were negative. Bacilli of the same shape as those found in the blood were seen in the expectoration, and in the nasal and conjunctival mucus of patients suffering from measles. The bacilli stain readily, but are not easily cultivated by any methods so far tried by the authors.

"BICHLORIDE OF GOLD CURE" DENOUNCED BY THE HAMPDEN DISTRICT MEDICAL SOCIETY.

At the annual meeting of the Hampden District Medical Society, held in Springfield, Mass., April 20th, the following resolution was almost unanimously adopted:

Whereas, according to common and newspaper report and upon information and belief it is known that a member of this Society and Fellow of the Massachusetts Medical Society in regular standing, has, by associating himself with one of the most notorious impostors of this century in the application and use of a remedy for the cure of inebriety called "bichloride of gold," and whose exact composition it is pretended is known only by, and is the sole property of, a certain individual; and

Whereas, no such stable chemical combination is possible, and the substance actually used with so much secrecy and profit to the proprietor is and has been employed in suitable cases for years by regular physicians, who well know its limitations and dangers; and

Whereas, by associating himself with a regular physician this pretender hopes to gain prestige and the *quasi* indorsement of the regular profession, thus enabling him longer to delude the public; and

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[1] Berliner Klin. Woch., April 18th.

Whereas, the association of a regular physician in such a capacity is calculated to injure the public and is degrading to those who are in fellowship with such physician, and, recognizing that "naught but evil can finally result from trifling with moral physical facts, and that it is better to cure rightly and really than wrongly and delusively," and that by the "humbuggery of secrecy, delusion and hypnotic suggestion," a far less number will, in the end, receive benefit; and

Whereas, it is the opinion of the members of this Society that the use of the drugs, in the manner employed, for the cure of inebriety by the aforesaid impostor, produces a cerebral stimulation with intellectual disorders which are sometimes quite serious, together with other grave nervous troubles, themselves constituting a form of inebriety frequently leading to insanity and suicide, and a lowering of vitality rendering the patient less able to resist and recover from ordinary diseases; and

Whereas, in those cases of inebriety claimed to have been cured by means of this pretended secret method of treatment, it is our opinion that such cures resulted, not because of said treatment, but in spite of it; and there seems little doubt that hypnotic suggestion played an important part in effecting said cures; and it is our opinion that in all of the so-called "cures" the result attained could have been better secured by improving the moral condition of the patient, by the use of tonics or hydro-therapeutics, regulating nervous action, and by attention to the digestive tract, without subjecting the patient to the dangers of another form of inebriety, and without the element of secrecy. It is, therefore,

Resolved, That this Society hereby directs its president to refer this subject to a proper committee, who shall, before the next regular meeting, ascertain if any member of this Society has identified himself with the manufacture, sale, distribution or use of any secret remedy contrary to the code of ethics under which this Society is organized, and, if so, that such member or members be recommended for expulsion from membership in this Society at said next regular meeting.

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THERAPEUTIC NOTES.

Sodio-Salicylate of Theobromine or Diuretin. — The last number of the Journal contained an extract from a paper by Dr. H. A. Hare (*Therapeutic Gazette*, March 15th), giving the writer's experience with these drugs. The statement there made in regard to the price of these articles we are now informed by the agents for Diuretin Knoll is incorrect. According to their statement the price of diuretin is $1.75 and the price of sodio-salicylate of theobromine is the same.

Salophene. — Salophene occurs in small white flakes almost insoluble in water, very soluble in alkaline solutions, in alcohol and ether. It is quite tasteless and inodorous. Alkalies break it up into salicylic acid and acetylamidoparaphenol. The same change takes place in the body when it comes into contact with the pancreatic or intestinal fluid. It passes unchanged through the stomach. According to Siebel, there is no advantage to be gained by giving more than 5 or 6 grammes during the day. The salophene not decomposed is eliminated by the bowel. The acetylamidoparaphenol is partly excreted by the kidneys, and the salicylic acid can be found in the urine fifty hours after the administration of the drug. Siebel comes to the conclusion that salophene is superior to salol, both on account of its want of taste and smell, as well as from its less poisonous properties.

Correspondence.

SECOND MEETING OF THE ASSOCIATION OF MILITARY SURGEONS OF THE NATIONAL GUARD, ST. LOUIS.

Mr. Editor: — I wonder if the readers of the Journal appreciate the interest which medical men are taking in the National Guard of our States. At St. Louis, on April 19th, 20th and 21st, the second meeting of the Association of Military Surgeons of the National Guard of the United States was held. It is only a few years since the term "militia" was used in hardly a complimentary sense; but if one can judge from the meeting, which occurred in St. Louis, of medical men from all portions of the country, the opprobrium of belonging to the militia will soon be abolished.

A more earnest, zealous, patriotic group of men it has not been my fortune to meet. The East was not enough represented. The men came principally from the middle and western sections of the country; the majority were between forty and fifty years of age, all anxious to advance the efficiency of the National Guard. And by the by, there are few of us who recognize that this National Guard is our "Landwehr." We are, as a country, absolutely defenceless against any of the great powers, and to our National Guard we must turn in time of need. This condition is now appreciated by the regular army, and the presence of Colonels Greenleaf and Alden, from Washington, showed the interest of the United States Army, and I feel sure that the representatives of the regular army were greatly pleased with the personnel of the Association.

It was an American convention in the fullest sense of the term, — bright, active, common-sense men gathered from all parts of the country, who had laid aside their work to devote themselves to the interest of the National Guard and to have a good time. This last element was carried out in full by the hospitable citizens of St. Louis, who entertained the Association in a very liberal manner. Receptions, dinners and a civic ball were tendered the Association, and were appreciated.

This diversion did not prevent the Association from doing good work. A number of very interesting papers were read, and a large number of interesting discussions ensued. The spirit of the Association was towards placing the National Guard of the respective States in touch with the regular army. As was aptly said during some after-dinner remarks, "the regular army surgeons were but the elder brothers of the National Guard surgeons," and certainly a fraternal spirit was manifested by the elder brothers, who, in every way in their power, encouraged and directed the well-meant efforts of the Association.

Possibly some of the titles of the papers will be of interest to you. Lieutenant-Colonel Charles R. Greenleaf, U. S. A., read a paper on "The Practical Duties of an Army Surgeon in the Field during Time of War"; "Some Needs of the National Guard," by Major Lawrence C. Carr, Surgeon Ohio National Guard; and "The Primary Dressing of Fractures," by General Scott Helm, Surgeon General National Guard, Arizona, were of great interest. Fifteen or twenty papers in all were read, some of them by title, and they will form a volume of transactions, which will doubtless come to your hand.

One of the most interesting features on April 20th was an exhibition of the field appliances and work of the Medical Department of the United States Army, and Major John Van R. Hoff, Surgeon U. S. A., commanding a detachment of the United States Hospital Corps from Fort Riley, Kan., gave an exhibition illustrating the following subjects:

(1) Inspection of the Hospital Corps Detachment.

(2) Inspection of the Field Hospital. During this inspection, and each day of the convention, an explanation was given of the various field appliances used by the Medical Department, United States Army; of the methods of keeping records; managing field hospital, etc.

(3) Bearer Drill with Field Litter: extemporized litters

(blanket, coat, rifle, etc.); lifting, lowering and carrying patients by one, two, three or four bearers; passing obstacles with ambulance.

(4) First Aid Drill: the application of temporary dressings; utilizing materials ordinarily at hand on the battlefield for splints, etc.

(5) Assembly of Squads: formation and dismissal of detachment.

Subjects: (1) Fracture of right clavicle; (2) dislocation of left shoulder; (3) fracture of right arm, middle third (compound); (4) fracture of left forearm, near elbow; (5) hæmorrhage from right femoral artery; (6) flesh wound of scalp; (7) perforating gun-shot wound, left chest; (8) gaping knife-wound, right abdomen; (9) fracture of left femur, lower third (compound); (10) fracture of right tibia, middle third; (11) sunstroke; (12) resuscitation of apparently drowned.

It is, of course, of interest to us in Massachusetts to remember that the Journal had the honor of suggesting the formation of ambulance corps, in an editorial in the issue of September 25, 1884.

Following the regular army demonstration, a lantern-slide exhibition was made of the work and drill of the Ambulance Corps of the First Brigade, M. V. M. This attracted considerable attention, especially from the regular army officers, who, I fancy, were much pleased with the efficiency of the corps.

The address of the President, General N. Senn, Surgeon-General, of Wisconsin, was filled with interesting suggestions to increase the efficiency of the National Guard. Many of these suggestions were acted upon, and made the sentiment of the Association, and will doubtless be of value to the medical department of the National Guard. Many regrets were felt at the absence of Surgeon-General Bryant, of New York, who has so actively interested himself in the National Guard.

On Wednesday morning a clinic was held at the City Hospital by General Senn. The amphitheatre was crowded with spectators, and an incision of the knee-joint, and an amputation of the leg were performed. The laity who were present were especially impressed by General Senn's ability to talk and operate at the same time, and one of the local newspapers stated, that "he grew as enthusiastic over proving the accuracy of his diagnosis as a good Republican platform-orator does over the benefits of the McKinley bill, and like the latter, he produces something of his own enthusiasm in his audience."

Words of praise were accorded to Colonel E. Chancellor, the Chairman of the Committee of Arrangements, whose duties were so efficiently performed. Much of the success of the meeting was due to his efforts.

The next meeting of the Association will be held in Washington, in May, 1893. B.

METEOROLOGICAL RECORD,

For the week ending April 23, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...17	29.88	43	54	32	43	33	38	W.	W.	15	8	C.	O.	
M..18	29.93	43	48	37	45	63	54	N.	S.E.	8	6	C.	C.	
T..19	30.24	47	55	38	43	57	50	N.	S.	12	4	C.	C.	
W. 20	30.81	52	65	39	39	43	41	N.W.	S.W.	8	12	C.	C.	
T..21	30.29	50	58	42	45	85	65	W.	E.	3	14	C.	R.	.13
F..22	29.88	55	66	43	81	91	86	S.W.	S.	9	6	O.	R.	.38
S..23	29.84	57	62	52	80	54	67	W.	W.	16	10	O.	C.	.15
☞	30.07	50	58	40	54	61	57			10	9			.09

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 23, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York	1,515,301	901	351	15.84	22.33	2.97	1.65	5.83
Chicago	1,099,850	475	209	13.44	7.26	2.10	.63	3.57
Philadelphia	1,046,964	436	158	13.34	15.64	2.53	1.15	6.44
Brooklyn	806,343	386	135	14.56	23.92	3.64	.78	6.50
St. Louis	451,770	158	56	11.34	10.08	1.26	3.78	2.52
Boston	448,477	222	67	14.40	11.25	3.15	9.00	7.65
Baltimore	434,439	—	—	—	—	—	—	—
Cincinnati	296,908	108	41	13.80	4.60	.92	.92	8.28
Cleveland	262,000	100	34	12.00	13.00	3.00	—	7.00
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	100	40	11.00	14.00	1.00	2 00	3.00
Milwaukee	240,000	80	39	16.25	12.50	1.25	3.75	8.75
Washington	230,392	106	36	6.58	10.34	1.88	—	1.88
Nashville	76,168	27	5	11.11	11.11	—	7.40	—
Charleston	65,165	34	12	—	5.88	—	—	—
Portland	36,425	14	2	7.14	14.28	—	—	7.14
Worcester	84,655	34	12	14.70	20.58	—	2.94	2.94
Lowell	77,696	29	12	17.25	27 60	3.45	3.45	3.45
Fall River	74,398	28	10	10.71	28.56	—	7.14	3.57
Cambridge	70,028	34	13	17.64	8.82	5.88	—	2.94
Lynn	55,727	24	4	—	45.76	—	—	—
Lawrence	44,654	27	7	22.20	3.70	3.70	—	—
Springfield	44,179	15	5	6.66	20.00	—	—	—
New Bedford	40,733	18	6	—	22.22	—	—	—
Salem	30,801	13	2	7.69	7.69	—	—	—
Chelsea	27,909	9	2	—	44.44	—	—	—
Haverhill	27,412	5	1	—	20.00	—	—	—
Taunton	25,445	12	4	—	16.66	—	—	—
Gloucester	24,651	7	2	14.28	57.12	—	—	—
Newton	24,379	5	0	—	20.00	—	—	—
Malden	23,031	10	3	10.00	20.00	10.00	—	—
Fitchburg	22,037	13	5	7.69	7.69	7.69	—	—
Waltham	18,707	2	0	—	—	—	—	—
Pittsfield	17,281	4	1	—	75.00	—	—	—
Quincy	16,723	8	2	—	12.50	—	—	—
Northampton	14,990	7	3	—	14.28	—	—	—
Newburyport	13,947	1	0	—	—	—	—	—
Medford	11,079	4	0	—	25.00	—	—	—
Hyde Park	10,193	5	4	20.09	20.00	—	—	20.00
Peabody	10,158	1	1	—	—	—	—	—

Deaths reported 3,462: under five years of age 1,284; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 465, acute lung diseases 598, consumption 424, diphtheria and croup 178, scarlet fever 85, diarrhœal diseases 46, typhoid fever 39, measles 36, cerebro-spinal meningitis 23, whooping-cough 19, erysipelas 19, puerperal fever 9, malarial fever 7, small-pox 4.

From typhoid fever Chicago 13, Philadelphia 8, Lawrence 3, New York, Brooklyn, Boston and Cincinnati 2 each, St. Louis, Cleveland, Pittsburgh, Milwaukee, Washington, Cambridge and Salem 1 each. From measles New York 23, Chicago, Brooklyn and Pittsburgh 3 each, Philadelphia, St. Louis, Milwaukee and Lowell 1 each. From cerebro-spinal meningitis New York, Chicago and Brooklyn 5 each, Worcester 3, Boston, Washington, Lowell, Lawrence and Gloucester 1 each. From whooping-cough New York 7, Chicago 4, Cincinnati 2, Philadelphia, Brooklyn, Boston, Cleveland, Washington and Cambridge 1 each. From erysipelas New York 7, Chicago and St. Louis 3 each, Philadelphia 2, Brooklyn, Cambridge, Springfield and New Bedford 1 each. From malarial fever New York, Philadelphia and Brooklyn 2 each, Nashville 1. From small-pox New York 3, Pittsburgh 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the weel ending April 9th, the death-rate was 23.3. Deaths reported 4,543: whooping-cough 172, measles 163, diphtheria 57, scarlet fever 41, diarrhœa 31, fever 25.

The death-rates ranged from 12.3 in Croydon to 33.5 in Salford; Birmingham 26 0, Bradford 24.5, Hull 22.4, Leeds 24.6, Liecester 21.4, Liverpool 26.9, London 22.2, Manchester 31.0, Newcastle-on-Tyne 23.6, Nottingham 20.3, Portsmouth 16.2 Sheffield 24.0, Wolverhampton 26.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 16, 1892, TO APRIL 29, 1892.

Leave of absence for fourteen days on surgeon's certificate of disability is granted Captain Augustus A. De Soffre, assistant surgeon, U. S. A., with authority to enter Army and Navy General Hospital, Hot Springs, Ark., for treatment.

Major John H. Janeway, surgeon, U. S. A., is relieved from the further operation of so much of special orders, as directs him, in addition to his other duties, to perform the duties of post surgeon at Frankford Arsenal, Tenn.

Leave of absence for one month to take effect on or about May 1, 1892, is granted FIRST-LIEUT. OGDEN RAFFERTY, assistant surgeon, U. S. A.

By direction of the Secretary of War, Par. 13, S. O. 74, March 29, 1892, A. G. O., removing the suspension of the orders changing the stations of CAPTAIN AARON H. APPEL and FIRST-LIEUT. JULIAN M. CABELL, assistant surgeons, U. S. A., is revoked.

FIRST-LIEUT. GEORGE M. WELLS, assistant surgeon, U. S. A., is relieved from duty at San Carlos, Ariz., and ordered to report in person to the commanding officer, Fort Grant, Ariz., for duty at that station.

Leave of absence for one month to take effect on the final adjournment of the board of officers convened by Par. 1, S. O. 32, c. s. Hdqrs. Dept. Mo., is granted CAPTAIN JOHN L. PHILLIPS, assistant surgeon, U. S. A.

CAPTAIN BENJ. MUNDAY, assistant surgeon, U. S. A., is granted an extension of one month to leave of absence granted in S. O. 40, Dept. Dak., March 19, 1892, S. O. 98, A. G. O. April 26, 1892.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 30, 1892.

L. G. HENEBERGER, surgeon, detached from U. S. S. "Iroquois" and granted three months' leave of absence.

J. E. PAGE, assistant surgeon, detached from U. S. S. "Iroquois" and ordered to the receiving-ship "Independence" at Navy Yard, Mare Island, Cal.

J. R. WAGGENER, surgeon, detached from U. S. S. "Kearsarge" and Naval Hospital, New York, and placed on waiting orders.

ASSOCIATION OF AMERICAN PHYSICIANS.

PROGRAMME OF THE SEVENTH ANNUAL MEETING.

The Association of American Physicians will hold its seventh annual meeting in the Army Medical Museum, Washington, D. C., May 24, 25 and 26, 1892.

TUESDAY, MAY 24th.

Morning Session (10 A. M.). — 1. President's Address, Henry M. Lyman, Chicago, Ill. 2. General Business. 3 "The Cold Water Treatment of Typhoid Fever," G. Wilkins, Montreal. 4. "The Treatment of Follicular Tonsillitis," G. M. Garland, Boston. 5 "A Collective Investigation in Regard to the Value of Quinine in Malarial Hæmaturia or Malarial Hæmoglobinuria," H. A. Hare, Philadelphia. 6. "Alcoholism," T. S. Latimer, Baltimore.

Afternoon Session (2 30 P. M.) — 7. "Practical Results of Bacteriological Researches," G. M. Sternberg, U. S. N. 8. "The Treatment of Experimental Tuberculosis by Koch's Tuberculin, Hunter's Modifications, and other products of the Tubercle Bacilli," E. L. Trudeau, Saranac Lake. 9. "Report of a Case of Glanders, with Results of Bacteriological Study," William Pepper, Philadelphia. 10. "The Bacteriological Study of Drinking-Water," V. C. Vaughan, Ann Arbor. 11. "The Morbid Anatomy of Leprosy," Heneage Gibbes, Ann Arbor, Mich.

WEDNESDAY, MAY 25th.

Morning Session (10 A. M.). — 12. Discussion on Dysentery; Etiology and Pathology, *Referee* W. T. Councilman, Baltimore. Symptomatology, Complications and Treatment, *Co-Referee*, A. B. Ball, New York. 13. "Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation," W. W. Johnston, Washington. 14. "A Contribution to the Study of Hepatic Abscess," M. C. Dabney, Virginia. 15. "Pulsating Pleural Effusions," James C. Wilson, Philadelphia.

Afternoon Session (2.30 P. M.). — 16. "A Case Presenting the Symptoms of Landry's Paralysis, with Recovery," F. T. Miles, Baltimore. 17. "A Case Showing Symptoms of Landry's Paralysis; Recovery," A. McPhedran, Toronto, Canada. 18. "The Areas of Anæsthesia in Spinal Cord Lesions as a Guide to Localization," M. A. Starr, New York. 19. "A Study of the Seasonal Relations of Chorea and Rheumatism for a Period of Fifteen Years," Morris J. Lewis, Philadelphia. 20. "The Significance of Intermission in Functional Nervous Diseases," W. H. Thomson, New York.

THURSDAY, MAY 26th.

Morning Session (10 A. M.). — 21. "Misconception and Misnomers Revealed by Modern Gastric Research," Charles C. Stockton, Buffalo. 22. "The Production of Tubercular Breathing in Consolidation and other Conditions of the Lungs," Charles Cary, Buffalo. 23. "The Different Forms of Cardiac Pain," Samuel G. Chew, Baltimore. 24. "The Late Systolic Murmur," J. P. Crozer Griffith, Philadelphia. 25. "Tube Casts and their Diagnostic Value," I. N. Danforth, Chicago. 26. "Studies in Hypnotism," B. F. Westbrook, Brooklyn. 27. "Influenza, and some of its Present Aspects," Morris Longstreth, Philadelphia. 28. Concluding business.

The annual dinner of the Association will be held on the evening of Wednesday, May 25th, at eight o'clock, in the Arlington Hotel.

SUFFOLK DISTRICT MEDICAL SOCIETY.

ELECTION OF OFFICERS.

At the annual meeting, April 30, 1892, the following officers were elected for the ensuing year:

President, Edward N. Whittier; Vice-President, A. L. Mason; Secretary, James J. Minot; Treasurer, Edward M. Buckingham; Member of the Nominating Committee of the Massachusetts Medical Society, W. L. Richardson; Censors, H. L. Burrell, G. M. Garland, F. H. Davenport, H. F. Vickery, F. B. Harrington.

JAMES J. MINOT, M.D., *Secretary.*

SOCIETY NOTICES.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES. — The third annual session of the Association of American Colleges will convene at the building of the Detroit College of Medicine, at 3 o'clock P. M., Wednesday, June 8, 1892. Dr. N. S. Davis, President of the Association, will read a paper upon the following subject: "To what Extent should Clinical Instruction be afforded the Student of Medicine in Regular Course?" Another paper will be read by Prof. V. C. Vaughan, of the University of Michigan, as follows: "To what Extent should Laboratory Instruction be afforded the Student of Medicine in Regular Course?" Discussion on the papers will follow.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT, SECTION FOR OBSTETRICS AND GYNECOLOGY. – There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, May 11, 1892, at 8 o'clock.

Dr. E. W. Cushing will read "On the Methods and Complications of Vaginal Hysterectomy."

Dr. G. H. Washburn, "Tubal Pregnancy: A Case with Rupture, Operation and Recovery."

GEORGE HAVEN, M.D., *Secretary,*
92A Pinckney Street.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. – A regular meeting of the Society will be held on Monday, May 9th, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

"A Peculiar Form of Nystagmus, with Remarks on its Causation and its Relation to Cheyne-Stokes Respiration," a paper prepared by Dr. W. N. Bullard, assisted by Dr. Wentworth.

"A Case of Congenital Cardiac Disease with Atalectasis; Recovery; Subsequent Sudden and Complete Premature Closure of Cranial Sutures, with Resulting Idiocy," a paper by Dr. H. W. Broughton. G. G. SEARS, M.D., *Secretary.*

NORFOLK DISTRICT MEDICAL SOCIETY. – The annual meeting will be held at the Norfolk House, Eliot Square, Roxbury, Tuesday, May 10th, at 12.30 P. M.

The Board of Censors will meet at the same place at 12.45 P. M.

The examination of candidates will take place one week later, on Tuesday, May 17th, at 7 P. M., at the office of the secretary. The written examination will begin at 7 P. M., the oral at 8 P. M.

Dinner at 1.15 P. M.

Annual Address by Robert T. Edes, M.D.

Remarks by members.

JAMES C. D. PIGEON, M.D., *Secretary.*
130 Warren Street, Roxbury.

PRESBYTERIAN HOSPITAL APPOINTMENTS — APRIL 12, 1892.

Visiting Physicians. – Francis P. Kinnicutt, William P. Northrup, Walter B. James.

House Staff. — F. H. McMasters, second medical assistant; David Boraird, Jr., third medical assistant; Ernest Schultz, second surgical assistant; Ed. H. Bershing, third surgical assistant.

ERRATUM IN COLORED PLATE OF DR. KEEN'S RESECTION OF LIVER.

By error, in the colored plate illustrating Dr. W. W. Keen's case of resection of the liver in the JOURNAL of April 30th, the drawing is marked "natural size." It should have been "two-thirds of the natural size."

RECENT DEATH.

ISAAC G. PORTER, M.D., of New London, Conn., died April 30th, aged eighty-six years. He was a graduate of Yale College in the class of 1826, and received the degree of M.D. from the University of Pennsylvania in 1833. During the war he was post surgeon at Fort Trumbull.

Address.

REMARKS ON SPECIALISM.[1]

BY WM. OSLER, M.D., PRESIDENT,
Professor of Medicine in the Johns Hopkins University, Baltimore.

Gentlemen: First, let me express my gratitude for your kindness in conferring upon me the honor of your Presidency — an honor enhanced by the standing and character of the men who have previously occupied this chair. To have selected as your presiding officer one whose work has lain in the wide field of general medicine, is an indication that you duly appreciate the relation of the special subject in which we are now interested, and to which this Society is devoted. The diseases incident to infancy and childhood are so varied, covering every department of internal medicine, as well as of surgery, that the broad distinctions emphasized by the names physician and surgeon suffice to characterize us, and happily we have not as yet been stamped with a distinctive appellation, under which so many of our colleagues in other lines labor. In the extraordinary development of modern medicine limitation in work is inevitable, and although as practitioners and teachers we are all necessarily interested, to some degree, in the diseases of children, there are among us those who find in them their chief occupation, and our Society is but an organized expression of a very natural desire to unite for the purposes of study.

On an occasion of this kind it seems best to me not to discuss any particular subject, but to deal with some problem of general interest, with bearings, however, upon our organization. In comparison with the older countries of Europe specialism may truly be said to be the most distinctive feature in the medical profession of America. And it may not be inappropriate to consider here a few of its advantages and disadvantages.

"That which has been is that which shall be." Medicine may be said to have begun with specialists. The Ebers Papyrus is largely taken up with the consideration of local diseases, and centuries later we find in Greece certain individuals treating special ailments; and Aristophanes satirizes a "rectum specialist" in a way not unlike our comic journals would "poke fun" at an oculist or an aurist. The tail of our emblematic snake has returned into its mouth; at no age has specialism been so rife. To follow its gradual development during the present century would take more time than is at my disposal, and would not be a profitable task. The rapid increase of knowledge has made concentration in work a necessity; specialism is here, and here to stay.

The advantages to the profession which followed this differentiation have nowhere been more striking than in this country, and the earnest workers in ophthalmology, gynecology, dermatology, and other branches have contributed largely to inculcate the idea of *thoroughness*, the necessity for which is apt to be lost sight of in the hurry and bustle incident to the growth of a nation. Better work is done all along the line: a shallow diffuseness has given place to the clearness and definiteness which comes from accurate study in a limited field. The day has gone by for Admirable Crichtons, and although we have a few notable illustrations in our ranks of men who have become distinguished authorities in eye and skin diseases, and upon syphilis without sacrificing their interests in general surgery, such are necessarily rare, and, unfortunately, from the very circumstances of the case likely to become more uncommon. Then how comforting to the general practitioner is the wise counsel of the specialist. We take him a case that has puzzled and annoyed us, the diagnosis of which is uncertain, and we consult in vain the unwritten records of our experience and the printed records of our books. He labels it in a few minutes as a coleopterist would a beetle, and we feel grateful for the accuracy of his information and happy in the possession of the label. And if sometimes (standing like Aaron between life and death) he illumines too brightly the darkness of our ignorance, are we not as often beholden to him for gentle dealing?

It is almost unnecessary to remark that the public, in which we live and move, has not been slow to recognize the advantage of a division of labor in the field of medicine. The desire for expert knowledge is, however, now so general that there is a grave danger lest the family doctor should become, in some places, a relic of the past. It must indeed be a comfort to thousands to feel that in the serious emergencies of life, expert skill, is now so freely available. Perhaps, as specialists, no class in our profession has been more roundly abused for meddlesome work than the gynecologists, and yet what shall not be forgiven to the men, who, as a direct outcome of the very operative details which have received the bitterest criticism, have learned to recognize tubal gestation, and are to-day saving lives which otherwise would inevitably have been lost? I have known Formad to show in one year at the Philadelphia Pathological Society, ten or twelve examples of ruptured tubal pregnancy obtained in medico-legal work (sudden deaths) in that city. The benefits which the public reap from specialism may be gathered from the fact that in a not much longer period of time I have seen seven specimens of tubal gestation, not removed by the pathologist, but by the gynecologist, with the saving of five lives. The conservatism, which branded ovariotomists as butchers and belly-rippers, is not yet dead among us, and I say it frankly, to our shame, that it has not always been professional encouragement which has supported the daring advances on special lines. Humanity owes a great debt of gratitude to the devoted men who have striven during the past half-century for exactness in knowledge and for its practical application in all departments, a debt too great to pay, too great, one sometimes feels, even to acknowledge.

Specialism is not, however, without many disadvantages. A radical error at the outset is the failure to recognize that the results of specialized observation are at best only partial truths, which require to be correlated with facts obtained by wider study. The various organs, the diseases of which are subdivided for treatment, are not isolated, but complex parts of a complex whole, and every day's experience brings home the truth of the saying, "when one member suffers all the members suffer with it." Plato must have discussed this very question with his bright friends in the profession, — Eryximachus, perhaps, — or he never could have put the following words in the mouth of Socrates: "I dare say that you may have heard eminent physicians say to a patient who comes to them with bad eyes, that they cannot cure the eyes by themselves, but that if his eyes are to be cured, his head must be treated; and then again they say that to think of curing the head alone and not the rest of the body also, is the height of folly. And arguing in this way they apply their methods to the whole body, and try to treat and heal the whole and the part together. Did you ever observe that this is what they say?"[2] A sentence which embodies the law and the gospel for specialists.

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[1] Made at the opening of the Fourth Annual Meeting of the Pediatric Society, Boston, May 2, 1892.

A serious danger is the attempt to manufacture rapidly a highly complex structure from ill-seasoned material. The speedy success which often comes from the cultivation of a speciality is a strong incentive to young men to adopt early a particular line of work. How frequently are we consulted by sucklings in our ranks as to the most likely branch in which to succeed, or a student, with the brazen assurance which only ignorance can give, announces that he intends to be a gynecologist or an oculist. No more dangerous members of our profession exist than those born into it, so to speak, as specialists. Without any broad foundation in physiology or pathology, and ignorant of the great processes of disease no amount of technical skill can hide from the keen eyes of colleagues defects which too often require the arts of the charlatan to screen from the public.

In the cultivation of a specialty as an *art* there is a tendency to develop a narrow and pedantic spirit; and the man who, year in and year out, examines eyes, palpates ovaries, or tunnels urethræ, without regard to the wider influences upon which his art rests, is apt, insensibly perhaps, but none the less surely, to acquire the attitude of mind of the old Scotch shoemaker, who, in response to the Dominie's suggestions about the weightier matters of life, asked, "D'ye ken leather?" There is not a single department, the study of which does not carry with it the correction of this most lamentable tendency. Problems in physiology and pathology touch at every point the commonest affections, and exercised in these, if only in the early years of professional life, the man is chastened, so to speak, and can never, even in the daily round of the most exacting practice, degenerate into a money-making machine. And let the younger of my hearers lay this to heart: scan the lives of say twenty of the men most prominent in special lines of medicine and surgery to-day in this country, and you will find, with scarcely an exception, the early years devoted to anatomical, physiological, or pathological studies. They rose high because the foundations were deep. The most distinguished oculists have been men trained in physiology and pathology; and some, like Sir Wm. Bowman, have had reputations so pre-eminent in several departments that the identity of the physiologist has been lost in the ophthalmologist.

In the larger cities the work of the specialist encroaches more and more upon that of the general practitioner, and this condition, though in many ways to be regretted, is not likely to be changed. I have known the head of a household pay, in the course of a year, for the professional services of six physicians — a gynecologist, an occulist, a laryngologist, a dermatologist and a surgeon. What remained after this partition of the general practitioner came in sixth and looked after the health of the children. It is interesting to note that to this one pertains the functions to a large extent of the old family doctor, and further advice is usually sought through him or at his suggestion. In the evolution of the specialist, the children's doctor is the last to appear, not because of any extreme differentiation, but rather he is a vestigial remnant of what was formerly in cities the general practitioner. May I not say that there are members of our Society whose interest in their work is largely due to this new feature in domestic life? In the division of the household among our brethren, the children alone remain, and fortunately their ailments are too diversified to allow much specialization.

After all, though specialism is rife, and has so carved the "body of physic" that Hippocrates would scarcely recognize it, and though its sounds go out loudly and echo through the journals and society reports, nevertheless, I would boldly make claim for a wider diffusion of its benefits. Of dwellers in cities arrogance is a peculiar trait, and we discuss problems in a "surely-we-are-the-people" style, forgetting that outside lie the greater millions equally precious to Æsculapius, and under the care of men who cannot specialize, who must be able to set fractures, perform version, treat iritis as well as fever, earache as well as the itch. What of the benefits of specialism to this larger class from whose ranks the cities are replenished and whose health is so essential to the nation? The out-door department of our hospitals and the consulting-rooms of city physicians tell of the necessity of special knowledge to these people, particularly in emergencies and in the graver and more unusual forms of disease; but those who thus avail themselves form but a fraction of the numbers who require technical skill for the purposes of diagnosis or treatment. Very little additional knowledge enables the general practitioner to grapple with a large proportion of the cases which in cities come under the care of the specialist. The question resolves itself into one of education. It is impossible in three sessions to bring men beyond the superficial routine, but in a more prolonged course — as I know from experience — the student can be taught practically, in the wards and dispensaries enough of the technique of the specialist to give, at least, a foundation upon which to work. He should leave the schools knowing the practical application of the microscope, the ophthalmoscope and the laryngoscope, and in these and other lines he should have proceeded to the stage in which he recognizes the limitations of his knowledge. Such a man, in general practice, should know a "choked-disk"; the examination for tube-casts should be a familiar, every-day task; and he should be able to tell whether a vocal chord was paralyzed. A serious obstacle to this happy consummation — which can be reached in a well-ordered system of education — is the absence, in the early years of practice, of material upon which to freshen the memory and to "keep the hand in'; but the man who, as a student, has reached a certain point always retains some measure of the old facility. The post-graduate schools have done much to enable men to revive, and to acquire, technical skill, and have been of great service in generalizing special knowledge. In the practice of a good, all-round man, the number of cases demanding the help of a specialist is, after all, not great. The ordinary run of nervous disorders should be recognized, adenoid vegetations he would treat with the skill of a laryngologist; he would know enough not to tinker with a case of glaucoma; and though he might not diagnose a pus-tube from tubal gestation, he would (in this as in other details) have learned to know his limits and be ready to seek further advice.

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[2] Charmides: Jowett's translation.

With the revival and extension of education the benefits of specialism will become more widespread, and to this end the efforts of colleges and hospitals should be directed.

The organization of societies for the study of particular diseases has been of late a very notable feature in the professional life of this country. Since the foundation of the Ophthalmological Society, more than a dozen associations have been formed, and their union in a triennial congress has proved a remarkable success. These societies stimulate work, promote good-fellowship, and aid materially in maintaining the standard of professional scholarship. They are nearly all exclusive bodies, limited in membership, and demanding for admission evidence of special fitness. This point is sometimes urged against them; but the members exercise no arbitary privilege in asking of candidates familiarity with the subject, and evidence of ability to contribute to the general store of knowledge. In some of the specialties these societies have been particularly useful in disciplining men who have traduced, not the code, but the unwritten traditions of our craft, acting as of they were vendors of wares to be hawked in the market-place.

Our own Society may be regarded as the outcome of a notable revival, during the past few years, of interest in the study of the diseases of children. The existence of a special journal devoted to pediatrics, and the successful issue of a large cyclopedia of the diseases of children testify to the appreciation on the part of the profession of the necessity for the more accurate study of this branch. This body offers to men who are working and teaching in pediatrics are opportunity of knowing each other, of discussing subjects of common interest, and through the medium of their publications making general the more special details of value in practice. The programme before you indicates clearly that we are all workers in general medicine; and may the character of the papers and the discussions be the best justification of the existence of an organization devoted to the study of a particular section in that field.

Original Articles.

RENAL ALBUMINURIA NOT DUE TO ORGANIC DISEASE OF THE KIDNEYS.[1]

BY EDWARD S. WOOD, M.D.,
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It has been my experience during the last twenty years to examine the urine in numerous cases of transient albuminuria of renal origin, as shown by the presence in the sediment of renal casts. In most of these it has naturally been impossible to follow out the cases to the complete disappearance of the albumin and casts, since most patients do not have an examination of the urine made after they feel that recovery has taken place. In very many of them, however, I have been able to make repeated examinations, and have known the albumin and casts to disappear, even in some cases which had been pronounced to be those of chronic Bright's disease.

Transient albuminuria is exceedingly common, and frequently occurs in persons who are apparently in perfect health, so that it often happens that it is only detected when an application is made for a policy in some life insurance company. In many cases the diagnosis of Bright's disease is made intentionally or accidentally; and it is to the recovery of such cases after taking some of the so-called "kidney cures," that these nostrums have obtained their popularity.

I do not propose to consider all of the causes of albuminuria included in the above title, since most of them are so universally recognized, and have been so well treated of in other places, that they are always borne in mind, and there is no danger of their being overlooked in cases in which traces of albumin are found in the urine. I refer, for instance, to the familiar classes of cases, in which transient albuminuria accompanies ordinary acute febrile diseases with high temperature (one exceptional class of cases will be mentioned), or cases of permanent albuminuria due to organic diseases which produce obstruction to the venous circulation, such as organic heart and liver diseases, or abdominal tumors which exert pressure on the abdominal vessels. Nor, as the title of my paper implies, shall I refer to renal albuminuria due to organic disease of the kidneys, nor to non-renal albuminuria, such as is due to hæmorrhage or suppuration caused by diseases of the urinary mucous membranes below the kidneys, or of the genito-urinary membranes.

The cases which I do wish to consider are those due to causes which, although generally recognized, are not so apt to be borne in mind, and those in which, when the quantity of albumin reaches a decided trace, an erroneous diagnosis is liable to be made.

I think we may consider that, clinically, all cases of renal albuminuria, not due to organic disease of the kidneys, may be arranged in one of the three following classes:

I. Those due to some general disease or disturbance (not renal) which causes some change in the renal circulation.

II. Those due to irritation of the kidneys, which irritation may be general, as in the case of the chemical (or dissolved) irritants, or circumscribed, as in the case of some mechanical irritants, such as concretions in the substance of the kidneys.

III. Those due to some change in the composition of the blood.

The duration of the albuminuria naturally varies with the cause. It may be permanent, as when due to organic disease of some other organ, in which case the kidneys themselves may, after a long time, become affected with some form of organic disease, or it may be temporary, lasting for a longer or shorter time according to the cause.

I. In the first class, due to some interference with the renal circulation, we may include:

(1) The febrile albuminuria which is invariably seen in acute diseases attended with high temperature. In these cases the quantity of albumin is usually only the very slightest trace, which with the accompanying casts, entirely disappears as soon as, or very shortly after, convalescence begins. In rare cases in ordinary acute diseases the quantity of albumin may become quite large and the renal casts very numerous, so that from a single examination, it may be impossible to say whether acute nephritis has been superadded to

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[1] Read at the Boston Society for Medical Observation, February 1, 1892.

the other febrile affection or not, as the following case will illustrate:

Case I. A young adult male, suffering with typhoid fever.

December 29th. Urine had a specific gravity 1017. Quantity of albumin, large trace (nearly one-fourth per cent.). Sediment: free blood and renal epithelium; numerous hyaline, granular, blood and epithelial casts; an occasional fibrinous cast; and an occasional cast with a few oil-globules adherent.

December 30th. Quantity of urine, fifty-six fluid ounces, specific gravity, 1014. Albumin, slight trace. Character of the sediment the same as yesterday, except the number of casts decidedly smaller.

January 8th. Specific gravity, 1008. Albumin, very slight trace. Sediment: little free blood and renal epithelium; few hyaline and granular casts, some with blood and renal cells adherent; many of the casts of large diameter.

January 18th. Specific gravity, 1019. Albumin, slightest possible trace. Sediment, less in quantity but of the same character as on the 8th.

January 29th. Specific gravity, 1014. Albumin, slightest possible trace. Sediment: very few hyaline and finely granular casts; few blood-globules; slight excess of renal cells.

March 5th. Specific gravity 1025. Albumin, absent. Sediment, amorphous urates and uric acid.

In this case the diagnosis of Bright's disease was actually made by one or more medical friends of the patient in another city, to whom my first analysis was shown.

I have met with a few of these exceptional cases of severe albuminuria occurring during the progress of ordinary febrile diseases, and it is interesting to note the rapidity with which the albumin diminishes to the very slightest trace. The quantity of albumin remains a large trace (from one-eighth to one-fourth per cent.) only for a day or two, then diminishes very rapidly to a very slight trace, but does not disappear entirely usually for several weeks, until the renal epithelium has been restored.

(2) Disturbances of the renal circulation due to nervous diseases, such as delirium tremens, acute mania, and the like. Albuminuria is so common in these cases that no illustrations are necessary.

(3) Passive hyperæmia of the kidneys, due to certain organic diseases of the heart and liver, to the pressure of abdominal tumors, etc.

(4) Almost any serious disease, wherever located, tends to produce secondary effects upon the kidneys, which result in albuminuria and the presence of casts in the sediment. These effects may be due to a simple disturbance of the circulation from pressure, as in the case of some tumors, or through the action of the nervous system, or they may be due to the diminished or modified metabolism resulting in an increased formation of calcic oxalate or uric acid, which will locally irritate the kidneys when separated from the urine within the renal tubules. In all of these cases of renal albuminuria secondary to serious disease elsewhere, the quantitative analysis of the urine will show the diminution of the metabolism, which, other things being equal, will be in proportion to the gravity of the principal affection. In these cases the urine as a whole (the mixed twenty-four-hour urine) does not resemble that of any of the organic diseases of the kidney, although it is in some cases very difficult and sometimes impossible to diagnosticate them from an organic renal disease, if we only have a single specimen to examine.

(5) Albuminuria of adolescence. In this class is also usually arranged the albuminuria of adolescence, on the theory that there is at about the age of puberty, or a little earlier, a slight physiological hypertrophy of the heart. In my opinion, however, in many cases another element must be considered, namely, that of local renal irritation by a very concentrated condition of the urine, or by the separation of crystalline substances (particularly uric acid and calcic oxalate) from the urine within the renal tubules.

The following cases would usually be classed among cases of albuminuria of adolescence:

Case II. Female child, aged thirteen.

March 21st. Specific gravity 1023. Albumin, very slight trace. Sediment: an occasional hyaline, granular and epithelial cast; excess of renal cells; an occasional blood-globule, free and adherent to casts.

April 4th. Specific gravity 1027. Albumin, very slight trace. Sediment: excess of renal cells; few blood-globules; an occasional small hyaline cast mostly with renal cells and blood-globules adherent; uric acid and calcic oxalate crystals.

April 11th. Specific gravity 1015. Albumin, very slight trace. Sediment: few blood-globules; an occasional hyaline cast.

May 1st. Specific gravity 1008. Albumin, slightest possible trace. Sediment: an occasional blood-globule; vaginal epithelium; no casts detected.

May 6th. Specific gravity 1010½. Albumin, slightest possible trace. Sediment: an occasional blood-globule and renal cell; no casts detected.

June 7th. Specific gravity 1018. Albumin, very slight trace. Sediment: little calcic oxalate and an occasional hyaline cast, and blood-globule.

January 29th. Specific gravity 1021. Albumin, absent. Sediment: nothing abnormal.

Case III. Boy, aged thirteen.

February 20, 1885. Specific gravity 1017½. Albumin, very slight trace. Sediment: little blood; excess of renal cells; an occasional granular cast.

February 27th. Specific gravity 1022. Albumin, very slight trace. Sediment: little blood; excess of renal cells; hyaline and finely granular casts, mostly with blood and renal cells adherent.

April 16th. Specific gravity 1013. Albumin, very slight trace. Sediment: hyaline and granular casts, of medium diameter, some with granular renal cells adherent.

April 25th. Specific gravity 1017½. Albumin, slight trace. Sediment: numerous hyaline casts, with renal cells adherent; uric acid. The casts mostly of medium diameter.

July 21st. (Fever turn.) Specific gravity 1025. Albumin trace. Sediment: uric acid; calcic oxalate; few hyaline casts; an occasional epithelial and blood cast. The casts of medium and large diameter.

November 12th. Specific gravity 1025. Albumin, trace. Sediment: calcic oxalate; hyaline casts, mostly large, and some with renal cells adherent; free granular renal epithelium.

August 10, 1886. Specific gravity 1024. Albumin, very slight trace. Sediment: little blood; calcic oxalate; an occasional large hyaline cast with renal cells and blood adherent.

October 8th. Specific gravity 1030. Albumin, absent. Sediment: amorphous urates; little calcic oxalate.

February 2, 1887. Specific gravity 1020. Albumin, very slight trace. Sediment: calcic oxalate; little blood and excess of renal epithelium; an occasional hyaline and finely granular cast with blood and renal cells adherent; an occasional calcic oxalate cast.

July 16th. Specific gravity 1022. Albumin, absent. Sediment, nothing abnormal.

January 7, 1888. Specific gravity 1025½. Albumin, absent. Sediment, uric acid.

July 29, 1890. Specific gravity 1025. Albumin, slightest possible trace. Sediment: calcic oxalate; an exces of renal cells; an occasional blood-globule; an occasional hyaline cast with few blood-globules and renal cells adherent.

August 5th. Specific gravity 1020. Albumin, slightest possible trace. Sediment, same as July 29th.

August 25th. Specific gravity 1020. Albumin, absent. Sediment, nothing abnormal.

February 13, 1891. Specific gravity 1028. Albumin, absent. Sediment, nothing abnormal.

(6) Normal albuminuria, so-called, or the albuminuria which appears in perfectly healthy individuals at certain times, such as after strenuous exertion, as in the case of soldiers after a fatiguing march, is also naturally arranged in this class. In these cases, the albuminuria lasts for an hour or two only, and, so far as I know, is never accompanied with casts in the sediment.

II. Renal irritation.

This class includes, I think, by far the largest number of cases, since it may be produced by so many different causes, and is so frequently seen in persons apparently in perfect health. It is in these cases most frequently that the albuminuria is first discovered by the life insurance examiner, since the patient, as a rule, has no other reason for consulting a physician, or having his urine examined.

Renal irritation may, according to the cause which produces it, be very mild, and last for a very long time before it is detected and its cause removed, or it may be very severe, producing a catarrhal nephritis, which may become a regular acute nephritis.

The most common causes of renal irritation are: (1) a very concentrated condition of the urine. (2) The action of chemical (or dissolved) irritants, which include some of the abnormal constituents of the urine, (*a*) sugar, (*b*) bile, (*c*) the irritating products of scarlatina, diphtheria, and the like, and (*d*) numerous irritating drugs and poisons, such as cantharides, arsenic, salicylic acid, salol, and many others. (3) Mechanical irritants, such as crystals and concretions of uric acid, urates, calcic oxalate, cystin, etc. We often see two or more of these causes acting at the same time. Especially are we apt to have a very concentrated condition of the urine associated with one or more of the other irritants.

(1) Concentrated urine may be caused by errors in diet, both of omission and commission, and if a person *habitually* possess a very concentrated urine, he is apt to have albuminuria accompanied by renal casts in the sediment. I see this form of renal albuminuria in apparently healthy persons more commonly than any other. Very frequently my students consult me about themselves, they having detected albumin while testing their own urine in the laboratory, and I usually find that the students having albuminuria are habitually passing only about 800 or 900 cubic centimetres of urine of a specific gravity of 1028 to 1032. In those cases where I have made an examination of the sediment I have found a few casts, an excess of renal cells, and a few blood-globules both free and on the casts. This condition may be brought about by drinking too little — a habit which is easily acquired — or by over-eating and, at the same time, not taking enough water to properly dissolve the products formed, thereby overworking and irritating the kidneys.

The following cases will illustrate this form of albuminuria:

Case IV. May 7, 1889. Specific gravity 1034. Albumin, slightest possible trace. Sediment: large excess of mucus; an occasional blood-globule; excess of renal cells, some of which are slightly fatty; an occasional hyaline and granular cast, most of which have an occasional renal cell, blood and oil globule adherent.

Case V. Adult male. "Frequent micturition."

December 2d. Specific gravity 1029. Albumin, very slight trace. Sediment: excess of renal cells; few blood-globules; an occasional small hyaline cast with blood-globules and renal cells adherent.

Case VI. Rejected by life insurance examiner.

April 3d. Specific gravity 1030. Albumin, slightest possible trace. Sediment: excess of renal cells; few blood-globules; few casts, mostly of small diameter and with blood and renal cells adherent.

Case VII. Male adult.

May 26, 1888. Specific gravity 1026. Albumin, very slight trace. Sediment: slight excess of renal cells; few blood-globules; an occasional hyaline and granular cast, some with blood and renal cells adherent.

November 8, 1889. Specific gravity 1027. Albumin, slightest possible trace. Sediment: excess of renal cells; an occasional small hyaline cast with renal cells adherent.

May 30, 1891. Specific gravity 1027. No albumin or casts.

As is well known, such a concentrated condition of the urine favors the deposition of crystalline sediments, which, if the separation occurs within the tubules, adds mechanical irritation to that of the concentrated urine, as the following case shows:

Case VIII. Male adult.

March 12th. Specific gravity 1022. Albumin, slight trace. Sediment: calcic oxalate; acid sodium urate; an occasional finely granular cast; spermatozoa.

March 25th. Specific gravity 1016. Albumin, slight trace. Sediment: an occasional blood-globule, only one cast with blood, and renal cells detected after prolonged search.

June 28th. Specific gravity 1026½. Albumin, slightest possible trace. Sediment: spermatozoa, prostatic shreds; few blood-globules. No casts.

October 5th. Specific gravity 1027. Albumin, slightest possible trace. Sediment: prostatic shreds; an occasional blood-globule; spermatozoa. No casts.

October 25th. Specific gravity 1015. Albumin, absent. Sediment, only a few secondary calcic oxalate crystals.

In all cases in which the renal irritation is chiefly due to concentrated urine, it soon subsides on diluting the urine to the normal quantity and specific gravity, and the albumin and casts gradually disappear.

(2) Chemical irritants.

(*a*) A urine containing a large percentage of sugar probably acts in the same way as a concentrated urine in producing renal irritation. The following case illustrates this:

Case IX. Adult, male.

November 5, 1888. Specific gravity, 1033. Sugar, 6⅔ per cent. Albumin, very slight trace. Sediment: excess of renal cells; an occasional blood-globule; few hyaline casts, some with blood and renal cells adherent.

May 24, 1889. Specific gravity, 1043. Sugar 11.4 per cent. Albumin, very slight trace. Sediment: same as above, and also few uric acid and calcic oxalate crystals.

May 25th. Specific gravity, 1037. Sugar, 7.7 per cent. Albumin and sediment, same as last examination.

June 17th. Specific gravity, 1028. Sugar, trace. Albumin, absent. Sediment, uric acid and spores.

June 20th. Specific gravity, 1023. Sugar, trace. No albumin or abnormal sediment.

October 1st. Specific gravity, 1023½. No sugar, albumin or abnormal sediment.

The following year, owing to neglect in diet, both the sugar and renal irritation reappeared.

(*b*) Jaundiced urine of more than a few days duration always produces more or less irritation of the kidneys. I have never examined a jaundiced urine, even in cases of simple catarrhal duodenitis, which had lasted for more than a few days without being able to detect a slight trace of albumin, and in the sediment, renal cells stained with bile-pigment, a few blood-globules, and casts with renal cells and blood adherent. If the jaundice be prolonged for a long time, it may produce marked pathological changes in the kidneys, as in one case in which the jaundice was due to a malignant growth of the pancreas, which gradually encroached upon the bile-duct. The urine was perfectly free from albumin and casts before the jaundice; these appeared in the urine, however, a few days after the patient became jaundiced, and continued until death, which occurred some weeks later. On examination of the kidneys after death, Dr. W. W. Gannett found a glomerulo-nephritis.

(*c*) The albuminuria of scarlatina, and the like, need only to be mentioned.

(*d*) The following cases illustrate renal irritation due to some of the more common drugs and poisons:

Case X. Male adult, three weeks after a poisonous dose of arsenic.

March 2, 1891. Specific gravity, 1013. Albumin, slight trace. Sediment: excess of renal cells; few blood-globules; few hyaline and granular casts with blood and renal cells adherent.

Case XI. Adult, female, three weeks after a poisonous dose of arsenic.

March 2, 1891. Specific gravity, 1014. Albumin, slight trace. Sediment: amorphous urates; uric acid; excess of renal cells some of which are fatty; hyaline, granular and epithelial casts, some with blood and oil globules adherent.

Case XII. Adult, male, ten days after a poisonous dose of Paris green.

November 12, 1891. Specific gravity, 1029. Albumin, slightest possible trace. Sediment: excess of renal cells; an occasional blood-globule; an occasional hyaline cast with renal cells and blood adherent.

Case XIII. Adult, female, after therapeutic use of bromide of arsenic.

March 27, 1890. Specific gravity, 1014. Albumin, slightest possible trace. Sediment: excess of renal cells; an occasional blood-globule; an occasional small cast with few blood-globules and renal cells adherent. (Drug omitted.)

April 11th. Specific gravity, 1017. Albumin, slightest possible trace. Sediment: uric acid; an occasional blood-globule; an occasional hyaline and epithelial cast.

April 24th. Specific gravity, 1027. No albumin. No abnormal sediment.

May 8th. Specific gravity, 1016. No albumin. No abnormal sediment.

I have seen similar results after taking Fowler's solution.

Case XIV. Adult, female, chronic arsenic poisoning.

March 17, 1890. Specific gravity, 1021. Albumin, slightest possible trace. Sediment: excess of renal cells; an occasional blood-globule; an occasional cast with blood and renal cells adherent.

March 6, 1891. Specific gravity, 1012. No albumin. No abnormal sediment.

I have seen numerous cases of renal irritation due to chronic arsenic poisoning.

Case XV. After therapeutic use of salicylic acid.

February 10th. Specific gravity, 1019. Albumin, trace. Sediment: numerous hyaline, granular and epithelial casts; most of the casts have few adherent blood-globules; free renal cells and blood-globules.

Case XVI. After therapeutic use of salol.

May 26th. Specific gravity, 1022. Color, black. Albumin, slight trace. Sediment: chiefly blood-globules; excess of renal cells; few brown, granular casts, some with blood and renal cells adherent.

(3) Mechanical irritants, of which the principal ones are uric acid and urates, calcic oxalate and cystin, act by being separated from the urine in crystalline form within the renal tubules, the lining membrane of which they may irritate by their sharp angles and points. Aggregations of these crystals with mucus and blood may become lodged in the tubules, increase in size by the deposition of other crystals upon their surface mixed with blood, mucus and *débris* of cells, and thus form a renal concretion, which may cause a permanent circumscribed irritation or inflammation, and consequently permanent albuminuria. This form of albuminuria requires no illustrative cases.

III. Blood diseases. The albuminuria due to changes in the composition of the blood is also accompanied by the presence of renal casts in the sediment. These are almost always pure hyaline in their character, unless the blood-pigment is also separated by the kidneys, in which case we find in the sediment brown-granular casts and brown amorphous matter, as in cases of hæmoglobinuria.

I have by no means attempted to exhaust the list of the causes of renal albuminuria, but merely to call attention to some of the very common ones, most of which are readily amenable to treatment, and which so frequently fall into the hands of charlatans who pronounce the case one of Bright's disease.

The Great Charité Hospital, where most of the university clinics and special institutes for teaching and research in Berlin are housed, is about to be rebuilt on a new site.

THE WOUNDED OF THE WOUNDED KNEE BATTLEFIELD, WITH REMARKS ON WOUNDS PRODUCED BY LARGE AND SMALL CALIBRE BULLETS.[1]

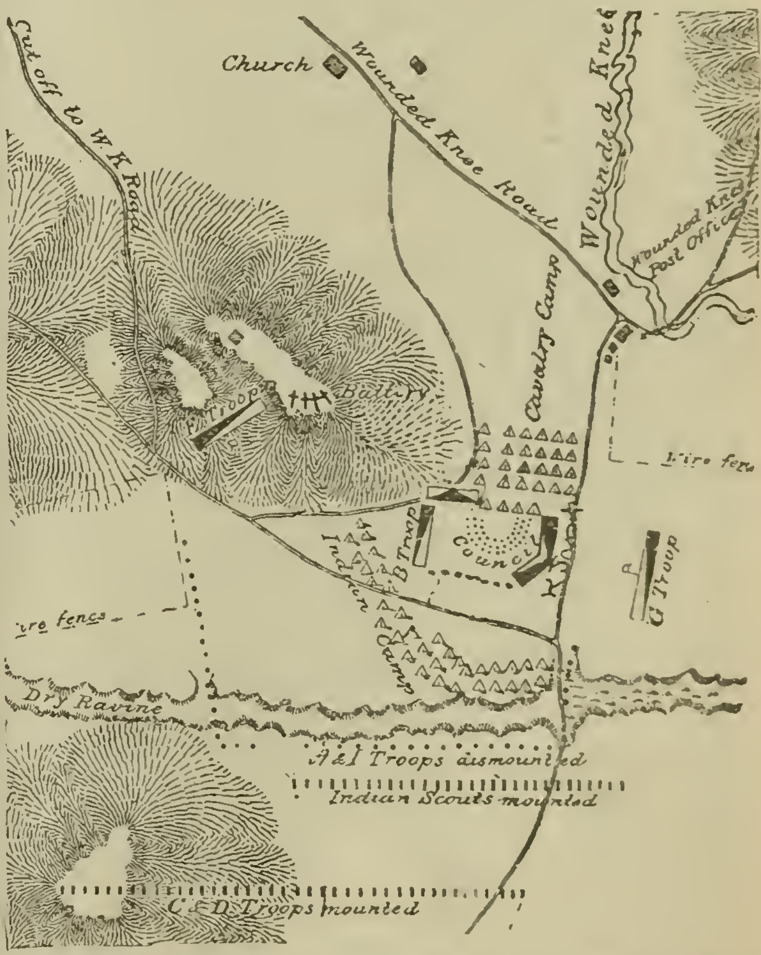
BY CHARLES B. EWING.,
Captain and Assistant Surgeon, U. S. A.

The Great Sioux Indian War of 1890 has been fought so often that I feel an apology is necessary for inflicting it upon you on this occasion, but, while much has been said of the combatants, little has been written of the casualties of which this paper will treat.

The causes which led to this sanguinary hostility are, in brief, "the failure of the government to fulfil its obligations," and the Messiah delusion, together with a determination of the hostile Sioux not to surrender their arms to the government; this latter more particularly led to the Wounded Knee affair.

The theatre of war was located in South Dakota, and especially that part known as the Pine Ridge Indian (Ogallala Sioux) Reservation, situated in the southern part of the State mentioned. I cannot do better than to quote from the annual report of that very gallant and able soldier, Major-General Nelson A. Miles, regarding his disposition of troops. He says: "Seven companies of the Seventh Infantry, under Colonel Merriam, were placed along the Cheyenne River to restrain the Indians of that reservation, and intercept those from Standing Rock. In the meantime, a force had been gathered at the Rosebud and Pine Ridge agencies. Those at the Rosebud, under the command of Lieutenant-Colonel Poland, were composed of two troops of the Ninth Cavalry and battalions of the Eighth and Twenty-First Infantry; Colonel Shafter, with seven companies of the First Infantry controlled the country to the south and west of the Rosebud agency, with station at Fort Niobrara; those at Pine Ridge agency, under the immediate command of General Brooke, were eight troops of the Seventh Cavalry, under Forsyth; a battalion of the Ninth Cavalry, under Major Henry; a battery of the First Artillery, under Captain Capron; a company of the Eighth Infantry and eight companies of the Second Infantry under Colonel Wheaton. West from Pine Ridge agency was stationed a garrison of two companies under Colonel Tilford of the Ninth Cavalry; north of that, with headquarters at Oelrichs, was stationed Lieutenant-Colonel Sanford of the Ninth Cavalry, with three troops, one of each from the First, Second, and Ninth Cavalry; north of that, on the line of the railroad at Buffalo Gap, Captain Wells, with two troops of the Eighth and one troop of the Fifth Cavalry, was stationed; north of that, on the same railroad at Rapid City, Colonel Carr of the Sixth Cavalry, with six troops, was in command; along the south fork of the Cheyenne River, Lieutenant-Colonel Offley, and seven companies of the Seventeenth Infantry; and to the east of the latter command, Lieutenant-Colonel Sumner, with three troops of the Eighth Cavalry, two companies of the Third Infantry, and Lieutenant Robinson's company of scouts. Small garrisons were also stationed at Forts Meade, Bennett, and Sully. Most of the force was placed in position between the large hostile camp in the Bad Lands, which had gathered under Short Bull and Kicking Bear, and the scattered settlers endangered by their presence. As the line under Colonel Carr was considered the most liable to be brought in contact with the hostile force, the division commander established his temporary headquarters at Rapid City, S. D., where this force was in close communication, and from which their movements could be directed with the least delay."

Everything indicated a peaceful settlement of affairs, when the well-laid plans of Major-General Miles looking to an early and amicable adjustment of trouble were suddenly "frustrated" by the lamentable occurrence at Wounded Knee Creek on the morning of December 29th. The opposing forces were the following: the United States troops were eight troops, Seventh Cavalry; Light Battery E, First Artillery, and Company A, Indian Scouts, making a total of 470 fighting men, under the command of Colonel Forsyth, Seventh United States Cavalry. The Indian war party consisted of 106 warriors and 294 women and children, all of the Minnecoujous Sioux, under Chief Big Foot.



This map is drawn on a scale of 360 yards to the inch. The figure at the lower left-hand corner of the Cavalry Camp shows the location of one-half of A and I troops.

So many descriptions of this unfortunate affair have been published that I shall limit myself simply to so much of an account as is to be found in the very brief and concise language of my report, made upon request, to the department commander, and in so doing, I ask pardon for using the personal pronoun to the extent that I do, but, inasmuch as a report of my personal services was desired, I was obliged to frame it in the following terms:

Office of Attending Surgeon,
St. Louis, Mo., June 23, 1891.

To the Adjutant-General, Division of Missouri, Chicago, Ill.

Sir: — Understanding that a report of my services at the battle of Wounded Knee is desired, I have the honor to submit the following:

The battle began at 9.30 A. M., December 29, 1890, and the troops withdrew from the field about 2 P. M., and marched to Pine Ridge agency, reaching that point sometime between 9.30 and 10 o'clock that evening.

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[1] Read before the Association of Military Surgeons of the National Guard, U. S., at St. Louis, April 19, 1892.

Lieutenant Kinzie, Second United States Infantry, Mr. James Asay, Indian trader at Pine Ridge agency, and myself, were seated in an open wagon within ten to fifteen feet of one end of the parallelogram of soldiers that surrounded the Minneconjous Sioux band under Big Foot.

Colonel Forsyth, Seventh United States Cavalry, was writing a communication which one of our party was to carry to General Brooke, commanding Department of the Platte, then at Pine Ridge agency, and while waiting for communication, the firing commenced. A volley came in our direction, the bullets whistling unpleasantly about us; our horses took fright, and, becoming uncontrollable, ran right across the line of fire, but were turned, and finally stopped near Louis Mossoeu's store, about three hundred yards distant from the field of battle; we alighted, and I was then informed by Lieutenant Kinzie that he had been shot in the foot; after examination of the same, I immediately returned to the camp and busied myself in the care of the wounded.

I did not think it a time for ceremony, hence dispensed with the formality of reporting for duty, and at once went to work. The work consisted principally of what is known as first aid to the wounded. The only exception being an operation of a plastic nature, when I replaced and stitched the severed nose of Mr. Wells, the interpreter, belonging to Lieutenant Taylor's command of Indian scouts. This was the only operation, if my memory serves me, that was performed on the field.

This first aid consisted in stopping hæmorrhage; applying dressings to wounds; putting up fractures; giving stimulants; and allaying pain. Later it became necessary to redress many of the wounds, as is often the case, the first dressing being only temporary.

I accompanied Captain Edgerly's troop to a point about three miles to the west, where Captain Jackson was reported to be surrounded by hostile Brulés. Truth forbids that I place this in the light of a medical service, and I freely confess that it was only after arriving at our destination that I was aware that I lacked everything in the way of dressings to render aid to the wounded in case of trouble; of course, much could be done in that regard by using the clothing and equipment of the men. My only excuse is that I went very suddenly, so quickly in fact that there was no time for obtaining dressings. It was in this way: I was standing on the brow of the hill watching the firing of the Hotchkiss guns and the barricading of the ridge, when Captain Edgerly's troop galloped past, and seeing a horse in the troop without a rider, I ran out and jumped in the saddle. I had provided myself with carbine and ammunition, hence was in good shape. It did not take us more than fifteen minutes to ride the three miles, and we were just in time to see the Indians disappear in the direction of Pine Ridge agency. After remaining about fifteen or twenty minutes, I suddenly remembered that I had absolutely nothing in the way of dressings, hence returned to camp with Lieutenant Brewer for the purpose of obtaining some, but learning that the command was to return immediately, I found my services would not be needed, hence did not obtain dressings as I intended doing.

Now, to sum up: I was on the field from 9.30 A. M. to about 4 P. M., at which hour we began our march back to the agency. Of that six and one-half hours, I am quite sure I spent two and one-half to three hours at the dressing station, and the same length of time superintending the removal of a part of the wounded and at least three-fourths of the dead, to which must be added about three-quarters of an hour taken up in accompanying Captain Edgerly's command and returning as stated above.

We consumed about five and one-half hours on the march to the agency, which was of necessity slow. I rode a horse (kindly furnished me by a troop commander), as did also Assistant Surgeons Hoff and Glennan. I did not render any medical service on the march, and think it quite unlikely that such could have been rendered efficiently, as darkness came on quickly and lights were not permitted in the command. I was not called upon to render any aid by the surgeon officially in charge, and I fail to see, under the conditions, how the wounded could have been benefited further till arrival at division hospital. I would be failing in a proper appreciation of the work of my brother surgeons in this connection were I not to mention the very efficient and untiring services of Captain Van R. Hoff and Lieutenant Glennan, of the Medical Department, who labored unceasingly in ministering to the wounded. Upon arriving at Pine Ridge agency, the wounded were placed in that part of the divisional field hospital of which I was in charge. It was my duty to attend and redress some twenty of the wounded, which occupied my time till two o'clock the following morning.

Very respectfully, your obedient servant,
CHARLES B. EWING,
Captain and Assistant Surgeon, U. S. A.

Now, to the consideration of the casualties, which I shall separate into the killed and wounded; of the former we had one officer and twenty-nine men, a total of thirty.

The great majority were killed outright, the very few surviving a variable time from a few minutes to a few hours after the reception of their injuries. Captain Wallace, besides the fatal gunshot wound of the lower abdomen, received two cuts with a tomahawk or hatchet; one across the forehead just above the superciliary ridges, and the other conforming to the anterior two-thirds of the sagittal suture. In neither case did these cuts fracture the skull.

This officer's death, coming as it did in the heyday of his career, was indeed a "tragedy." No words of mine can portray the love and admiration in which he was held by his family, friends and brothers-in-arms.

> "His life was gentle; and the elements
> So mixed in him, that Nature might stand up
> And say to all the world, 'This was a man.'"

The greater portion of the dead I saw had received two or more wounds. In order that you may clearly appreciate the treatment of the cases to be presented, I shall premise by stating that my knowledge of them dates from the battlefield, on the morning of December 29, 1890, and ended, so far as three-fourths of them are concerned, upon their transfer to Fort Riley, Kan., January 4, 1891; remaining in charge of those whose condition could not permit of transfer at that time, till a day or two later, on which date I was placed in command of a company of the Hospital Corps.

The wounded consisted of two officers, twenty-nine enlisted men, and one civilian interpreter, attached to the scouts. I shall classify the above, broadly speaking, according to the part of the body injured, leaving out of detailed consideration twelve cases of gunshot wounds, mostly of minor import, which did not come under my care.

In brief, then, we have gunshot wounds of the head, body, upper and lower extremities.

We will now consider the wounds as classified, taking up those of the Head, three in number:

CASE I. Private H. D., Troop A, Seventh Cavalry. Pistol-ball entered right side of face half an inch anterior to lower part of right meatus auditorious externus, passing transversely through bones of face and obtaining exit two and one-half inches anterior to lower part of lobule of left ear. Calibre of pistol not known, but from size of wound of entrance, think it about a 38. Discharge of blood from both ears, and persistent flow of saliva, the latter giving evidence of the wounding of Steno's duct. A violent cellulitis supervened, which finally subsided under treatment, and he was in excellent shape when transferred.

Case II. Gunshot wound of inferior maxilla. Quartermaster-Sergeant C. C., Seventh Cavalry. Ball entered left inferior angle of chin, passing transversely through body of inferior maxilla, with inclination downward, gaining exit at right inferior angle of chin, crushing and comminuting bone in its passage. Treatment consisted of removing broken particles of bone, with corresponding teeth; stitching the lacerated integument of chin; applying antiseptic dressings; felt splints and bandages to support chin. This man was doing as well as he could under the circumstances when transferred. I understand that he has since had false teeth and plate made.

Case III. Incised wound of nose. Mr. W., Indian interpreter attached to Company E, Indian Scouts, had all that part of nose anterior to nasal bones slashed off with a knife in the hands of an infuriated Indian of Big Foot's band. The severed part was hanging by a mere shred and bleeding profusely. Fifteen minutes after reception of wound, I replaced nose, and held same in place with numerous silk stitches. This man immediately after the operation, took his Winchester and went at once to the skirmish line, and afterwards on our return to Pine Ridge agency, took his place in the advance with Lieutenant Taylor's Indian Scouts. I did not see Mr. W. for some days after operation, when I found good union, and removed stitches. This, if it can be so dignified, was the only operation performed on the field.

I now come to Gunshot Wounds of the Body. Under this heading we have five cases:

Case I. Penetrating gunshot wound of chest. Private J. C., trumpeter Troop K, Seventh Cavalry. Ball entered two and one-half inches below and one inch from left nipple toward median line, passed transversely in straight line, gaining exit two and one-half inches below right nipple. No rise of temperature, and patient in good condition when transferred.

Case II. Sergeant H. H., Troop A, Seventh Cavalry. Ball entered posterior surface of left chest, passed forward, coming out just internal to the left nipple. Besides the above, Sergeant H. suffered two additional gunshot wounds, one above and the other below left elbow. Pneumonitis supervened.

Case III. Sergeant L., Troop I, Seventh Cavalry. Ball entered to right of sternum just below clavicle, passed backwards and outwards, obtaining exit at axillary line in the fifth intercostal space, where incision was made, and the ball removed, with pieces of blouse and fragments of undershirt. Pneumonitis followed.

In considering the treatment of the cases coming under this particular heading of Penetrating Gunshot Wounds of the Chest, I should like to mention the cases of one officer and two enlisted men, who suffered gunshot wounds of like character in an affair with Chiricahua Apaches at Chevelon's Forks, Ariz., July 17, 1882.

The treatment of all these cases was alike, with recoveries in all of them. It was as follows: thorough cleansing of wounds; application of corrosive sublimate solutions; iodoform powder dusted upon parts; antiseptic dressings just sufficient to cover each particular wound; then the application of collodion, sealing part "hermetically" or by what is known as primary occlusion; finally restraining the muscles of respiration by circular bandages of chest, and fixing arm of side affected. I do not wish to place myself on record as treating all penetrating gunshot wounds in this way, but simply present my experience to your consideration for what it is worth. I am quite of the opinion that I should modify my treatment by substituting the plaster-of-Paris bandage, with the flannel roller, for the circular cotton bandages, to restrain the muscles of respiration.

This treatment by primary occlusion may seem very radical indeed, when such an authority as Ashhurst says, "The vast majority of penetrating wounds of the chest are gunshot injuries, the exceptions incised or punctured wounds. Applying the ordinary principles of surgery, even to the exceptional group, nothing but absolute-necessity would justify the complete closure of the wound." And again, "Surely the conditions of a wounded lung and thorax are unfitted for the experment of closure." And further, "Nothing appears more repugnant to the principles of surgery than the attempt to close a bullet-track which, however it be placed, under its ordinary conditions must afford ample material to be discharged externally." I quote the above to present the other side of the question as well as my own. I think this kind of dressing for chest wounds would become very necessary, particularly where traumatic pneumonitis has been set up, which would preclude the constant change of dressings and the consequent exposure of the chest at those times. The consensus of opinion among military writers is that the least fatal injuries are those in which the projectile has passed entirely through the chest, being less injurious than those in which the bullet has lodged. While my cases are few, the results are certainly very satisfactory, when we consider that during the last two years of the war, the death from penetrating wounds of the chest reached almost 33½ per cent.

Case IV. Gunshot wounds of vertebræ, upper and lower extremity. Private ——, Troop B, Seventh Cavalry, suffered four distinct gunshot wounds: one passing transversely through lumbar vertebræ from left to right, crushing and comminuting vertebræ and severely injuring the cord and its membranes, and finally lodging in the muscles of the right lumbar region; penetrating gunshot wounds of right and left arms below elbow-joints; and the fourth passing through left leg just above ankle joint. It would not be economizing fact very much to say that this man was literally shot to pieces. The bullet which I now exhibit, weighing 385 grs., was removed from the right lumbar region by simple incision, without anæsthetic, immediately after his arrival in the divisional field hospital at Pine Ridge, and, as Nature had not moulded him to resist three ounces of lead in this form and method of distribution, he died shortly afterwards. The injuries of this soldier were so severe that it was hardly expected that he would survive the journey from the battlefield to the field hospital, sixteen miles distant.

Case V. Gunshot wound in neighborhood of right inguinal region. Lieutenant H. H., Light Battery, Second Artillery, received gunshot wound (Winchester) of right side, ball entering just external to anterior superior spine of right ilium and passed downwards and inwards. This officer was in charge of a Hotchkiss gun some six hundred yards distant from a party of hostiles that had gained the shelter of a ravine, and who were beset upon two sides by the fire of carbines and upon the third by Hotchkiss guns.

The gun in charge of this officer was moved from its original position upon an eminence to lower ground, so that better range could be obtained, rendering the fire more effective. This was so successful that the Indians sought to silence this particular piece, resulting in the shooting of Lieutenant H. The ball was deflected from its original course, seemingly a fatal one, by a watch worn at the time and which was completely destroyed. I saw Lieutenant H. when shot on the field; he fell under my care that evening at the field hospital; and the same night or the following morning I examined and dressed his wounds, at which time the course of the ball had been fully determined. Having a great deal of work on my hands, I was glad when relieved of this case by another medical officer. I understand Lieutenant H. has so far recovered from his injury as to be able to perform duty.

Let us now consider Gunshot Wounds of the Upper Extremity.

Sergeant H. H., Troop I, Seventh Cavalry, was admitted to the field hospital, Pine Ridge agency, December 29th, from the field where I first saw him. Ball entered just external to coracoid process of scapula, passed through deltoid muscle, finally entering the head of humerus. Severe. This man was treated upon the expectant principle till his transfer to Fort Riley on January 6th, for the following reasons: no appreciable rise of temperature; complained very little of pain; was able to sit up and walk about to a certain extent. Treatment consisted of securing thorough drainage of wound; absolute rest by appropriate position and posterior splints of felt or plaster-of-Paris (I have forgotten which); antiphlogistic regimen; hypodermic administration of morphia when necessary.

I find myself well supported in the above treatment by Billroth, who declares against operative procedures, under like conditions, as follows: "As in cases of resections, you can have no control as regards the prospective functions of the arm, especially when a large portion of bone is to be excised, it is always better for the patient to escape with an anchylosed joint, without resection, than to have a dangling joint after resection."

Von Langenbeck says: "If it be true that anchylosis of the shoulder-joint enhances the usefulness of the rest of the extremity, and especially of the hand, we would be obliged, in shot-injuries of the shoulder-joint, to constantly strive for the accomplishment of anchylosis. The presumption that anchylosis would bring about greater usefulness of the arm than could be had with a shoulder-joint even with limited motion, rests upon a fallacy, occasioned by neglect to take into consideration the various degrees of severity of shot-wounds of the shoulder-joint." The same author cites nine successful cases of shot-wounds of the shoulder-joint treated on the expectant plan, the patient in every case recovering, "completely with conservation of good motion of the arm." He further says: "It is certain that the results of the cases of conservative treatment of shot-wounds of the shoulder-joint above cited challenge greater attention to the side of conservative surgery."

Two of the cases under this heading were gunshot injuries in the neighborhood of the shoulder-joint, one of them made by a Winchester 38, and the other by a gun of larger calibre. Both cases were given complete rest by means of splints and position; drainage of wounds; antiphlogistic regimen, and opium in cases of pain, which complaint was rare.

No symptoms up to the time of transfer to warrant operative interference. I am quite of the opinion, however, that if the temperature, pain, etc., had so indicated, I should at once have made an exploratory incision, and an exsection or amputation, according to the conditions in each particular case; but up to the time of transfer to Fort Riley, there occurred nothing to warrant such procedure.

Gunshot Wound of Upper Extremity.

Lieutenant G., Troop G, Seventh Cavalry, received a shot which entered olecranon process of right ulna, comminuting that part, passing forwards through shaft, and gained exit at the posterior surface of arm, at junction of inferior with middle third. Treatment consisted of removing portions of bone; applying antiseptic dressings, and supporting arm. This case was turned over to another surgeon the day following his arrival at the field hospital. I have since learned that this officer has rejoined his regiment.

Gunshot Wound of the Right Hand.

Private F. L., Troop B, Seventh Cavalry. Ball entered internal border of wrist, and passing through comminuted bones of same, coming out on palmar surface at base of thumb. Wounds cleansed, dressed antiseptically, and given rest by application of splints. This man was transferred in good condition.

Gunshot Wounds of Lower Extremity, consisting of two of thigh, one of knee and two of leg.

Case I. Private Wm. H. G., Troop C, Seventh Cavalry, while mounted, received a gunshot wound which entered middle of posterior surface of left thigh, at junction of middle with upper third, ranging slightly downward (missed femur), passed forward and inward, obtaining exit at about middle of internal surface. Wounds were cleansed, dressed antiseptically, and when transferred patient was about well.

Case II. Private E. S., Troop C, Seventh Cavalry. Gunshot wounds of right and left thighs. Ball entered inferior surface of left thigh, ranged upward in front of femur, passing out at internal border of anterior surface at junction of middle with upper third; this ball continuing its course entered internal border of posterior surface of right thigh, and ranging transversely behind femur, passed out at middle of upper third of external border of posterior surface. Treatment consisted of thoroughly cleansing wounds, using bichloride of mercury solutions and dressing antiseptically. This man had about recovered when transferred.

Case IV. Private G. E., Troop K, Seventh Cavalry. Gunshot wound of right leg, middle third. This was a very severe compound comminuted fracture of both tibia and fibula, with much destruction of the soft parts, including a division of both anterior tibial and peroneal arteries. Am of the opinion that this was a case of primary infection. Thirty-six hours after entrance into field hospital it was decided to amputate limb. I performed the operation, assisted by Surgeons Hartsuff and Spencer, United States Army, under rather unfavorable auspices. A Sibley tent with the earth for a floor served as an operating-room, which is very unsatisfactory, inasmuch as your light passes to you through a mere "chink" of a door, and the tripod which supports the central upright pole of the tent permits very little room for the operating table, assistants and tables for antiseptic fluids. Then again, you may sprinkle your floor assiduously with water, yet those moving about run great risk of stirring up clouds of dust. Patient was placed under chloroform and a lateral flap amputation was performed, four inches below knee-joint, under antiseptic conditions so far as they could be obtained. Leg was found as described above; flaps were brought together, permitting of the best drainage. Treatment then consisted in supporting patient, and using persistent antiseptic irrigation of the stump, but despite all our efforts, the products of the staphylococcus pyogenes were formed abundantly, and the patient succumbed to pyæmia resulting from a primary infection upon the battlefield.

Now, to sum up, we have reviewed: Gunshot wounds of the head, three cases; of the body, eight, including the three cases quoted; of the upper extremities, six; and of the lower, four; making a total of twenty-one cases.

The difficulties of the situation, as they appeared to the medical director of the department, Colonel Bache, can be learned by a reference to his own language when he says: "Had that regiment (the Seventh) been operating at a distance from support or organized assistance instead of having a receiving hospital within easy reach, it is not hard to cast the sum of its suffering." In comparison with the difficulties met with in this instance, in which there were three (although the medical director says two) medical officers, and four hundred and ten men to care for, thirty-one wounded, I would like to place for a moment those met with and successfully overcome, in an affair in which I played a part some years since upon another field.

My memory recalls the battle of Chevelon's Forks, (Ariz.), the 17th of July, 1882, where the fighting strength of the Chiricahua Apaches was about the same as that of the actual Indian combatants in this affair under consideration; the opposing forces being two troops of the Third and one of the Sixth Cavalry, under Major Evans and that brilliant cavalryman, Captain Chaffee, respectively. These Indians were the most warlike in the entire Southern country, and among them were the renegade scouts that had turned against General Carr's command at Cibicu Creek, Ariz., the year before. The engagement was a sanguinary one, the Indian foe holding a very inaccessible point in the mountains some five or six hundred feet high, with precipitous sides except upon the south, which, while permitting the approach of our forces, was so strongly fortified and the Indians so well armed and such good marksmen, that this line of approach was exceedingly dangerous. The casualties were two officers and twelve men wounded and two men killed. The Indians lost fifteen killed, (left upon the field), and a number of wounded carried off under cover of darkness. The Indian camp was captured, and with it two Indian squaws and two children; one of these squaws suffered a very severe gunshot wound of the right leg, which made amputation necessary. I performed this operation at once, upon the field, using as an operating-table a box placed upon the ground, which was at that time covered with three to four inches of hail, having plenty of spectators in the shape of soldiers. This case with seven others, we carried by hand on rude litters fashioned from the branches of the pine tree, for a distance of fifteen miles, such was the roughness of the country. Upon gaining the table-land of the Mogollon Mountains, where a comparatively smooth country was found, mule litters were made, upon which the more serious cases were placed, and carried ninety miles to Whipple Barracks. The lamented Crawford was detailed with two troops of cavalry to help me out of the mountains with the wounded, and his men acted as litter-bearers, relays being necessary every two or three hundred yards. This task, from the roughness of the country and the rudeness of the litters, was found not a very agreeable one. Our base of supply in this instance was fifty miles distant, whereas in the affair under consideration it was only sixteen. The difficulties were really not great, and I can only recall one case in which I thought the operation of amputation of the limb should have taken place on the battlefield rather than at the field hospital twenty-four to forty-eight hours later.

This unfortunate battle provoked another hostility upon the following day, in the shape of the White Clay Creek affair. Such, however, was the masterly manner in which that gallant soldier, General Miles, controlled the situation, both by his comprehensive knowledge of the art of war as indicated by the disposition of troops and his clear insight into the Indian character, that he prevented what at one time threatened to become a serious Indian war. Peace as well as safety was again assured the settlers of that sparsely populated country, a month after the arrest of Sitting Bull, by the surrendering of nearly 4,000 Sioux Indians at Pine Ridge agency, February 15, 1891. The entire sentiment of the country is well voiced by no less a personage than the President of the United States, in his last annual message, when, in speaking of General Miles, he says, "*He is entitled to the credit of having given thorough protection to the settlers and of bringing the hostiles into subjection with the least possible loss of life.*"

It is not surprising that the casualties of the foe, as well as ourselves were great, when we remember that the fire-arms used were those of largest calibre at close range. The Sioux were armed with three different kinds of guns, namely, Winchester of pattern 1866 and calibre 45; Winchester, calibre 38; and the Springfield carbine, calibre 45. The principal weapon was the Winchester, calibre 38, together with very few of the other patterns mentioned.

The United States troops were armed with Springfield carbines, calibre 45; weight of bullet 400 grs., composed of lead and projected by 55 grs. of powder. The wounds resulting from the above were sinous and irregular, with lacerated edges; and the apertures of exit were frequently much larger than those of entrance. Fragments of clothing, splinters and pieces of lead were at times left in the wounds by the bullets, which, when permitted to remain, frequently led to long and obstinate suppurations (as instanced in the Indian wounded), often rendering secondary operations necessary. These bullets, by reason of the malleability of the metal (lead) of which they are made, are expansive; they easily lose their regular form and "mushroom," readily bursting into fragments upon contact with a hard body. By reason of the above, wounds of blood-vessels are more frequent, and attended with laceration, and the gravest of all dangers to the wounded on the battlefield, hæmorrhage. These wounds are further complicated by the splintering and not infrequently the complete shattering of bones.

I am of the opinion that three-fourths of the casualties of the opposing forces were received in what may be termed the "explosive zone" of the projectiles' trajectories.

If, then, for the sake of illustration, we divide the trajectory of a small-arms projectile into three zones of action, indicative of the effects of its penetrating power on the human body, we should designate them as: (1) a "zone of explosion"; (2) a "zone of penetration"; (3) a "zone of contusion."

With record of the remaining velocity of the projectile, at successive stages of its trajectory, which it is perfectly possible to have with fair accuracy; and with an assumed value of the work of penetrating the average human body, which assumption could be made within reasonable limits of error; and with an assumed value of the remaining velocity after penetration, the projectile reappearing to leave a wound of the explosive type, which would be a very vague assumption,—accurate calculations of the zones could be made, but the result could be no better than the assumed data of the problem. Looking to experience, for the zones of the Springfield rifle, the wounds at the Wounded Knee fight, mostly within 100 yards range, were distinctly of the explosive type. The wound of Lieutenant Hawthorne, delivered at 300 to 400 yards, just failed of this type. I have seen, at target practice at known range, the body of a man perforated by the Springfield bullet at 1,000 yards, and my memory retains no note of the wound of exit being of remarkable character; from which I infer that this range is well within the zone of penetration. I shall therefore estimate these zones, for effective range of 2,400 yards, to be as follows: explosion, up to 250 yards; penetration, thence to 1,200 yards; contusion, thereafter.

The discussion of the zones of "explosion," of "penetration," and of "contusion," is a mixed one, involving both mechanics and physiology. Its mechanical features are essentially as follows: a very rapidly moving projectile practically shatters and destroys the material opposed to it, and makes a clean hole, as a pistol-bullet through a pane of glass, or as the entering bullet in the familiar type of gunshot wounds. A projectile of less velocity tears or breaks the material opposed to it, as a bullet thrown from the hand against a pane of glass, or as the issuing bullet in the ordinary gunshot wound.

The "zone of explosion" for any given piece is that part of its range in which the projectile has so great velocity that its loss of speed by penetrating the body of a man still leaves such velocity as to make the wound of exit similar in character to that of entrance; the loss of velocity by the work of penetration is so great that this zone is very narrow except for pieces of great power.

The "zone of penetration" for any piece is that part of its range in which the velocity of its projectile is such that it perforates the human body, but the loss of velocity in doing so leaves the projectile unable to make the wound of exit similar to that of entrance. This zone makes up the important effective range of most fire-arms.

The "zone of contusion" covers the whole range from the last to the harmless "spent ball." Much of it is still effective range.

The penetrating power of the projectile varies directly with its weight, directly with the square of its velocity. The resistance of the human body may probably be taken to be proportionate to the area struck, that is, to the square of the calibre.

In comparing the more modern arms with the Springfield rifle, the higher velocity and the less area of resistance more than counterbalances the less weight of projectile, and the "zone of explosion" confined to a very short range in our arm, is with them a considerable part of their effective range. We are neither keeping pace with the humanity of nations nor increasing the effectiveness of our army, by still holding on to the antique, single-loading Springfield rifle, calibre 45.

This old-fashioned gun cannot be compared to that of France, the weapon of Germany or that of Austria; and while our arm possesses a larger calibre than that, I think, of any other civilized nation at this time, it cannot be classified with such old calibres as those of 68 and 72 (the latter known as the Minnie carbine), carrying projectiles that weighed as much as 740 grs. We find, however, a gradual change for the better, as in the last Franco-Prussian war the Germans were using an arm with projectile weighing 478 grs.; twenty-two grains less than our own. The French, upon the other hand, were armed with the Chassepot, calibre .43, carrying a bullet weighing 385 grs. The Gras, which superseded the Chassepot in 1874, did not reduce the calibre or weight of bullet. The real advance was made, however, in the direction of increased velocity and reduced calibre, when the Lebel was adopted. Germany kept pace with France in substituting the Mauser model (1888) for that of 1871–84; and Austria followed suit by arming her troops with the Mannlicher.

Now, to sum up, from the standpoint of ballistics, the modern arms mentioned are superior to ours by reason of possessing (1) greater initial velocity, (2) flatter trajectory, (3) greater accuracy, (4) greater penetration, (5) greater range.

Added to these qualities, we find the quantity of powder lessened, the weight of projectile decreased, and from a financial view less cost of the arm as a whole. The most interesting phase is presented, however, when we consider this matter from a surgical aspect. Chavasse and Delorme are of the opinion that all wounds received in the space between three hundred and nine hundred yards, are equally dangerous, but this is not concurred in by Chauvel, who contends that the explosive effects are as frequent in arms of small calibre. Dr. Noel, in the *Medical Bulletin* of February and March, 1891, says, "The disorganization of the soft parts is so extensive and the loss of tissue so considerable, that in general all reparation is impossible and a considerable sacrifice, is rendered unavoidable." "The zone of penetration," however, presents a more marked difference; here the bullet, as a rule, maintains its shape; the wounds of entrance and exit are more equal; the fluids of the body are not thrown violently toward the periphery, as in the case of balls of large calibre, and the edges of the wounds are not bruised or lacerated, but look as if the integument had been "punched out." As we have stated, the bullet does not change its form, except in very rare cases, so that fragments of clothing and foreign bodies are not usually left in the track of the wound; hence consequent suppuration is not to be feared. It is said that union is, as a rule, to be expected by first intention; the period of recovery will be shortened; paralysis or extensive shock rare; gangrene less grave and infrequent. Bones will not suffer fracture to the extent heretofore known, as they will be pierced in their entirety, and the fissuring and splintering will not be so extensive. Blood-vessels and nerves will run less risk of being struck proportionate to the reduced diameter of the projectile, consequently hæmorrhage will not be so frequent, and the wounded in better position to await for first aid. In the "zone of contusion" we will find either simple contusions or contused wounds, their gravity diminishing as the bullet reaches the end of its trajectory, thereby losing its force. Periostitis, abscesses and exfoliations will ensue at times where bones have been struck, but these form the most serious cases, for generally we will find mere extravasations of blood into the connective tissue. The optimistic picture just drawn portrays what is thought by some of the French and German writers upon the subject of their respective arms; but this is not shared in by Billroth, who recently spoke to a question relating to the reorganization of the army medical corps of the Austrian army. He is of the opinion that the modern small arm will aggravate suffering and slaughter in the battle of the future, and informs us that as eighty per cent. of all wounds result from rifle-balls, fifteen per cent. from heavy guns, and five per cent. from cavalry weapons, surgical attention must be devoted principally to the infantry projectile. Accurate statistics of the war of 1870–71 show that comparatively few were killed by artillery.

Speaking of the manœuvering at a distance which the long range of the modern arm will lead to, he says: "A collision must come sometime, and then what will the effects of the new rifle be? Bullets that formerly stopped at the bone will pierce it, and perhaps two or three other bones; the number of the severely wounded will be rapidly increased, and the armies will dwindle rapidly.

"In consequence of the greater length of range, the wounded must be treated at a longer distance from the enemy, say four hundred paces further than heretofore. Moreover, with the quicker movements of the troops comes the necessity for the quicker moving of the field hospitals. The number of porters of the wounded, already too small in the Austrian army, will have to be largely increased; in fact, many wagons must be drawn up immediately behind the line of battle to carry off the injured."

After dwelling upon the increase of the mortality to result from the use of smokeless powder, Professor Billroth continued to speak very disparagingly of the stretcher service in these words: "At Gravelotte St. Privat there were 5,000 dead and 15,000 wounded. Two-thirds of the latter were only slightly wounded, and were carried off by railway. For the severely wounded, when we calculate that two porters with one stretcher made the trip of 500, 600 and 700 paces ten times during the eight hours of battle, we find that for the Germans alone 500 stretchers and 1,000 porters were necessary. We have left out of all consideration the French, for whose severely wounded the Germans, as victors, had to care. This at least doubled the requirements, so that 2,000 porters and 1,000 stretchers were needed. This shows how entirely impossible the whole stretcher service is."

Doctor.— H'm! You are run down, sir. You need an ocean voyage. What is your business?

Patient.— Second mate of the *Anna Marie*, just in from Hongkong.— *Brooklyn Life.*

IS IT EXPEDIENT TO HAVE A PHYSICAL EXAMINATION OF MEN BEFORE ENLISTING THEM IN STATE TROOPS?[1]

BY HERBERT L. BURRELL,
Lieutenant-Colonel and Medical Director, First-Brigade, M. V. M.

In the title of this paper I have used the word expedient, believing that all persons interested in State troops recognize the propriety of a physical examination. The difficulties which present themselves in carrying such a measure into effect in the States with which I am familiar are the following:

(1) The expense involved in conducting such an examination.

(2) The annoyance to the citizen of being rejected, and the influence that a rejected recruit may have in deterring other enlistments; hence, added difficulty to the company-commander in keeping up his enlistments to the required quota.

In the State encampments which I have visited, I have been impressed with the necessity for a judicious discrimination being exercised by some medical officer in making enlistments. In my own Commonwealth the militia of the State includes (Sect. 1, Chap. 411, Acts of 1887, Mass. Militia Laws) "every able-bodied male citizen resident within this State of the age of eighteen years or under the age of forty-five." This constitutes the persons subject to military duty. "The active militia (Sect. 21, *ibid*) shall be composed of volunteers, and shall be designated the Massachusetts Volunteer Militia, and shall first be ordered into service to resist invasion, to quell insurrections, to aid in the suppression of riots, and to aid civil officers in the execution of the laws of the Commonwealth, or in time of public danger."

This gives us two distinct services for which the militiamen can be called upon to act; first, to resist invasion; and second, as an aid to the civil authority in enforcing the laws. It would seem that all men would recognize that a force to be used for either of the above purposes should be free from any serious imperfection. Is that the case in the National Guard in my own Commonwealth? I regret to say that it is not. The personnel of the militia in Massachusetts has steadily improved during the last twelve years. Not only have active, more able-bodied men been enlisted, but more influential men have officered the State troops. Drill and discipline has steadily improved; but there has been no movement in the medical department towards an examination of enlistments. In the report of the Adjutant-General of Massachusetts, which will soon be published, there is recommended a recruiting standard, as follows:

"A recruiting standard should be established, to prevent the enlistment of men unfitted for military service. No youth of immaturity should be accepted, nor should a man be enlisted because of his giant proportions."

This recommendation assumed the importance of a general order (No. 1), which was issued January 13, 1892, an abstract of which is, "Enlisting and mustering officers will be assured of the good physical condition of recruits before enlistment and muster into the service, and no man of abnormal proportions will be accepted."

The State of New Jersey has taken a step farther.

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[1] Read before the Association of Military Surgeons of the National Guard at St. Louis, April 21, 1892.

On March 29, 1892, in General Order No. 2, "The following resolution, adopted by the State Military Board and approved by the governor and commander-in-chief, is published for the information and guidance of the National Guard:

"Regimental and battalion commandants are authorized, whenever they deem it expedient, to send any recruit before the surgeon or assistant surgeon of their commands for physical examination, and upon report being rendered that he is unfit for service, his application for membership shall be rejected."

Owing largely to the efforts of Major Marion in my own State, there has been introduced in several of our regiments an athletic association; competitions have been held, and the time has come for a physical examination of recruits.

The brigade in which I have the honor to serve as medical director was mobilized one cool October day at Worcester, which is in the centre of our State. Nearly twenty-five hundred men were brought into the city of Worcester; carried out the work of the day; which consisted of drills and regimental movements, a street-riot drill, and a four-mile march. During this march there were twenty-eight men from the brigade who were assisted by the ambulance corps, some of whom were obliged to ride in the ambulance. Many of these men were disabled by temporary illness; but a number were physically incapacitated for serving as guardsmen. They were the following: Five men had serious flat-foot, which they confessed incapacitated them from walking long distances; three men had varicose veins, two of them having large varicose ulcers on their legs; and four men had serious cardiac disease, two having loud aortic murmurs. These twenty-five hundred men were mobilized in a large city. The discipline could be termed almost perfect, for not an arrest was made for disorderly conduct.

In a company of cavalry in one of the New England States some ten years ago, on a warm June day the troops were mounted and rode about twenty miles. The battalion started with seventy-two men. When they arrived at their destination, there were sixteen men rode into the camp-ground; the rest for various reasons, among which a fair proportion of bad horsemanship should be considered, had stopped by the wayside, shipped their horses forward, and came on by train. The next day it was estimated by a medical man that only eighty-five per cent. of this force would have been able to stand three days' campaigning.

Numerous instances of confirmed epileptics have been brought to the brigade hospital during our annual encampment in Massachusetts.

At one of the smaller State encampments in the East, there was discovered a man, who had been enlisted a fortnight before camp, who had a hard chancre of the lip. This was, of course, a constant menace and source of infection to every man in the company mess. The man was promptly discharged when the disease was recognized.

It is a perfectly fair question whether a physical examination of recruits is not a matter of ordinary safety to the individual and to the State itself. Numerous cases have been brought before the Military Committee of our State legislature for compensation received for injuries. In one instance in the past year a man has claimed that his eyesight was destroyed on duty, and has received an annuity of two hundred dollars a year for five years. In 1887 a man with epilepsy enlisted and had a sunstroke, from which his friends claim that he became insane. The State is now paying his wife an annuity of two hundred dollars a year for five years.

A physical examination would be a great protection against fraudulent claims against the State. How easy it would be for a man with a hernia to enlist in the artillery, and after riding on the hard caissons to claim that he was ruptured from this service, and bring a bill for compensation against the State. My own belief is that such an examination would not alone be of benefit, but is almost an absolute necessity. The State of New York has recognized the importance of this subject by issuing a general order, directing a physical examination of all recruits before enlistment.

The question of expediency is one of tact. It is not necessary to adopt so strict a physical examination for State troops as in the United States Army. The guardsman is a volunteer; but any serious defect in his physical condition which would prevent him from doing full duty to the State, or injuring himself by performing the duties of a guardsman, should cause his rejection.

I think that all recruits before enlistment should be examined by a medical officer, and that after consultation with the company-commander he should reject those found unfitted.

The reason for this introduction of the company-commander into what at first seems a purely medical question, is one of expediency. Recruits as they are enlisted into companies often come in batches. John Smith and Tom Brown will go into the company if Frank Jones, who is the best fellow in their crowd, goes in. This may seem a departure from a standard of medical requirements; but to the line officers and company-commanders it is a condition requiring consideration. If Frank Jones is rejected because he has a varicocele which does not interfere with his occupation, the State may lose the services of John Smith and Tom Brown. This is looking at it from the company-commander's standpoint.

The advantages of a medical examination of troops can, I think, be made quite evident. If the State pays for the services of able-bodied men it is our duty as officers to see that she receives an equivalent. A man who is incapable of sustaining the fatigue of a four-mile march would be an incubus upon the rapid movement of troops, and in all future uses of State troops rapidity of movement will be an important consideration. Every officer who has campaigned knows that the sick are the greatest impediment to the movement of troops. A body made up of integral parts has the strength of the weakest, not of the strongest. Efficiency of recruits, not numbers, should be the guide. At present the State pays annuities for (alleged) permanent injuries. The amount of money expended for this purpose would nearly pay for a systematic examination of massed recruits.

The advantages of this system are the following:

(1) The securing for the State of able-bodied men, and its protection against fraudulent claims.

(2) The eventual improvement of the *esprit de corps* of organizations, by establishing the principle that only sound men can be members of the National Guard.

(3) The knowledge of the civil authorities, that,

when they call upon the reserve strength of their State for the enforcement of laws, they will not be leaning upon the staff of a bruised reed.

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TREATMENT OF TONSILLAR HYPERTROPHY.[1]

BY JONATHAN WRIGHT, M.D., OF BROOKLYN, N. Y.

An apology for bringing up again the question of the treatment of tonsillar hypertrophy can best be made by an explanation. While there are many well-known and almost universally conceded facts in the question, these very points, in many discussions, have been dwelt on to the almost entire exclusion of certain matters of detail which possess a more lively interest for those who annually see a large number of throat cases. The hope of giving more prominence to these points forms my apology for the resumption of a discussion already exhausting and in many directions exhausted.

On a reference to *Sajous' Annual* for 1891 (Vol. IV), it will be found that statistics, as far as they go, show that hæmorrhage of a serious character occurs after tonsillotomy, about once in 3,000 cases (or exactly as stated there, 7 to 20,000.) This ratio is made up from a consideration of all cases, without distinction; and this may, and undoubtedly has, given rise to great misapprehension. A year or two ago I had the records in the surgeon-general's office searched for certain facts concerning tonsillar hæmorrhage. In twenty-five years it was found that 31 cases of serious hæmorrhage had been reported. In nine of these cases the age was not given. Two cases were in children, of which one was a hæmophile and one was a case of abnormal course of the internal carotid artery. The other 20 cases were all eighteen years of age or over; therefore, although Moure has lately published a case of hæmorrhage in a child from abscission during acute tonsillar inflammation, we can practically rule children out.

I have no way of accurately knowing how many more children have their tonsils cut than adults. For the sake of argument, let us say we do one tonsillotomy in an adult to twenty in children. Exactitude in figures is neither possible nor desirable here; and you will all admit, I think, that this assumption is not far enough out of the way to invalidate the argument. To obtain the ratio of adult hæmorrhage after tonsillotomy, therefore, we must divide 20,000 by 20; this then would give us a proportion of 7 to 1,000, or about one case of hæmorrhage to 150 adult tonsillotomies. I leave it to your individual opinions to say whether this is a ratio to be regarded in deciding the question.

Personally, I have very little respect for statistics in medicine; every case is to be considered on its own merits. I have only brought forward this statistical argument, so often urged, to show its fallacy. If every case were reported, I believe the figures would be still less favorable to the cutting of adult tonsils. Of course, opinions must necessarily differ as to what is serious hæmorrhage. It is always difficult to estimate the amount of blood lost, mixed as it is with saliva and mucus, and much of it swallowed. What is a trifling loss of blood to one patient may be very serious to another. The personal factor both of patient and operator is to be considered.

Before leaving this part of the subject, I would like again to draw attention to the fact that two cases of death from tonsillotomy are on record in the thesis of Ricordeau, as occurring in the practice of the French surgeon Broca. He also mentions two other cases as occurring in the practice of Cheselden. It is folly to deny that death may occur from tonsillotomy; it is folly also to dwell on these few cases as any argument in themselves against tonsillotomy, any more than against the use of ether or the dentist's forceps because occasionally some one dies during ether anæsthesia or from hæmorrhage after a tooth-pulling.

Dr. Delavan, at the last meeting of this Section, said that the advocates of the galvano-cautery treatment of tonsils should state more clearly the cases which they select for it, and intimated that more people would then agree with them. If any one will read the papers of our Chairman, Dr. Charles H. Knight, on the subject, or my own more feeble presentations, even with moderate attention, they cannot fail to see that we have never, from the first, advocated its use in children where the cutting operation could be used. On reviewing these statements, I cannot see how, without brass bands and flaming transparencies, they can be made more emphatic or how the English language can make their meaning clearer.

I will not repeat the rules which our Chairman has laid down for the use of the galvano-cautery, with which I am in thorough accord, but I think it wise to go a little further and exclude the cutting operation in all patients past eighteen years of age. This conviction arises, not so much from the evidence of the somewhat battered statistics just mentioned, as from the common experience of others and from our knowledge of tonsillar pathology. (I myself have never seen a case of excessive tonsillar hæmorrhage.)

It is impossible to tell by feeling or by inspection in an adult case what the vascular condition of a tonsil is at the plane through which the incision is to pass. Parenchymatous oozing is more frequently the form of hæmorrhage than the spouting of blood from an arterial twig. The fibrous tissue of an old tonsil is more often found in the deep layers than near the surface. Deep down, also, is where the arterial twigs are found. The surface is, therefore, not a safe criterion of the deeper tissue.

Galvano-cauterization is the most commonly employed alternative to the cutting operation. The use of the cautery point should be reserved for those tonsils around which the loop of the cautery snare or of the galvano-cautery tonsillotome cannot be adjusted; but I do not understand the statement made by many, that it takes from thirty to fifty sittings to reduce large tonsils by ignipuncture. Seven to ten is the usual number in my experience, while the largest and most refractory tonsils I have ever seen were reduced in fifteen sittings. The production of pain at the time of the operation, as well as subsequently, can nearly always be entirely avoided by the use of cocaine, and by being careful to confine the cauterization entirely to the lymphoid tissue. The same care and precaution will, I believe, largely prevent the formation of annoying cicatrices. The spiral-wound porcelain buttons for sale in the shops, it seems to me, should never be used, either in the throat or nose; they are clumsy articles, and from their size are sure to produce not only pain but must leave behind bad cicatrices. The slender cautery point should alone be used for this work, I believe. It is unnecessary to speak further of the technique of cauterization of the tonsils, although there are, of course, many other points than those here mentioned to keep in mind. One who has not devoted special attention to throat work, we know, has no business to poke around in a patient's pharynx with a hot platinum point.

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[1] A paper read to reopen discussion of the subject before the Laryngological Section of the New York Academy of Medicine, March 23, 1892.

Abscesses and diphtheria as mentioned by some speakers, I have never seen, though I am willing to admit their occasional occurrence after the cauterization of tonsils, as well as after tonsillotomy. Astringent or antiseptic gargles should always be prescribed after each cauterization or tonsillotomy, not so much for astringency or antisepsis as for pharyngeal gymnastic exercise.

The cold snare, electrolysis, caustics, incisions, and other substitutes for the cutting operation other than the cautery, I leave to the consideration of those who have had more experience with them than I.

In a child of eight or ten years of age, two symmetrically-rounded tonsils, free of the faucial pillars jutting into the oral pharynx, presents to the young laryngologist a temptation only second to that of a rosy-cheeked, juicy apple in a neighbor's orchard to the enterprising small boy. Those tonsils are usually sliced off in a way that delights the heart of the operator and fills the child's mother with wonder and admiration. The after-effects are as brilliant and satisfactory as the operation itself.

Quite a different affair are those flat, ragged tonsils which project but little or none at all beyond the somewhat bulging anterior pillars. Their area is extensive. Their edges slope off gradually and join with the general lymphoid infiltration of the surrounding mucous membrane, angry, red, and covered with slimy mucus. This condition is certainly seen almost daily by most of us, both in children and adults, and I am sure that there are many beside myself who want to know how this condition of affairs is to be remedied by any cutting operation. I hope, more for the sake of information than of argument, that this question will be answered by those who never use the galvano-cautery in the throat. In children ignipuncture is almost attended with the greatest difficulty in these cases. A great amount of improvement can often be attained by removing the lymphoid hypertrophies from the post-nasal space where they are present. These cases are the ones, *par excellence*, in which we have to thank Dr. Bosworth for the introduction of his very useful and suggestive term "Lymphatism," where syrup of the iodide of iron in large doses is of great value.

Another question occurs to me. We are told by many that, when the tonsil is fast to the faucial pillars, we are to separate it by means of the blunt hook before tonsillotomy. In a certain very moderate proportion of cases, this can be done, where the adhesions are recent and easily broken up. In a much larger proportion of cases there is cohesion, not adhesion, to the faucial pillars. The lymphoid tissue making up the tonsil is continuous with the hypertrophied lymphoid elements in the surrounding mucous membrane. So intimately are they blended that it is impossible, without a microscopic section, to tell where tonsil leaves off and faucial pillar begins.

Again, for information, I would like to ask if there are any so skilful that they can separate these structures in the living subject, one from another, with a blunt hook? I am perfectly ready to acknowledge that I am not able to do it, and am equally frank in saying I have never seen it done. To cut off the projecting portions and subsequently to trim down to a proper shape the distorted fauces with a galvano-cautery point, is the best I can do.

Dr. C. H. Knight has quoted Dr. Ingalls as very graphically saying that a child suffers about as much in anticipation of a tonsillotomy as an adult in anticipation of a hanging, and urges the use of anæsthesia in children. Those who remember, and nearly every one with the right kind of heart does remember, the piteous look of terror on the little patient's face when he looks upon the gleaming steel of the guillotine, will be disposed to agree with him. On the other hand, the picture of the little victim about to be smothered with an ether cone, the terror and the struggles nearly always induced by this procedure, will also appeal to the soft-hearted operator. I am sure, as far as I am personally concerned, that the memory of one picture is just as vivid as the other. It takes just as much force to put the child under ether as it does to hold it for tonsillotomy. The struggle with ether is prolonged. The struggle in a tonsillotomy is short, sharp and decisive. Of course, I am speaking of children who do struggle in each case. There are children who take ether as calmly as they do their milk, — very few. There are children who open their mouths and never make a sound while their tonsils are being cut off, — not a few. I recently operated on a little six-year-old boy, before a class of medical students, who walked to the slaughter and conducted himself on the scaffold with all the *sang froid* of a Stafford or a Vane. A strong, firm assistant is, however, usually necessary. Occasionally a little tartar is caught, an infant John L. Sullivan, whose squirmings are entirely beyond control. The gentle-hearted operator will have to strap that youngster down to the table while the ether is being forced by artificial respiration into his lungs.

In other words, the choice between the two struggles usually simply comes down to the point of the most successful issue. In such a case etherization is easier than the tonsillotomy without it. As to the operation itself, certainly every one who has had experience with both methods must admit that with anæsthesia the difficulties are greatly increased. The illumination of the pharynx becomes a matter of some difficulty. The tongue has to be controlled. It falls back into the pharynx or up against the roof of the mouth unless the patient is put in the upright position. The greatest difficulty, however, is in engaging the tonsils in the loop of the tonsillotome.

Without anæsthesia, the "gagging" of the patient throws the mass toward the middle line and the pillars of the fauces are retracted from the tonsil back to their line of attachment. Not so in the unconscious patient. Even in primary anæsthesia the muscles of the fauces and the external muscles of the neck are relaxed, and the tonsil which formerly projected beyond the pillars may and often does sink back between them. Pushing them inward by the hand at the angle of the jaw also pushes inward the pillars and the subjacent structures with them. The difficulty, of course, is very greatly increased where there is firm adhesion of fauces to the tonsil.

Hæmorrhage is always more profuse. In fact the only instance in which I have ever seen anything approaching even to profuse hæmorrhage was in an anæsthetized child.

It is often necessary in these cases to also remove the lymphoid tissue from the pharyngeal vault. I think it preferable here to take out the tonsils without ether and wait a few weeks, even months, before proceeding to operate in the naso pharynx. Many a case of moderate post-nasal adenoid will be relieved by the removal of large tonsils, — the lymphoid hypertrophy in the vault will retrograde and give no further trouble. Where the adenoids are well developed, of course a subsequent operation will be necessary. In the double operation the blood from the amputated tonsils will flow into the naso pharynx and considerably embarrass operative procedures there. While it is frequently necessary, from reasons of expediency, to do everything at one operation under ether, I do not believe that this is, in the majority of cases, the procedure of choice.

If I have been a little emphatic in laying down personal views, it is done only in the desire of being contradicted and of thus exciting discussion. I trust others, having experience, will say something of the methods of controlling tonsillar hæmorrhage, and bring out more fully these matters of detail.

Reports of Societies.

AMERICAN PEDIATRIC SOCIETY.

The Fourth Annual Meeting was held in Boston, May 2, 3 and 4, 1892.

FIRST DAY, MONDAY. — FIRST (AFTERNOON) SESSION,

The President, **Dr. William Osler**, of Baltimore, Md., delivered the annual address, entitled

REMARKS ON SPECIALISM.[1]

Dr. Augustus Caillé, of New York, then read a paper on

EXPERIMENTS AS TO THE VALUE OF NASCENT OZONE IN CERTAIN FORMS OF DISEASES OF CHILDREN, WITH DEMONSTRATION OF AN EFFICIENT GENERATOR.

Dr. Caillé had tested nascent ozone in the treatment of three cases of incipient phthisis, three of chlorosis in children and five of pertussis. He also included in his report three cases of pertussis and eight of chlorosis and anæmia treated with nascent ozone by other physicians. These inhalations were given by means of the apparatus of Labbé and Oudin. There were usually three inhalations daily, lasting about fifteen minutes. The conclusions thus far reached were as follows: That inhalations of ozone, by means of Labbé and Oudin's apparatus, had not been followed by noticeable ill effects; that daily inhalations of ozone increased the quantity of oxyhæmoglobin in the blood from one per cent. to four per cent. in a short time, and this increase remained stationary for some time; that in three typical cases of limited apex tuberculosis a local improvement was not obtained by inhalations; that in pertussis ozone inhalations had a very marked curative effect as regards the duration and severity of the disease; that in chlorosis and anæmia ozone inhalations were exceedingly valuable from a therapeutic standpoint, and gave better and prompter results than any other form of medication known to the writer; that atmospheric disinfection was readily secured by means of the apparatus, making this of value in the treatment of scarlet fever, etc.

Dr. Caillé, in reply to questions, stated that in the cases of pertussis the treatment was instituted after the attacks had become frequent, and that the effect on the attacks was marked and immediate. He had not treated a case of pernicious anæmia in this way, but thought it would be of value in such cases. The examinations of the blood in the cases treated had been only with reference to the amount of oxyhæmoglobin.

Dr. T. M. Rotch, of Boston, thought this might prove a great advance in the treatment of cases of advanced anæmia which were so fatal in children. It was possible that some of the cases reported were on the verge of being pernicious anæmia, and had been cured.

Dr. Caillé, in answer to a question as to the immediate effect of these inhalations, said he had observed that the heart was slower and that the pulse was strong.

Dr. Fisher, of New York, asked whether, in the cases of anæmia, the sputum had been examined for bacilli, and whether some of these might not be tuberculous.

Dr. Caillé, in reply, stated that no examination had been made in those cases, since there was no cough, and the diagnosis of anæmia seemed clear. He thought the patients with incipient phthisis who were in good hygienic surroundings and circumstances furnished a fair test of the efficacy of the treatment in such cases, and in these no local improvement resulted.

MANIFESTATIONS OF LA GRIPPE IN CHILDREN,

by **Charles W. Earle**, M.D., Chicago, Ill.

Dr. Earle dwelt especially upon the profound depression and marked effects upon the nervous system produced by la grippe in children in Chicago. The constitutional disturbance was very marked. He had seen more severe cases of diarrhœa and vomiting in the middle of the winter, during the epidemic of influenza, than during the middle of the summer during an epidemic of cholera infantum. He believed that as we had found that it was not the bacillus peculiar to diphtheria, but rather the products of that bacillus which produced the diphtheretic paralysis, so we should find that it was the products of the germ peculiar to influenza which produced the nervous manifestations of that disease.

Dr. Rotch, of Boston, said his experience in a large number of cases of grippe in children had differed from that of Dr. Earle. It seemed that the disease must have appeared in the West in a much severer form than in the East. The cases in children had been much milder than in adults. He had not seen fatal cases of uncomplicated grippe. It was being more and more acknowledged that grippe was a nervous disease affecting the sympathetic rather than the central nervous system.

Dr. Jacobi, of New York, could not find that the symptoms of grippe in children were much different from those in the adult. If we distinguished three forms, namely, respiratory, nervous and gastric, the symptoms were principally respiratory or nervous, the nervous often very severe.

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[1] See page 457 of the Journal.

Dr. Caillé called attention to a peculiar cough resembling whooping-cough, which he had noted in a number of his cases. This cough lasted for two or three weeks in some instances, and did not get well without local treatment.

Dr. L. Emmett Holt, of New York, said the cases he had seen had not been of the severe type described by Dr. Earle. In the New York Infant Asylum during the epidemic of two years ago scarcely any of the small children were affected. During the epidemic of last year, however, a large number between the ages of one and two were affected. There had also been a severe epidemic of pneumonia in which about two-thirds of the cases were fatal. In many of the cases there were none of the ordinary symptoms of influenza before the pneumonic attack. Whether this was to be looked upon as an epidemic of influenza with pneumonic complication, he was unable to say. It looked, however, as if the two had some relation to each other.

Dr. S. S. Adams, of Washington, thought the epidemic had materially changed in many of its characters in young children in the past three years. He believed climatic conditions and locality influenced the type of the disease. Some of the cases had presented a peculiar rash or general erythema together with high temperature and the symptoms which usually accompany high temperature, so that at first the diagnosis of scarlet fever would be suggested. Many of the cases also were accompanied by so marked pulmonary congestion as frequently, in his judgment, to be mistaken for pnemonia. There might be bronchial breathing, slight dulness, high temperature, with decided initial symptoms, making it in the beginning a difficult matter to differentiate from pnemonia. In many of the cases in the last epidemic there had been decided symptoms of rheumatism, so that for a time the diagnosis was in doubt.

Dr. Blackader, of Montreal, said that in Montreal there had been more cases of grippe in children in the last epidemic than in the previous one. The epidemic had been of a mild character, there being no deaths so far as he had seen in uncomplicated cases. He had observed the reflex cough to which Dr. Caillé had called attention.

Dr. W. D. Booker, of Baltimore, had seen one case in which this peculiar reflex cough led to the diagnosis of whooping-cough on the part of the parents. The cough lasted two weeks, and was relieved by irrigations with boracic acid.

Dr. T. M. Rotch, of Boston, stated that he had observed this cough in some of his cases, and at first supposed it to be whooping-cough. He had also noted the rash to which Dr. Adams had referred.

Dr. Earle, in closing the discussion, spoke of the cases in which, at first, one apparently had to deal with a commencing pneumonia, but in which, after a few hours, all the signs of localized inflammation had disappeared and there existed an extensive bronchial catarrh.

Dr. C. P. Putnam gave an account of an

EPIDEMIC OF ALOPECIA AREATA IN AN ORPHAN ASYLUM FOR GIRLS DURING THE YEAR 1891.

One girl had been attacked in January and another in March; and a little before the first of June sixty-one suddenly broke out with disease. The whole number of pupils in the school was sixty-nine, the ages ranging from three to fourteen years. Six girls being found free from the disease at the end of June, were sent into the country to board, and they never showed any signs of the affection. The matrons and also four older girls who acted as assistant matrons, also escaped, though they were at times closely associated with the children.

The cases had been seen frequently by Dr. J. T. Bowen. Dr. Bowen and Dr. Putnam had also repeatedly examined the hair without finding any micro-organisms. The hair-roots were found to be atrophied and the hairs more slender than usual.

All the heads were shingled, and corrosive sublimate was applied to each daily. Thirty girls were divided into five classes, and treated with as many different preparations, namely; in addition to the regular washing with corrosive sublimate solution, six had the spots dabbed with corrosive sublimate, two grains to the ounce; six were painted frequently with tincture of cantharides; six had thorough inunctions with sulphur ointment; six with cantharidal ointment; six with turpentine.

About the middle of July a general stand-still, and soon after a general improvement, was noticed, and this has gone on gradually, until at present no signs of the disease can be seen except by careful observation, when it is noticed that there are a few bare spots on the heads, and also that the hair grows sparsely over the affected spots, while some of the bald patches are entirely covered in.

The treatment seemed to have no particular effect. The cases in each class appeared to improve at about the same rate as in all the other classes.

Dr. J. T. Bowen, of Boston, had examined the whole sixty-three children on two occasions, and was positive that ring-worm was not to be considered. It seemed to him impossible clinically to separate these cases from the ordinary alopecia areata. The only point of difference he could detect was that there were more of these very small spots. He had no hesitation in including this epidemic in the class of cases described by the French writers as alopecia areata in schools, camps, etc. So far as he knew, such epidemics had not been described in America.

Dr. J. C. White of Boston, had seen several of the cases. So far as surface appearances went, he thought they did not differ from ordinary cases of alopecia areata; but to his mind the spots were more irregular, more angular than ordinarily seen in alopecia areata. The spots were far more numerous than ordinarily, and the development of the disease was far more rapid than he had ever seen in cases of alopecia areata. If we studied the pathology of the disease and the history of these so-called epidemic instances, it seemed to him that we might be dealing with a disease which was not alike in all cases. He did not see how it was possible to explain these cases, and cases like these without the acceptance of the theory that it was a germ disease. He was not prepared to say he considered this a case of typical alopecia areata becoming epidemic or showing itself to be contagious, but we might very well be dealing with one of those rare instances of germ disease characterized by the ordinary surface appearance of alopecia areata, but by a difference in the gross appearances of the disease; and therefore he thought this would show that there was more than one disease characterized by alopecia in areas, and he considered this as a probable example of that much rarer affection, and different from ordinary alopecia in such respects.

SECOND DAY. — MORNING SESSION.

Dr. A. Jacobi, of New York, showed

SPECIMENS FROM A CASE OF HYDRORRHACHIS AND HYDROCEPHALUS.

Dr. Henry Koplik, New York, read a paper entitled,

FORMS OF DIPHTHERIA WHICH SIMULATE SIMPLE ANGINA.

He said: Since the specificity of the Klebs-Lœffler bacillus has become more an accepted fact by all clinicians, the clinical study of diphtheria has presented many new and hitherto unexpected difficulties. A careful study of the question does not seem to substantiate the supposition at first entertained that the specific nature and virulence of this peculiar micro-organism once established, the clinical aspects of diphtheria would become much simplified. We are now recognizing the condition, diphtheria a membrane, and diphtheria the disease. The presence of a membrane does not by any means complete the diagnosis of a case of throat disease. In a series of studies upon diphtheria of the tonsils, pharynx, and larynx begun in the early part of this year, and conducted in the Carnegie Laboratory, he was impressed by certain facts from a clinical standpoint. Among other things, he directed his attention to an immense number of cases which are of daily occurrence, the so-called doubtful cases. His studies include an analysis of thirty-four such cases. In many of these cases physicians differed in opinion. These cases included, first, those in which a careful inspection of the throat revealed no membrane or even specks of membrane. Again, other cases presented a mere speck of membrane upon one tonsil, which could not be distinguished in appearance from a follicular crypt or lacuna. In other cases there was the typical appearance of follicular tonsillitis in one tonsil. In all of the cases, the membrane, exudate, or secretions were removed from the tonsil, soft palate, or posterior pharyngeal wall by means of a very small, thin, sterilized scoop, such as is used in ear work. This was then passed over the surface of one or more tubes of Lœffler blood-serum and bouillon mixture. Pure culture of the Lœffler bacillus were obtained, first by the dilution methods of Lœffler, and then upon agar plates. The pure culture was studied in the regular way upon various substances, — agar, glycerine-agar, bouillon, gelatine and potato. The first series of cases begin suddenly with symptoms of laryngeal involvement. The patients may have suffered a few days or a week from an amygdallitis which has been diagnosticated and treated as benign. Suddenly new symptoms appear in the form of stridulous cough and breathing and temperature, completing a picture of laryngeal disease. In some cases, even when the laryngeal complications appear, a careful daily examination of the throat fails to reveal any membrane, and even in the whole course of the case no visible membrane appears, and the patient recovers. In this absence of membrane and recovery lies the danger of the disease, and its power to harm others by disarming suspicion and rather concealing the true diphtheritic nature of the affection. Again, another series of cases are those which we may treat for days as simple amygdallitis, daily inspection failing to show any membrane. Suddenly a croupy cough appears, also stridulous breathing, then upon looking into the mouth one or two very small specks of membrane just forming on the tonsil are seen. Death may follow with laryngeal stenosis within twenty-four hours. The most puzzling cases are those affections of the tonsils in which, with the ordinary symptoms of swelling of the tonsils, with or without glandular enlargement at the angle of the jaw, we have, as a sole manifestation of diphtheria, a single small speck of varying color on one or the other tonsil. But specks upon the tonsil are deceptive, and the means of diagnosticating them with certainty are found only in the bacteriological method. Some pathologists believe that diphtheria can exist without any membrane.

A paper by J. Lewis Smith, M.D., New York, was read by title.

F. Huber, M.D., of New York, read a paper on

TWO TRACHEAL AND BRONCHIAL CASTS,

and showed specimens.

Ettie L., eight years old; diagnosis, pseudo-membranous croup (diphtheria). With the exception of an occasional mild suffocative attack, the prognosis was satisfactory during the first few days. A few days afterwards, following a severe spell of coughing attended with asphyxia, quite a large piece of membrane was coughed up. The voice now became clear and the dyspnœa was relieved for some hours. A return of hoarseness and stridulous breathing showed that the membrane was being deposited anew. The next morning another and larger piece of membrane was expelled. Later in the day the condition became worse. Intubation was practised. Suddenly severe dyspnœa and other symptoms set in, and the following morning tracheotomy was performed. Almost immediately a larger cast was expelled, followed by a little blood and mucus. Symptoms for a few hours cleared up, but within twenty-four hours patient died.

Dr. Augustus Caillé, New York, recalled a case in an older girl, where tracheotomy was done, followed by the expulsion of a very thick membrane. He thought the casts from Dr. Huber's case very well preserved.

Dr. Fisher, New York, while in Berlin last year, saw and made many experiments with the bacillus of diphtheria. He referred to the difficulty of getting at the throats of young children in order to get a piece of the membrane for bacteriological examination, but considered the bacteriological examination itself a comparatively easy task. He does it at the bedside.

Dr. A. Jacobi, New York, spoke of the difficulty and impossibility of making positive diagnosis in every case, and valued the interesting information given. The bacteriologists, as well as the clinicians, however, have much yet to learn.

(To be continued.)

The Dufferin Fund. — The National Association for supplying Female Medical Aid to the Women of India is now on a sure footing. During 1891 over 466,000 patients were treated. There are forty-eight hospitals controlled more or less completely by this society.

T. C. Allbutt, M.D., F. R. S., has been appointed Regius Professor of Physic in the University of Cambridge (Eng.).

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

Regular Meeting, Monday, February 1, 1892, Dr. C. F. Folsom, Chairman.

Dr. E. S. Wood read a paper entitled,

RENAL ALBUMINURIA NOT DUE TO ORGANIC DISEASE OF THE KIDNEYS.[1]

Dr. F. C. Shattuck: This is a timely and interesting paper, which illustrates the great advance that has been made in our clinical knowledge of renal disease in the past twenty years. As a student, I was taught that albumen and casts in the urine were of fatal import. The more conscientiously we make routine examinations of the urine of every patient who comes to us, the more are we impressed by the slight significance of albumen and casts in many cases. My own attention has been called, within the past few years, to the frequency with which they are found in the urines of those who are past fifty years of age, and who are presumably in, or approaching, the degenerative period of life. I am now engaged in collecting a large number of these cases for analysis with reference to this point, and am not yet prepared to speak finally with regard to it. But experience has led me to expect to find small traces of albumen and hyaline and granular casts, perhaps pretty abundant, in such urines, whether direct or indirect renal symptoms are absent or not. As probable instances of concentrated urine as productive of albumen and casts, I recall two brothers, prominent business men in one of the larger towns of the State, who were solicited to take out life insurance policies to the amount of $100,000. The examiner found albumen and casts, and the offer of insurance was promptly withdrawn. I have seen them both a number of times during the past year, and have been unable to detect any other evidence of disease about either of them. They would, indeed, appear to have an enviable expectation of life. We constantly see well-to-do persons, who can and will take reasonable care of themselves, live for years happy and useful lives, although their hearts or arteries or both are clearly not in their pristine integrity. The same thing obtains with the kidneys, and it is of the utmost importance for our patients that we realize this fact.

Dr. R. H. Fitz: I think it is desirable for Dr. Wood to bring up this subject, particularly from the practical side, so that we shall not be too ready to consider that our patients have any serious disease of the kidney because they have albuminuria and casts. I have been impressed by the frequency with which the record of the sediment of his cases shows the presence of something more than casts, particularly the association of blood with the casts, pointing, it seems to me, distinctly toward a local pathological process in the kidney. We ought to bear particularly in mind the importance of not calling every pathological condition in the kidney Bright's disease where albuminuria and casts are present. This term has led to a great deal of fear on the part of the community. It seems to me highly probable that many of the cases which Dr. Wood has reported are distinctly associated with lesions of the kidney, lesions which are temporary, but destructive, and which will leave alterations in the kidney not sufficient to produce any permanent disturbance of function, but to be found afterwards as evidence of a pre-existing pathological process. I am particularly impressed with this from the anatomical side. It is very common to see scars upon the surface of the kidney and thickenings and destruction of the Malpighian bodies on microscopic examination. Dr. Shattuck says after the age of fifty he expects to find albumen and casts. After the age of fifty I expect to find a kidney showing evidence of what may be called focal destructive changes, and I have in mind an illustration. It was that of a gentleman who recovered from an acute and severe attack of pyelo-nephritis, lived several years, and finally died uræmic. Numerous renal scars were found, and a considerable amount of kidney had been destroyed. It seems to me, with regard to several of these cases which Dr. Wood has presented, that, in connection with albuminuria and casts, there was very likely, at the time of the occurrence, a local pathological process in the kidney. It was evidently not a Bright's disease. It was perhaps an inflammatory disturbance or a necrosis or a degenerative destructive condition, and the patients recovered. In fact, they could hardly be said to have recovered, for, at the time of the occurrence, there were no symptoms of renal disease other than an abnormal urine; at the same time it is not unlikely that there was actual disease of the kidney, very limited and manifested by such signs as Dr. Wood has described, although there were no symptoms of sufficient gravity to lead either the patient or his friends or physician to consider that he was diseased.

Dr. A. T. Cabot: I was very much interested in the paper, since it constantly comes in my way to see cases in which albumen and a few casts, generally hyaline and from the straight tubules, are found, not associated with serious renal disease, and continue to appear intermittently for years, perhaps, without ill consequences. Some years ago I saw, with Dr. Edes, an interesting case of albuminuria in a child. This girl had albumen and casts in the urine, and, owing to some slight frequency and occasional difficulty in urination, Dr. Edes called me to see her in consultation. Under ether we found a narrowing of the urethra at the internal meatus, which yielded readily to large French bougies. The result of dilatation was the entire disappearance of the albumen and casts, and relief to the renal symptoms. I see that same thing constantly in older people; but that was the first case in which I had observed it in a child. The condition of tightness at the neck of the bladder I have seen several times in small boys associated with symptoms that led to examination for stone in the bladder. Apparently the tightness is behind the constrictor muscle at the real neck of the bladder, and the symptoms have in my experience been relieved by the dilatation. I think in those cases probably, judging from this child's case, the urine would show some albumen owing to the obstruction.

Dr. Wood: The case which Dr. Cabot mentions is interesting, and recalls one reported by Dr. Farlow of obstructive suppression of urine due to a morbid growth compressing both ureters. There was a decided trace of albumen in the urine, and casts.

In connection with Dr. Fitz's remarks, I have often wondered how much organic change may be produced in a kidney by a long continued renal irritation. It has always seemed to me that it is very desirable to detect by the examination this renal irritation early, and to remove the cause when possible so to do, whether it was simply concentrated urine or separation of abnormal sediment within the tubules.

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[1] See page 459 of the Journal.

Dr. A. T Cabot showed a specimen of

PAPILLOMA REMOVED FROM THE BLADDER,

and gave the following history:

S. C. W., a strong man of fifty-five, who had always been well, began to notice the appearance of blood in the urine one year ago. The attacks of hæmaturia became gradually more and more severe, though with some long intermissions. The final attack began about five weeks before he was seen, and had gradually increased in severity until, at the time when Dr. Cabot saw him, his bladder was partly filled with clots, and the urine contained almost pure blood. There had been examinations of the water made at some considerable time before, but no villi or other evidence of new growth had been discovered. The prostate was not enlarged or tender, and examination with the sound revealed nothing in the way of a calculus in the bladder.

An exploratory incision in the perineum was made, the membranous urethra was opened, and the finger introduced through the prostate into the bladder It at once encountered a large pedunculated growth springing from the trigonum, about the size of a small hen's-egg. This was so friable that it easily broke off before the finger, and presently was loose in the bladder. It was then removed piecemeal through the perineal opening. The base from which the tumor had been detached was not hard, nor indurated, and was thoroughly curetted with a sharp spoon, and a drainage-tube was then introduced. The hæmorrhage was not severe after the operation, and entirely ceased after the second day. The urine came mostly through the perineal opening, and this persisting, on the tenth day a catheter was introduced through the penis for the purpose of diverting the urine, and giving the perineal opening an opportunity to close.

Dr. Whitney gives the following report upon what was removed: "The tumor of the bladder consists of several quite friable papillomatous-looking masses, the bulk of all of which would equal that of a small egg. Sections through these showed under the microscope narrow, fibrous, vascular stalks covered with many layers of large, irregularly-shaped epithelial cells. It could not be determined whether the growth had grown into the deeper layers of the bladder, as there was no place that could really be fixed upon as the base."

The diagnosis was papilloma, as far as could be made out. The feeling of the base, as above described, would certainly lead to no suspicion of malignancy, and Dr. Cabot reported the case as one of simple papilloma.

Dr. Wood: I should like to ask if he had bladder symptoms besides hæmorrhage.

Dr. Cabot: He had no symptoms but the hæmaturia, which did not annoy him much, and that had only been considerable for five weeks when I saw him.

The new Russian Pharmacopœia has recently been issued. Compared with the preceding, it contains a smaller number of articles, 318 having been discarded, while only 100 new ones have been added. The total number of articles is 808.

Recent Literature.

Handbook of Materia Medica, Pharmacy and Therapeutics. Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Extemporaneous Pharmacy and Minute Directions for Prescription-Writing. By Samuel O. L. Potter, M.A., M.D., Professor of Theory and Practice of Medicine in the Cooper Medical College of San Francisco; author of "Quiz Compends." Late Acting Assistant Surgeon, U. S. A. Philadelphia: P. Blakiston, Son & Co.

Into this book the author has succeeded in putting a surprising amount of information in a very accessible form.

Under Materia Medica and Therapeutics, which occupies about one-half of the work, the drugs are arranged in alphabetical order. This allows the reader to find readily any desired title; and in this he is facilitated by the use of large type for the headings. Under each remedy there is succinctly given an outline of its sources, its properties, its preparations and a few lines descriptive of other compounds of a similar nature. The physiological action is then considered, and finally the uses. These are all treated without elaboration; but, so far as one may judge from examples taken at random, in a suggestive manner, useful to practitioners and students who have gained a more detailed knowledge from fuller works on therapeutics, and who need to refresh their memories by such an outline as is here given.

Under "Sulphate of Magnesium," the statement that its "purgative action is chiefly due to increase of the intestinal fluids by an outward osmasis from the vessels and not from increase of the secretions of the glandular appendages," is open to question in the light of Matthew Hay's investigation.

The author takes the ground that no really scientific classification of medicinal agents is possible, and he only attempts to group the medicines after each one has been studied singly. Among these groups are a few not usually found in works on therapeutics, which will commend themselves to some practitioners, such as alkalinizers of the urine and acidifiers of the urine.

Part II, on "Pharmacy and Prescription-Writing" is an excellent outline of these subjects, and adapted to the needs of students. The use of triturates, a kind of preparation used a century or more ago, is recommended.

Part III includes special therapeutics, and is an attempt to suggest the treatment in various diseases. The synopsis of treatment is serviceable, though, of course, open to criticism. For example, under cancer, is given the following:

℞ Acidi Arseniosi . . . . . . ℥ii
Mucil. Acaciæ . . . . . . ℥i

As a paste on a cancerous sore followed after two or three days by bread poultices until slough separates.

No caution about the risk of arsenical poisoning from absorption is given.

The Appendix includes a list of Latin words used in prescriptions, with their contractions and corresponding English equivalents; hypodermic formulæ; treatment of poisoning; table of differential diagnosis; the examination of the urine; tables of specific gravity; and other convenient information.

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CHLOROFORM *VS.* ETHER ONCE AGAIN.

War wages still between the advocates of chloroform and ether abroad. The *Dublin Journal of Medical Sciences* for April has begun to publish a review of the Hyderabad Chloroform Commission's report — which appeared in the *Lancet* at least two years ago — and Surgeon-Major Lawrie is severely criticised for attempting to formulate the status of the ether-chloroform question in America. Dr. Lawrie says that ether is preferred by the majority of American surgeons on account of the prevailing opinion that it is safer; in return for this he is fairly scorched by the reviewer, who goes so far as to recall our late civil war and waves the bloody shirts of our Southern brothers. And all this, forsooth, to strike terror into the heart of a surgeon of Her Majesty's Army in India who believes in the chloroform as firmly as does the reviewer himself.

The following quotation explains itself:

"Like many others, Dr. Lawrie confounds the New England States with the United States. In so doing, he reminds us of those politicians who in describing Ireland leave out Ulster. The New England States are not the United States, neither is their opinion the American opinion. The men who raised American surgery to its present high standard were Southerners, men of the cotton States; and when the States's-rights War occurred, the Confederate surgeons exhibited a skill and resourcefulness, and produced better results, than (*sic*) up to that time any military surgeons ever recorded; and this was done amidst the greatest difficulties. The men who have this splendid record to their credit without exception are chloroformists. Two of the most distinguished of these Southern surgeons have expressed their views in no uncertain manner on the chloroform questions, as may be seen by reference to Mr. Foy's book, 'Anæsthetics, Ancient and Modern.'

"That the Eastern States advocate ether in season and out of season, and that they are intolerant of any difference of opinion, is notorious; but, nevertheless, the United States refuses to be dominated by a noisy, didactic faction, and with the majority of American surgeons chloroform continues to be the favorite anæsthetic."

It is just possible that Dr. Lawrie may be right after all about the majority of American surgeons. It is hoped that the reports of careful investigations of all deaths under anæsthesia will soon show where the majority is in this country. At all events we are glad that our Southern medical brethren come in for a share of praise. The warriors of the old world have learned many things from us during the late war, and not least among these things was the improved organization of army medical work in the North as well as the South.

It is a pity that so much unnecessary warmth is exhibited whenever the respective merits of the two anæsthetics are discussed in the medical journals. A little cool discrimination and candid impartiality would be more apt to lead to statistics of some real value, both scientifically and to the world at large.

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THE VEGETARIAN'S HEART *VS.* THE MEAT-EATER'S HEART.

In the *Nineteenth Century* for April, 1892, Lady Paget, writing on the subject of vegetarianism and in its defence, gives the following among several arguments: "While the meat-eater's heart has seventy-two beats in the minute, the vegetarian's has only fifty-eight, therefore 20,000 beats less in the twenty-four hours."

Without waiting for proof of the above statement — which may not be easily obtained — or insisting on the well-known fact that there is great variability in the frequency of the pulse even among meat-eaters, some carnivorous men and women having habitually a pulse below fifty-eight, we might provisionally assume the writer to be correct. What then? A pulse of fifty-eight is not necessarily a strong pulse; does not necessarily imply a vigorous heart. A heart that beats seventy-two times or eighty times a minute may be a stronger and sounder heart than one that beats fifty-eight times, and may retain its vigor much longer.

If Lady Paget's vegetable-eater will still farther reduce his heart-beats, by taking a recumbent instead of maintaining a sitting or a standing posture, he will find that his pulse will fall still lower — to fifty, or even forty-eight! To be consistent, then, with the principle suggested by this inductive inquiry, *he should keep his bed all the time*, for by so doing he will spare his heart 480 beats an hour, or 11,520 beats in the twenty-four hours! If he gets up to take exercise he at once increases his heart's beatings by imposing more work on that organ. If he eats a hearty meal, even of vegetables and cereals, he again compels his heart to quicken its pulsations by several more beats per minute during eating and during active digestion. He must also avoid all mental excitement, as this accelerates the pulse, and increases the work of the heart.

The question is, of course, not broached in the aforesaid article — though necessary to a scientific inquiry — whether the heart of the meat-eater may not be stronger and better fitted for its tasks by virtue of a diet which is largely animalized. A well-nourished heart will be more competent than one that is ill-nourished to perform its really very important part in furthering the conditions of successful living, but this is a truth that is so trite that we need not dwell upon it longer. The data for an intelligent appreciasion of the subject are not lacking, and it is quite possible to determine with much scientific exactness by an appeal to physiological truths and to common experience — national and individual, due allowance being always made for exceptions — what kind of diet is best for nations, for climates, and for individual conditions. Unfortunately for the vegetarian, he is too blinded by bias and prejudice to see aught but a partial and fragmentary side of the question.

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THE ALMY MURDER TRIAL.

IMPARTIAL MEDICAL EXPERT TESTIMONY.

THE proceedings in connection with the reopening of the Almy murder last week, at Plymouth, N. H., on the motion of the prosecution, offered two interesting medico-legal features. The medical evidence on the part of the State show that, in New Hampshire, there is need, in the conduct of medical examinations in cases of death by violence, of some system like that of which we have the benefit in Massachusetts. The other incident illustrated the feasibility of an innovation, long desired by physicians, by which medical experts may appear in court without being discredited, justly or unjustly, as partisans. One of the experts in this case before he answered any questions, asked and received permission to read the following:

GRAFTON SS. SUPREME COURT,
November Term, 1891, April 25, 1892.

STATE *v.* FRANK C. ALMY.

By agreement of the parties, it is ordered by the court that Dr. Frank W. Draper, Professor of Legal Medicine in the Medical School of Harvard University, be called to testify as an impartial expert. [Signed], C. DOE, C. J.

The questions that followed were asked by the court and by counsel, thus establishing the independent attitude of the witness and relieving him from all temptation to indulge in partisanship at the expense of candor. The precedent is clearly an important one, and has an obvious value for future use in similar cases.

The result of the trial, in the reaffirmation of the proven guilt of the accused, is thoroughly acceptable to all who are familiar with the evidence in this cowardly and lustful homicide.

THE PASTEUR INSTITUTE, PARIS. — Since the 1st of January, 1886, over 11,000 people have been treated for rabies; and of these only 98 or 0.88% have died.

MEDICAL NOTES.

CHOLERA is announced to be spreading in the Punjab. Many fresh cases have appeared since the return of the pilgrims from Hurdwar, where they were disbanded owing to a virulent outbreak of the disease.

LADIES' DRESSES AND CONTAGION. — The medical press in different parts of the world appears to have begun a crusade against the recent fashion of long skirts. This stirrer of dust and carrier of infection is supposed to be especially dangerous as a distributor of a tubercle bacillus.

VIRGINIA MEDICAL LAW. — Our note of April 14th, that the Supreme Court of Virginia have decided that the Medical Law of the State was unconstitutional, was founded on an erroneous communication from Richmond. We have since been informed that the decision in the case referred to did not deny the constitutionality of that law.

MORTALITY OF NEW YORK STATE FOR THE FIRST QUARTER OF 1892. — During the first three months of the present year there were 35,193 deaths in the State. According to the estimate of the State Board of Health, the last epidemic of influenza beginning in December has already caused about 10,000 deaths, or one in each six hundred of the population.

MRS. OSBORNE'S RELEASE. — The Home Secretary has pardoned Mrs. Osborne, who is serving a sentence of nine months' imprisonment in England. Much has appeared in English papers concerning her state of health and her responsibility for her crime. Being pregnant, it was urged that her imprisonment was dangerous both for her and her future child, and this view appears to have been finally taken by the Home Secretary.

TUBERCULIN IN LEPROSY. — The *Lancet*, in a leading article, refers to forty-five cases of leprosy treated by tuberculin in different parts of the world and hitherto published. While some patients have shown improvement that has not been proved to be permanent, and in some was certainly only temporary, the benefit is too uncertain, too limited in character and time, and purchased at too great a risk of aggravation of the disease by the dissemination of new foci, for it to be recommended as a treatment for leprosy.

MEDICAL LEGISLATION IN OHIO. — The late Ohio legislature appears to distinguish itself by its bad medical legislation. A very moderate medical practice bill was before it, but the opposition of itinerant doctors and other medical monstrosities was so great that the bill was defeated "amid roars of laughter." On the other hand, it appropriated $5,000 to test the efficacy of the Keeley cure. Each member is to have the privilege of sending one patient to be cured (or of going himself). As an offset to this they passed a law that any physician may ride on any freight train, at his own risk by paying the full passenger fare.

A LAW TO SUPPRESS TUBERCULOSIS, especially in milch cows, has been signed by the governor of New

York. In general, the law authorizes the health inspectors to examine all the cattle in the State, and, when the disease is found, to cause the animal to be killed. The owner will be reimbursed for the actual value of the cow. The plan of carrying on this inspection has not been decided upon. An appropriation of only $5,000 has been made for the purpose. The diary statistics of the State show that milk production is the largest industry in the State, and that it is greater than that of the milk production of all the other States put together. There are 11,600,000 milch cows in the State. The farmers sell to New York City $11,500,000 worth of milk, and to the people of the whole State $40,000,000 worth.

NEW ENGLAND.

Public Institutions of Boston. — The Mayor has sent to the Board of Aldermen requesting an appropriation to the amount of $287,000.00 for the purpose of enabling the Department of Public Institutions to dispense with the insane hospital at South Boston.

Diphtheria in Dorchester. — A small epidemic of diphtheria has broken out in Dorchester among the pupils of the Atherton School. The first case occurred on April 14th; a little girl spent a whole day in her class while suffering from unsuspected diphtheria. Ten children who sat in the same room with this patient were subsequently affected.

NEW YORK.

Memorial Pavilion to Dr. Abram Du Bois. — The family of the late Dr. Abram Du Bois have announced to the Trustees of the New York Eye and Ear Infirmary their intention of presenting the sum of $80,000 for the erection of a new pavilion as a memorial of Dr. Du Bois, who for nearly fifty years was attending and consulting surgeon to the Institution, and was always one of its most devoted friends and munificent benefactors. The plans for the new buildings of the Infirmary include three pavilions. One of these has already been erected, and in order to remove the old buildings and put up the other two pavilions about $70,000 in addition to the Du Bois gift is required.

The College of Pharmacy. — The sixty-second annual commencement of the College of Pharmacy of the city of New York was held in the Carnegie Music Hall on May 3d. There were 103 graduates, who received their degree from President Samuel W. Fairchild.

Infectious Diseases. — Cases of typhus fever are still continuing to develop occasionally in the city, and on the 5th of May no less than three were discovered. Two of the patients were inmates of tenement-houses where typhus fever cases had previously existed. Vessels are now constantly arriving from Brazilian ports on board which there have been cases of yellow fever during the voyage, or before leaving. Five of the crew of the British steamer *Glengoil*, which reached quarantine on May 3d, died of the disease, and another, believed to be fatally ill with it, was left at the hospital in Rio Janeiro. The steamship *Advance*, which arrived May 4th, had also had yellow fever on board, and the ship's surgeon, Dr. Randle, was sent to the hospital at Para, suffering from the disease. Measles is now more prevalent, it is said, than has been the case for a quarter of a century. During the week ending April 23d there were reported 529 cases, with 23 deaths, and during that ending April 30th, 628 cases, with 25 deaths. Since then the cases have been even more numerous.

Miscellany.

INVESTIGATION OF THE OUTBREAK OF TYPHUS FEVER.

On April 30th the sub-committee of the joint Senate and House Committee on Immigration and Naturalization, examined a number of medical witnesses in regard to the recent outbreak of typhus fever.

Dr. Wm. T. Jenkins testified that the surgeon of the steamship *Massilia* was a capable and careful officer. The Russian Hebrew passengers, he said, were in a starving condition, not owing to the negligence of the steamship company, but because they refused all food other than that prepared by their own rabbi. He expressed the opinion that his own legal responsibility ceased after the passengers of any vessels passed examination at quarantine. He described the method of quarantining four patients who were discovered in the city, and stated that the Health Department of New York had been successful in practically stamping out the typhus outbreak.

Dr. Cyrus Edson, Sanitary Superintendent, was next examined, and in reply to a question from the Chairman of the Committee, Mr. Chandler, as to whether a ship at sea was a likely place for the development of typhus fever, described the conditions which were peculiarly favorable for such development.

Mr. Chandler then paid a graceful compliment to the New York Board of Contagious Diseases, saying, "Dr. Edson, all the senators and members of the House are impressed with the manner in which the disease was handled. I speak for them all, or I should not speak at all."

Dr. H. I. Biggs, one of the pathologists to the Health Department, was examined with a view of ascertaining from him as an expert, the possibilities and probabilities of infection and the mode of development and spread of typhus. His opinion in regard to the *Massilia* outbreak was that the disease had developed in the baggage or that otherwise its spread would have been greater. He, too, expressed the opinion that the conditions on board the vessel afforded ample scope for the development of typhus. He had little faith, he said, in the method of fumigating vessels.

The agent of the Fabre Line, to which the *Massilia* belongs, was requested to notify the Committee immediately on the next arrival of that steamer, in order that the captain and surgeon might be summoned before them for examination.

THE REFORM OF GERMAN ANATOMICAL NOMENCLATURE.[1]

Prof. Wilhelm Krause, who has resigned his professorship at Göttingen, is coming to Berlin to create a uniform anatomical nomenclature. He has undertaken this task at the instance of the Anatomical Society, which has busied itself for five years past with the question, How is the confusion in anatomical nomenclature to be remedied? This question was thoroughly discussed at the third assembly of that Society in 1889. Professor His of Leipsic showed on that occasion how the present multiform anatomical nomenclature had arisen, and how it could be simplified. It was determined that, in the creation of a new nomenclature, regard must be paid not only to descriptive, but also to general and comparative anatomy and to embryology, and that the reform must be based on a complete list of the technical expressions of anatomy, in which all the changes of meaning which each expression has undergone are stated. It was further decided that all that is good in the present nomenclature should be retained, and that expressions containing proper names should not be dropped. Professor His uttered a warning against going too far in the Germanization of words derived from the Greek and Latin, on the ground that such a change would render mutual understanding between German and foreign anatomists more difficult. A committee was appointed to arrange for and superintend the work, and it was resolved that the work itself should be entrusted to an anatomist of reputation. The members of the committee elected in 1889 are Kölliker, Oskar Hartwig, His, Kollmann, Merkel, Schwalbe, Toldt, Waldeyer, and Karl Bardeleben; and their number was augmented in following year by the election of Cunningham of Dublin, Leboucq of Ghent, and Romiti of Pisa, in order that due regard may be paid to the necessities of foreign anatomists. The work was entrusted to Professor Wilhelm Krause, who will have to devote several years to it. The expenses will be defrayed by the Anatomical Society and the Universities of Berlin, Vienna, Munich and Leipsic.

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MYXŒDEMA WITH INSANITY TREATED BY INJECTION WITH EXTRACT OF THYROID GLAND.

Dr. Ernest C. Carter of the Lancashire County Asylum reports (*British Medical Journal*) one case treated in this way apparently with great benefit. The patient had been an inmate of the asylum for four years. Undoubtedly the amelioration of bodily condition was much more distinct than that of the mental; for while one could not well say that there were any obvious morbid physical conditions after the course of treatment, and certainly none characteristic of myxœdema, the patient's intellectual powers remained in a degree impaired. She was still partially demented, with a tendency to emotionalism. The injections were stopped on account of failure in the supply of fresh thyroids, or possibly a further improvement might have taken place; but the long establishment of mental symptoms makes it more than probable the irreparable degenerations have taken place in the cells of the brain cortex. Nevertheless the rapid progress of improvement in the bodily and mental condition of this patient is strongly corroborative testimony to the value of this method of treatment.

Regarding the method of preparing and administering the extract, Dr. Carter says: "At the outset I followed strictly the procedure detailed by Dr. Murray, but, subsequently, with the object of getting the strongest possible dose of the active principle in a bulk not inconveniently large for injection, I modified the steps, and the method ultimately arrived at was as follows: The gland having been cleared of fat and fibrous tissue, a portion, as large as a damson, was cut up, put into a mortar with some glass (for example, a broken test tube), about half a drachm of glycerine and a drop or two of five per cent. of carbolic acid solution, and the whole ground together to a fine paste. The latter was allowed to settle in a test tube for twenty-four hours, leaving a clear, dark-red extract at the top, which was decanted off, and filtered through linen to insure freedom from glass particles. The extract was made fresh every week, strict antiseptic precautions being observed with regard to all utensils, etc., used, which were cleansed by means of boiling or washing with carbolic lotion, and a drachm of it was given every week in divided doses.

It seemed useless to pretend to any accurate dosage, and my efforts were directed, as above described, to procuring the strongest extract that could be conveniently used for injection. The site of the latter was on alternate sides, between the shoulder-blades, and an ordinary hypodermic syringe employed.

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CREDÉ.

Carl Siegmund Franz Credé, whose death was recorded in the Journal of March 31st, was born at Berlin in 1819, and received his medical education at Berlin and Heidelberg. In 1843 he was made assistant to Busch, who was then at the head of the obstetric clinic at Berlin. He remained in this position until 1848. In 1850 he became a *Privat-docent.* His work, at this time, was put in a permanent form and published in two volumes under the title of *Klinische Vorträge über Geburtshülfe.*

In 1852 Credé was appointed director of the Berlin School for Midwives and the lying-in department of the Charité; with this he combined a gynecology clinic, which he himself started. Gynecology at that time was little more than a name, and a gynecological clinic was a novelty, not only in Berlin, but in Germany. From this time he began to teach the method of managing the third stage of labor, which is, in German obstetric literature, identified with his name. His method was modified by others, and changes introduced which were not improvements, and which were sometimes erroneously associated with Credé's name; but the directions which he gave at the beginning of his career were those which he taught at the end, and which are now recognized as being sound and safe practice.

In 1853 he began to be associated with Busch, Ritgen and Siebold in the editorship of the *Monatsschrift für Geburtskunde und Frauenkrankheiten.* In this occupation he continued until his last illness. The *Monatsschrift* ceased to appear, the *Archiv für Gynäkologie* taking its place, but Credé remained at the head of the new as of the old journal, greatly to the advantage of both, for nearly thirty-nine years.

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[1] Lancet, Berlin Correspondence.

In 1856 he succeeded Jörg in the chair of midwifery at Leipzig. Soon after his settlement in that town he founded the Obstetrical Society there. He established an out-patient department both for obstetrical and gynecological cases, and thus more fully utilized the material which that large city offered for the instruction of students. He held this post till April 1, 1887, when illness obliged him to resign it. His most conspicuous public service was the introduction of his method of preventing ophthalmia neonatorum. This great and solid discovery became known and practised all over Germany, and, indeed, in every civilized country, although in different places changes in detail have been made. Credé had the great satisfaction of knowing, even as soon as ten years after the introduction of this mode of preventing the disease, that in the asylums and other institutions for the blind a distinct diminution in the number of applicants whose blindness dated from their birth was perceived. He strongly advocated the delivery with forceps of the after-coming head.

Credé devoted his best energies to the teaching of midwifery, which he considered his most important duty. He held that those who, as students, had not paid much attention to gynecology, could repair this omission afterwards; but that no one should go forth into practice insufficiently instructed in midwifery. He wrote a text-book on midwifery for midwives, the clear style of which made it very acceptable, and which has gone through five editions. When gynecology took the surgical direction in which it has of late been advancing, Credé began to undertake the major operations; but, as he found himself growing old, he gave them up.[1]

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THERAPEUTIC NOTES.

Guiacol Carbonate. — Seifert and Hölscher[2] have used this preparation in the treatment of tuberculosis, and have obtained better results than with either creosote or guiacol. Beginning with a dose of one-third grain, the amount was increased as high as ninety grains daily, without disturbance of the digestive or nervous system. Carbonate of guiacol is an odorless, tasteless, micro-crystalline powder, insoluble in water, slightly soluble in cold alcohol, and easily soluble in hot alcohol. It is a solid crystalline, chemically pure substance. It is separated into guiacol and carbonic acid in the intestine.

A Refreshing Beverage. — Bamberger[3] suggests the following to quench the thirst of pneumonia patients:

℞ Acidi phosphorici . . . . . ʒ ij.
Syrupi rubi idæi . . . . . ℥ ij. M.
Sig. To be taken in water.

℞ Potassii bitartratis . . . . . ʒ ij.
Syrupi rubi idæi . . . . . ʒ x.
Aquæ . . . . ℥ xij. M.
Sig. Use as a refreshing drink.

Exophthalmic Goitre.— Dressman[4] reports three cases of exophthalmic goitre, which were very much benefited by tying the inferior thyroid arteries. The goitre diminished in size, the exophthalmia almost entirely disappeared, and the cardiac disturbance was quite, or nearly cured.

Thiopheniodid. — Spiegler and Hoch[5] report a new drug which they consider superior in many ways to iodoform in the treatment of wounds. This drug has the formula C_4H_2 I. S., forming in tubular crystals, slightly volatile and melting at 40.5°C. In water it is insoluble, but easily dissolved in ether, chloroform and warm alcohol. The odor is an unpleasant aromatic one. To saturate gauze the following is used:

℞ Thiophen-di-iodid 50
Alcohol }
Æther } . . . . . . āā 500
Glycerine . . . . 10 M.

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Correspondence.

COTTAGE HOMES FOR TRAINING NURSES.

Yokohama, Japan, March 25, 1892.

Mr. Editor: — A recent writer on Japan is reported to have been inspired by the earthquake to express himself in this wise: "It imparted a feeling of pleasure rather than apprehension to realize that the planet itself was also quick and active, full of secret developments and hidden evolutions, shaping itself for fate's destinies with these throes and soft, mysterious upheavals." The earthquake, with its disastrous results, has moved the woman's heart of Madame Sannomiya to do something for the young girls whose homes have been destroyed by these "mysterious upheavals." Some of these children were at the same time bereft of parents and relatives.

The practical outcome has been the preparation, in Tokyo, of a home where the Japanese girls are taught the various duties and industries which experience has shown to be useful and appropriate to their sex. One house, with suitable grounds, has lately been bought, and arranged for fifteen girls, though at present but thirteen are under instruction. The education is to prepare them to act as nurses, in addition to the usual occupations of woman's life; for the natural condition of woman includes marriage, and this is kept in view by those who are thus striving to start a new form of home-economy in the midst of this nascent civilization change. It is not designed to erect large orphan asylums, but rather to establish, in various places, small houses similar to that referred to, which will serve as seed-plants or centres whence the new light and mode of living (single or married) may spread, to be a model for those who are able and willing to be and to do better, physically and in mind and heart.

A great merit of such doings is the purpose that the less informed Japanese may thus learn and be incited to do for themselves, taking a lively and properly selfish interest in progressive improvement.

Other ladies associated as a committee with this enterprise of loving-kindness are Mrs. Caroline Kirkes and Mrs. Mary Shaw.

Very respectfully,
F. B. Stephenson.

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A SWINDLER.

Waterbury, Conn., May 5, 1892.

Mr. Editor: — It may be of use in exposing a swindler and stopping his further operations if you will state in the *Boston Medical and Surgical Journal* that a man giving his name as "Jno. D. Martin," and pretending to be an agent for the "Home Supply Association, 315–321 Wabash Avenue, Chicago, R. S. Peale, General Manager," with a branch office at No. 2 Beacon Street, Boston, has been exploiting towns in Connecticut. He has no credentials.

Yours truly, Walter H. Holmes, M.D.

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[1] British Medical Journal, April 2.
[2] Berliner klin. Woch., No. 51, 1891.
[3] Satellite, May.
[4] Deutsche med. Woch., February 4th.
[5] Medical Press.

METEOROLOGICAL RECORD,

For the week ending April 30, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...24	30.16	56	65	47	47	23	35	W.	W.	13	12	C.	C.	
M..25	30.45	41	54	27	46	52	49	N.W.	S.W.	9	12	F.	C.	
T..26	30.38	45	54	36	42	35	38	N.	N.	12	5	C.	C.	
W. 27	30.43	45	50	40	35	57	46	N.E.	S.	11	10	C.	C.	
T..28	30.11	46	51	40	71	67	69	S.W.	S.W.	15	16	R.	O.	.01
F..29	29.94	52	56	48	63	66	64	W.	S.W.	10	11	O.	O.	.18
S..30	30.26	48	56	40	52	31	42	W.	N.W.	15	13	C.	O.	
☞	30.24	47	55	38	50	47	49			12	11			.03

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 30, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	950	368	17.27	22.55	2.86	2.31	2.72
Chicago . . .	1,099,850	500	237	12.80	15.80	2.00	1.20	4.60
Philadelphia .	1,046,964	430	139	13.57	14.26	2.07	.92	6.67
Brooklyn . .	806,343	388	130	13.00	23.40	2.08	1.56	5.72
St. Louis . . .	451,770	150	35	7.37	14.07	—	4.02	.78
Boston . . .	448,477	201	53	8.82	14.07	2.45	.49	4.41
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	129	40	10.92	15.60	—	3.12	4.68
Cleveland . .	262,000	94	34	15.90	15.90	—	1.06	10.60
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	85	39	9.44	23.60	—	2.36	4.72
Milwaukee . .	240,000	92	42	16.35	17.44	—	1.09	13.08
Washington .	230,392	90	27	11.11	13.33	—	2.22	2.22
Nashville . .	76,168	32	11	6.26	6.26	—	—	—
Charleston . .	65,165	29	8	6.90	6.90	—	—	—
Portland . . .	36,425	15	4	—	6.66	—	—	—
Worcester . .	84,655	30	6	6.66	20.00	—	—	6.66
Lowell . . .	77,696	47	19	4.26	10.65	—	4.26	—
Fall River . .	74,398	28	12	17.85	3.57	—	—	3.57
Cambridge . .	70,028	25	6	8.00	16.00	4.00	4.00	—
Lynn	55,727	19	5	—	15.78	—	—	—
Lawrence . .	44,654	23	7	26.10	—	17.40	—	4.35
Springfield . .	44,179	25	3	—	12.00	—	—	—
New Bedford .	40,733	12	6	25.00	16.66	—	—	—
Salem	30,801	17	3	—	11.76	—	—	—
Chelsea . . .	27,909	8	5	12.50	12.50	—	12.50	—
Haverhill . .	27,412	8	0	12.50	12.50	12.50	—	—
Taunton . . .	25,445	15	1	6.66	6.66	—	—	6.66
Gloucester . .	24,651	10	1	—	20.00	—	—	—
Newton . . .	24,379	5	3	—	40.00	—	—	—
Malden . . .	23,031	7	4	14.28	14.28	—	—	14.28
Fitchburg . .	22,037	11	3	—	—	—	—	—
Waltham . .	18,707	6	0	—	16.66	—	—	—
Pittsfield . .	17,281	5	4	—	60.00	—	—	—
Quincy . . .	16,723	3	1	—	—	—	—	—
Northampton .	14,990	3	1	—	33.33	—	—	—
Newburyport .	13,947	4	1	—	25.00	—	—	—
Medford . . .	11,079	1	0	—	—	—	—	—
Hyde Park . .	10,193	6	1	—	—	—	—	—
Peabody . . .	10,158	1	0	—	—	—	—	—

Deaths reported 3,292: under five years of age 1,259; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 450, acute lung diseases 617, consumption 427, diphtheria and croup 179, scarlet fever 64, diarrhœal diseases 58, measles 37, typhoid fever 33, cerebro-spinal meningitis 27, whooping-cough 26, erysipelas 10, malarial fever 8, small-pox 5.

From measles New York 25, Brooklyn 4, Chicago 3, Philadelphia and Cincinnati 2 each, Milwaukee 1. From typhoid fever Philadelphia 11, Chicago 9, New York 6, Brooklyn, St. Louis, Boston, Cincinnati, Pittsburgh, Nashville and Lawrence 1 each. From cerebro-spinal meningitis Chicago 9, New York 6, Brooklyn and Washington 4 each, Cleveland 3, Nashville 1. From whooping cough New York 10, Fall River and New Bedford 3 each, Chicago and Washington 2 each, Philadelphia, Brooklyn, Boston, Cincinnati, Pittsburgh and Milwaukee 1 each. From erysipelas Brooklyn 3, New York, Chicago and Philadelphia 2 each, St. Louis 1. From malarial fever New York 4, Charleston 2, Brooklyn and Cleveland 1 each. From small-pox New York 5.

In the thirty-three greater towns of England and Wales with an estimated population of 10,185,736, for the week ending April 16th, the death-rate was 20.9. Deaths reported 4,080: acute diseases of the respiratory organs (London) 348, measles 177, whooping-cough 173, diphtheria 50, diarrhœa 43, scarlet fever 32, fever 19.

The death-rates ranged from 13.2 in Burnley to 28.3 in Salford; Birmingham 21.1, Bradford 20.2, Croydon 14.2, Huddersfield 24.3, Hull 18.6, Leeds 21.5, Liecester 22.0, Liverpool 28.1, London 19.4, Manchester 27.0, Newcastle-on-Tyne 21.2, Nottingham 19.1, Sheffield 24.7, West Ham 15.1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending April 23d, the death-rate was 21.8. Deaths reported 4,253: acute diseases of the respiratory organs (London) 389, measles 197, whooping-cough 172, diarrhœa 58, diphtheria 46, scarlet fever 44, fever 20.

The death-rates ranged from 13.9 in Brighton to 28.3 in Bolton; Birmingham 22.8, Gateshead 18.2, Hull 20.6, Leeds 22.4, Leicester 21.4, Liverpool 23.6, London 21.9, Manchester 25.8, Newcastle-on-Tyne 25.5, Sheffield 25.6, Sunderland 23.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 1, 1892, TO MAY 6, 1892.

Leave of absence until July 10, 1892, is granted Lieut.-Col. William D. Wolverton, assistant medical purveyer, U. S. A.

Captain Aaron H. Appel, assistant surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and will report in person for duty to the commanding officer, Fort Buford, N. D., relieving Captain Julian M. Cabell, assistant surgeon, who will then report in person for duty to the commanding officer, Fort D. A. Russell, Wyoming.

Captain Robert R. Ball, assistant surgeon, U. S. A., is relieved from further duty at Fort Spokane, Washington, and will report in person to the commanding officer, Fort Townsend, Washington, for duty at that station.

Captain Louis W. Crampton, assistant surgeon, U. S. A., is relieved from further duty at Fort Townsend, Washington, and will report in person to the commanding officer, Fort Spokane, Washington, for duty at that station.

First.-Lieut. Alfred E. Bradley, assistant surgeon, U. S. A., will, upon the arrival of acting assistant surgeon, George D. Deshon, U. S. A., at Columbus Barracks, Ohio, return to his proper station (Omaha, Nebraska).

The leave of absence granted Captain George McCreevy, assistant surgeon, U. S. A., for seven days, is extended fifteen days.

First.-Lieut. Henry D. Snyder, assistant surgeon, U. S. A., granted leave of absence for one month and fifteen days, to take effect, when his services can be spared by his post commander.

AMERICAN SURGICAL ASSOCIATION.

Preliminary Programme.

The Association will meet in Boston, Mass., Tuesday morning, May 31, June 1 and 2, 1892, in the hall of the Natural History Society on Berkeley Street.

1. "The Treatment of Uncomplicated Fractures of the Lower End of the Humerus and of the Base of the Radius," by John B. Roberts, M.D., Philadelphia, Pa. Discussion by Drs. John E. Owens, of Chicago, John H. Packard, of Philadelphia, C. B. Porter, of Boston, and J. Ford Thompson, of Washington, D. C.
2. "Fibroid Tumors of the Uterus," by John Homans, M.D., Boston, Mass. Discussion by Drs. F. E. Lange, of New York, M. H. Richardson, of Boston, A. M. Vander Veer, of Albany, J. Ewing Mears, of Philadelphia, and George R. Fowler, of Brooklyn.
3. "Surgical Operations in Persons Suffering from Diseases not connected with that necessitating the Operation, such as Chronic Malarial Poisoning, Diabetes, Organic Heart Disease, etc.," by W. T. Briggs, M.D., Nashville, Tenn. Discussion by Drs. T. F. Prewitt, of St. Louis, Hunter McGuire, of Richmond, and W. W. Dawson, of Cincinnati.
4. "Surgery of the Tongue," by N. P. Danbridge, M.D., of Cincinnati, Ohio. Discussion by Drs. D. W. Cheever, of Boston, D. W. Yandell, of Louisville, and L. McLane Tiffany, of Baltimore.
5. "Conditions demanding Excision of the Globe of the Eye," by W. H. Carmalt, M.D., New Haven, Conn. Discussion by Dr. Wm. Thompson, Philadelphia, Pa.
6. "Ancient Contractures of the Hip and Knee Joints," by

T. F. Prewitt, M.D., St. Louis, Missouri. Discussion by Drs. DeForrest Willard, of Philadelphia, and Robert Abbe, of New York.

7. "Report of Operations upon Spina Bifida and Encephalocele, with remarks," by A. T. Cabot, M.D., Boston, Mass.

The Association will meet on Wednesday morning, in the Amphitheatre of the Massachusetts General Hospital, and on Thursday morning in the Amphitheatre of the Boston City Hospital.

Phineas S. Conner, *President*.
J. R. Weist, *Secretary*.

ANNUAL MEETING OF THE BOSTON MEDICAL ASSOCIATION.

The annual meeting of the Boston Medical Association will be held at 19 Boylston Place, Friday, May 20th, at 4 o'clock. This Association has adopted and maintained the fee table which is the standard used in the City of Boston. Membership in the Association may be had by the payment to the secretary of a nominal fee of one dollar and the signing of the Constitution of the Association.

The special business before this annual meeting is the election of a member to the executive committee to fill the vacancy made by the death of Dr. Buckminster Brown.

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

CENSORS' EXAMINATION.

The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet for examination of candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, June 2, 1892, at 2.30 P. M.

Candidates should make personal application to the Secretary, and present their medical diploma, or its equivalent, at least three days before the examination.

For further particulars, apply from 2 to 3 P. M., to

James J. Minot, M.D.,
188 Marlborough Street. *Secretary.*

MASSACHUSETTS VOLUNTEER MILITIA. — BOARD OF MEDICAL OFFICERS.

There appeared before the Board this day (May 5, 1892) Lieutenant John F. Harvey, of Boston, who was examined and qualified as Assistant Surgeon, Battery A, Light Artillery, Second Brigade.

APPOINTMENTS.

W. T. Councilman, M.D., Associate in Pathology in the Johns Hopkins Hospital, Baltimore, has been appointed Shattuck Professor of Pathological Anatomy in the Harvard Medical School.

The Governor has reappointed Dr. Elijah U. Jones, of Taunton, to be a member of the Massachusetts State Board of Health.

At a meeting of the Trustees of the Free Hospital for Women, held April 13th, Dr. John Homans was unanimously elected consulting surgeon to fill the vacancy caused by the death of Dr. D. Humphreys Storer.

RESIGNATION.

Dr. F. I. Knight has resigned the Clinical Professorship of Laryngology in the Harvard Medical School and the position of Physician for Diseases of the Throat in the Massachusetts General Hospital.

RECENT DEATHS.

John B. Van Bibber, M.D., died in Baltimore, May 5th, aged forty-two years. He was a member of the American Neurological Association and of the Medical and Chirurgical Faculty of Maryland.

Harvey G. McIntire, M.D., died in Concord, N. H , May 9th. He graduated from the Harvard Medical School in 1848, and has lived in Concord since 1863.

Rutson Maury, M.D., died in New York City, May 5th, aged twenty-seven years. He graduated from the Bellevue Hospital Medical College in 1887.

W. S. Hopkins, M.D., of Vergennes, Vt., died May 8th, aged sixty-seven. He had been in active practice for more than forty years, and had served as mayor of the city and in the State legislature.

John George Moore, M.D., died in New York, April 30th, aged twenty-nine years. He graduated with honor from the College of Physicians and Surgeons in 1888, and was subsequently house-physician at St. Vincent's Hospital.

Charles F. Stillman, M.D., formerly of New York, but latterly of Chicago, died of tuberculosis in Plainfield, N. J., on April 30th. While still a young man he showed marked ability in his profession, and he early attained unusual success, especially in the department of orthopedic surgery. At the time of his death he was not yet forty.

George Brown, M.D., M.M.S.S., of Barre, died in New York, May 6th, aged sixty-eight years. He graduated from the College of Physicians and Surgeons in New York in 1850, since which year he has lived in Barre. In 1851 he became proprietor of the Institution for Feeble-Minded Youth, which he conducted until his death. He was for several years a councillor of the Massachusetts Medical Society, and in 1889, president of the Worcester District Society.

William B. Fiske, M.D., M.M.S.S., died in Cambridge, May 9th, aged thirty years. He graduated from Harvard College in the class of 1882 and from the Medical School in 1887.

BOOKS AND PAMPHLETS RECEIVED.

The Anthropometric Tables of Amherst College. 1892.

Athetosis with Clinical Cases. By Archibald Church, M.D.

The Insane and the Asylums. By Horace G. Wetherill, M.D.

Drug Habituation. By Lucius W. Baker, M.D. Reprint. 1892.

Gastrostomy. By N. Senn, M.D., Ph.D., Chicago. Reprint. 1892.

The Caustic Treatment of Cancer. By Daniel Lewis, M.D. Reprint. 1892.

Mme. Lachapelle, Midwife. By Hunter Robb, M.D., Baltimore, M.D. Reprint. 1891.

Systemic Infection from Gonorrhœa. By Bedford Brown, M.D., of Alexandria, Va. Reprint. 1892.

Thirty-Two Unselected Abdominal Sections. By Thomas Opie, M.D., Baltimore, Md. Reprint. 1891.

Notes on Beauty, Vigor and Development The Science of Health Library. New York. Fowler & Wells Co.

A Contribution to Spinal-Cord Surgery. By Archibald Church, M D., and D. W. Eisendrath, M.D. Reprint. 1892.

Nervo-Vascular Disturbances in Unacclimated Persons in Colorado. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1892.

Ideals of Medical Education. The Address in Medicine, Yale University, 1891. By John S. Billings, M.D., LL.D. Reprint. 1891.

Ataxia. Clinical Lecture delivered at the Arapahoe County Hospital, Denver, Col. By J. T. Eskridge, M.D. Reprint. 1892.

Notes on Typhoid, from 676 Cases Admitted to the Boston City Hospital in 1890 and 1891. By A. L. Mason, M.D. Reprint. 1892.

Multiple Cerebro-Spinal Syphilis. What can we Expect from the Surgical Treatment of Epilepsy? By B. Sachs, M.D. Reprints. 1891–2.

Old and New Ideas with Regard to the Work and the Organization of Institutions for the Insane. By Richard Dewey, M.D. Reprint. 1892.

The Second Year's Work in Diseases of the Rectum at the New York Post-Graduate Hospital. By Charles B. Kelsey, M.D. Reprint. 1892.

An Appeal to the Medical Profession from the Decision of the Trustees of Columbus Medical College. By N. R. Coleman, M.D , Columbus, O. Reprint. 1892.

Ideality of Medical Science. The Evil Events of the Profession, and an Available Device for its Reformation. By Maurice C. Burstein, A.M., M.D., New York.

Two Cases of Hernia, both Treated by Laparotomy: I. A Properitoneal Hernia; II. A Femoral Littré's Hernia. By W. W. Keen, M.D., Philadelphia. Reprint. 1892.

The Life-History of Tennessee C. Claflin (now Lady Cook), from her Childhood to the Present Time: Her Experiences and her Work as a Banker, an Editor and a Physician, London, England. 1892.

The Philadelphia County Medical Society in 1848 and 1892. The Annual Address of the President. The After-Treatment in Operative Surgery. By John B. Roberts, M.D. Philadelphia. Reprint. 1892.

Pye's Surgical Handicraft, a Manual of Surgical Manipulations, Minor Surgery, and other matters connected with the work of house-surgeons and surgical dressings. First American from third London edition, revised and edited by T. H. R. Crowle, F.R.C.S. New York: E. B. Treat. 1892.

Lecture.

NEW OUTLOOKS IN THE PROPHYLAXIS AND TREATMENT OF TUBERCULOSIS.

The Middleton-Goldsmith Lecture for 1892.

BY FRANCIS P. KINNICUTT, M.D.,
Physician to St. Luke's Hospital and the Presbyterian Hospital, New York.

Gentlemen: — When your committee did me the honor to request my acceptance of the Middleton-Goldsmith lectureship of the present year, and suggested the subject, "The Present Aspect of the Treatment of Tuberculous Disease and especially of Pulmonary Tuberculosis," my first inclination was to decline. Their representations that a review of this subject was particularly desirable at the present time and would serve a practical purpose, have alone induced me to undertake a difficult task.

The lecture has been postponed beyond the customary time of its delivery, in the hope that investigations which have been carried on during the past winter in St. Luke's Hospital and in the Pathological Laboratory of the College of Physicians and Surgeons, might be sufficiently advanced to be incorporated in it. This hope, in part, has been fulfilled.

Any consideration of methods of treatment of infectious diseases, at the present time, must necessarily be in the light of modern pathology and bacteriology. Through the discoveries in this field of medicine, the term *treatment* has acquired a new significance. A large number of the infectious diseases of human beings and of animals have already been shown to have their origin in specific pathogenic living organisms; and there are strong reasons for believing that a similar etiology will be demonstrated in the near future for all diseases hitherto included in this category.

In the infancy of bacteriology, it was not unnaturally assumed that the sowing of the seed was alone necessary for the production of a disease, that if once the specific germ gained access to the economy, its particular effects would certainly follow. The "possession of a self-protecting power by the organism of man and of the higher animals, which could exercise its influence within certain limits either in arresting the development of the living exciters of disease or in counteracting their poisonous products" was hardly dreamed of. To-day the splendid discoveries of bacteriological research have abundantly demonstrated that an unceasing contest is being waged between the growing power and toxic activity of the pathogenic microphyte and the living organism.

In this connection, what can be of more absorbing interest than the discovery by the distinguished plant physiologist Professor Pfeffer,[1] of the group of phenomena, to which he gave the name of chemotaxis, the definite relation between vital movement and chemical action. Later, it was suggested by Dr. Leber, that the emigration of leucocytes in the human body was due to the same power. In other words, that certain harmful substances in the living tissues, embracing effete materials, living pathogenic organisms and viruses of various kinds are agreeable to a rudimentary sense of taste, as it were, in the leucocytes, which are thus allured from the media in which they commonly live, towards the attracting substance.

The mustering of the leucocytes in troops in the neighborhood of the bacterial invaders of the body, as a direct or indirect protection to it, is almost as dramatic as it is important. This action of the leucocytes, in virtue of their chemotaxis, and the final incorporation or digestion by them of the bacteria, constitutes Metschnikoff's well-known theory of phagocytosis and phagocytic immunity.

Further, we may refer to the investigations of Büchner[2] and Roemer, showing the association of a *general leucocytosis* with febrile inflammatory processes. They found that within eight hours after the intravenous injection, in rabbits, of various proteids, the result was marked leucocytosis; the relation of white to red blood-cells on the evening of the fourth day of the daily injection of solutions of the protein of the bacillus pyocyaneus (green pus) was 1 to 38, the absolute number of the red blood-cells remaining unchanged. It should be mentioned that the office of policeman, on the part of the leucocyte is not considered proven at the present time, by many. Their work as scavengers is acknowledged, but it is believed that the true guardianship of the body resides in the body fluids; in other words, that the destruction of bacteria is accomplished by the germicidal power of the latter, and their removal only is affected by the leucocytes.

Finally, we may refer to the investigations which have shown that "while the living tissues and fluids of the body possess the power in varying degree, of arresting the development of living, disease-producing organisms, and of eventually destroying them, certain life products of the latter are capable of impairing or inhibiting this protective power."

In view of such facts, preventive medicine must necessarily embrace the means of promoting the victory of the organism in its contest, either by strengthening its defences or by weakening or destroying the power of the growing microphyte.

With our present knowledge of the various media in which the specific living exciters of disease most commonly lurk, it should be a matter of reproach if we fail in securing a more efficient prophylaxis than has been possible in the past.

Previous to 1882, the pulmonary lesions of tuberculosis had been accurately described; and Villemin, as a result of his successful inoculations of animals, had declared it to be a specific infectious disease. With the announcement of Koch, on March 14th of the above year, that he had discovered not only the constant accompaniment but the cause of the tuberculous process, the infectious nature of tuberculosis was finally established and the nature of the relation between specificity of cause and specificity of process in this disease was determined.

Before proceeding further, it will be advantageous to have accurately pictured in our minds the pulmonary lesions which are directly or indirectly due to the tubercle bacillus. The list is indeed a formidable one. Miliary tubercles both single and conglomerate, larger and smaller areas of epitheloid-cell growth called diffuse tuberculous tissue, and various aggregations of these, often in a state of more or less advanced coagulation necrosis, disintegration and excavation as a result of the latter, cicatrical formation, peribronchitis and extensive inflammatory consolidations specific in nature; and finally we must bear in mind the bronchitis and lobular pneumonias probably simple (unspecific) in character, so frequently present in tuberculous lungs.

In the light shed by modern research upon the possession by the organism of man of a self-protecting power against pathogenic organisms, with a knowledge of the specific organism which causes tuberculosis and the lesions which are directly or indirectly produced by its presence in the economy, we are proportionately equipped to attempt to consider the measures, prophylactic and remedial, which have been proposed to cope with the disease.

Prophylactic measures must necessarily consist of those designed to destroy the vitality of the bacillus outside of the human body, to minimize the sources of infection and to render the tissues insusceptible to its presence.

Three possibilities suggest themselves as *specific* means for exercising a *remedial* effect. They are: (1) the discovery of a method of treatment capable of destroying the bacillus within the body; (2) of some substance, organic or inorganic, which by its introduction into the body, may so modify the action of the bacillus, as to deprive it of its harmful effects — the possible abstraction of a constituent of its protoplasm or of its metabolic products, analogous to the tetanus or pneumonic antitoxin, suggests itself in this connection; (3) the discovery of a principle capable on introduction into the economy of increasing the germicidal power of the fluids of the body by stimulating cell activity upon which it ultimately depends, or by such stimulation inducing connective tissue changes in tuberculous tissue, or both.

PROPHYLAXIS.

I shall first consider the prophylaxis of tuberculosis, so far as it relates to destroying the vitality of the bacillus outside of the human body and to minimizing the sources of infection.

With the discovery of the specifically infectious nature of a disease, the means of infection are not necessarily directly evident. In tuberculosis, a series of brilliant investigations quickly threw much light upon this point. Following Koch's discovery, it was very early shown that the bacilli were not contained in the air expired by patients suffering from pulmonary tuberculosis; on the other hand, that their sputum contained bacilli in enormous numbers. It was further shown that the bacilli were incapable of escaping from fluid media, and finally, that the sputum in the dry state, conveyed in the form of pulverized atoms by currents of air, was the most common source of infection. Successive investigations demonstrated that the stools of human beings afflicted with the intestinal form of the disease, the discharges from tuberculous ulcers, glands and bones were positive, if infrequent vehicles of infection; and, finally, that the milk of tuberculous cows, with or without disease localized in the udder, and tuberculous meat were capable of producing tuberculosis in the consumer.

It will be interesting to refer at somewhat greater length to inoculation experiments and clinical observations bearing on the above points.

The elaborate investigations of Cornet,[3] in the Berlin Institute of Hygiene, in regard to the distribution of the tubercle bacilli in the air, are particularly instructive. The dust from twenty-one wards of seven hospitals, from three asylums, two prisons, from the living-rooms of sixty-two phthisical patients in private practice, from "out-patient" departments, from the public streets and from inhalation experiment rooms was gathered, and its virulence or innocuousness determined by inoculation of susceptible animals. Of ninety-four animals inoculated with the dust of hospital wards, twenty became tuberculous. Virulent bacilli were obtained from fifteen out of twenty-one medical wards. Negative results, on the other hand, were obtained from the dust of the surgical wards, also from that of the streets and the inhalation rooms investigated. Of one hundred and seventy animals inoculated with dust from the living-rooms of consumptives, thirty-four became infected. As ninety-one of the one hundred and seventy died of septic disease, it is probable that the above percentage of animals in which tuberculosis was produced does not accurately represent the specific (tuberculous) virulence of such dust. The dust was taken from the walls, articles of furniture, picture-frames, etc. From the room of a consumptive in a private house, virulent bacilli were obtained six weeks after her death.

Cornet records the fact that he did not once find infective bacilli in the rooms of those patients who used only spittoons for the sputum, although especially careful search was made in these instances. Equally valuable evidence on this point is furnished by Trudeau.[4] In his sanitarium at Saranac Lake, where rigid rules, in regard to the use of proper receptacles for the sputum, are enforced, and its efficient disinfection or destruction is accomplished, not a single employee has acquired tuberculosis during the six years since its institution.

In Dettweiler's sanitarium at Falkenstein, where presumably similar precautions are taken, a similar experience is claimed.

With such observations before us, further *clinical* statistics may be unnecessary, but are not without interest.

In response to questions sent, in 1883, by the Collective Investigation Committee of the British Medical Association to physicians throughout Great Britain,[5] asking for their personal experience on the communicability of phthisis, 1,078 communications were received. Of these, 673 were to the effect that cases of tuberculosis originating in infection had not come under their notice. Of the remaining 405, 261 were regarded by the Committee as positive in evidence of communicability, 39 as doubtful and 105 as negative. Among the affirmative observers, 192 reported cases of probable infection of husband by wife and the converse, and in 130 of these cases there was entire absence of inherited predisposition on the part of the person infected.

Turning to our own country, the investigations of Flick[6] are of much interest. The localization of, and mortality from, tuberculosis in one of the wards of the city of Philadelphia, for a period of twenty-five years preceding 1888, were very carefully studied by him. It is shown that while less than one-third of the houses of the ward became infected with tuberculosis during the twenty-five years prior to 1888, considerably more than one-half of the deaths from this disease during the year 1888, occurred in infected houses. Inasmuch as there were more than twice as many non-infected as infected houses in the ward, a preponderance of deaths in non-infected houses would be expected.

Cornet's investigations of the health statistics of the Catholic Nursing Orders of Prussia,[7] may be considered as supplementary to those of the same author which have already been described. Thirty-eight convents were selected, representing a yearly average of 4,028 persons, and the statistics relate to the twenty-five years preceding the year 1889. It is known that the general annual death-rate from tuberculous disease is from one-seventh to one-fifth of all deaths. Among the above orders, the enormous average mortality of 62.88 per cent. is shown to be due to tuberculosis alone. In nearly one-half the convents it even rises to seventy-five per cent., and in two "Mother Houses," it was the sole cause of death. In others, the death-rate from this disease varies from 40 to 50 per cent.

Cornet says that the different mortalities may be explained by the fact that some of the nurses are engaged in attending altogether, or, for the most part, upon surgical cases. The average age at death of the inmates is 36.27 years, lower by ten years than that of men engaged in trades notoriously the most unhealthful; that is, file-cutters, coppersmiths, locksmiths, blacksmiths, cotton-spinners, etc. If the mortality due to tuberculosis and that resulting from other diseases commonly regarded as infectious are both deducted from the death-rate in the Prussian State and in the convents, it is shown that up to the age of forty years, the death-rates in State and convents are remarkably equal. From forty to sixty years, the mortality due to non-infectious diseases is less in convent than in State. Even admitting the insanitary conditions of convent life, it is impossible to believe, with our present knowledge of the etiology of tuberculous disease, that it can produce it. On the other hand, these conditions are of the kind to lead to its rapid extension, when once introduced. It should be mentioned that the health of all persons on entering the Nursing Communities is excellent, admission being dependent upon medical certificates to this effect.

Among the numerous investigations [8 9 10] of the infectiousness of the milk of tuberculous cows, I shall only refer to the very brilliant ones of our countryman, Dr. Ernst of the Harvard Medical School.[11] They surpass in their extent and importance those of Continental observers. Experimental inoculation in rabbits and guinea-pigs and feeding experiments in calves and pigs with both the milk and cream of tuberculous cows *without* disease of the udder, proved in the most positive manner that such milk is capable of producing tuberculosis in the consumer. Incidentally, in experiments with milk taken at random from the common dairy-supply of Boston, virulent bacilli were found in two instances.

If Dr. Ernst's experiments are supplemented with the clinical fact of the frequency of intestinal and mesenteric tuberculous disease in children, and with the statement made in the form of a resolution, by the United States Veterinary Association in 1889, that from ten to fifteen per cent. of the dairy stock of the Eastern States is tuberculous, this subject assumes very grave importance. Although investigations have shown that tuberculous meat as such is infective, further experiments are necessary to determine whether those parts of a tuberculous animal usually used for food and not specifically affected, are harmful.

I have been able to collect a large number of cases of probable inoculation-tuberculosis in the human being. Many of them occurred through infection of post-mortem and dissection wounds. Among others, the following are of interest:

A healthy girl of 14 years, without inherited predisposition, became locally infected through wearing the ear-rings of a consumptive. A tuberculous infiltration of the glands and general infection followed.[12]

A male child, very vigorous at birth, began to suffer when three years old from eczema of the skin of the abdomen. Bacilli were searched for, but not discovered. After four years of age, he constantly slept with his consumptive mother, and bacilli were shown to be present in the eczematous vesicles.[13]

A student received a slight wound in dissection; a nodule appeared at its site and a swelling of the glands of the forearm followed. The glands were excised, and showed central cheesy degeneration.[14]

Ten Jewish boys were circumcised by the same physician only a short time before his death from consumption. There is positive evidence that the saliva of the operator came in contact with the preputial wounds. The first symptoms of infection developed ten days later. Three of the children died of tuberculous meningitis, three of marasmus, and one of intercurrent diarrhœa. Three survived, but developed tuberculous adenitis.[15]

Accumulated experimental and clinical investigations in demonstrating the most common sources of infection, namely, the sputum of patients suffering from pulmonary tuberculosis, the milk of tuberculous cows, and finally, though to a much less extent probably, tuberculous meat, clearly indicate the direction which prophylactic measures should take.

The enormous number of tubercle bacilli contained in the sputum of patients suffering from pulmonary tuberculosis, even admitting that many of them are dead, as Kitasato very recently has shown, is well known. In a series of investigations kindly made for me by Dr. T. Mitchell Prudden in 1891, as many as 21,460,000 were computed to be present in the daily sputum of a single patient. Nuttall's experiments [16] conducted in the Johns Hopkins Laboratory, give quite similar results.

Sawizky [17] has shown, moreover, that tuberculous sputum, dried and preserved under the conditions which usually obtain in the dwelling-house, preserves its infective properties for two and a half months.

Stone's experiments,[18] if corroborated by further investigations apparently show that its virulence may be extended for as long a period as three years. If we further consider the exceptional resistance of the tubercle bacilli to the action of both chemical and other antiseptics, the efficient disinfection or destruction of tuberculous sputum becomes of vital importance.

Chemical Disinfection. — Carbolic acid, potassa, sulphate of copper and chloride of zinc, all in solutions of 1–500, were found by Grancher and de Gennes to be useless.[19] Histological examination of the sputum so treated showed no change in the appearance of the bacilli and inoculations proved that they were still active. Later experiments [20] have demonstrated that carbolic acid even in ten per cent. solution and after twenty-four hours admixture with the sputum, is without effect.

Corrosive sublimate is valueless through the coagulation produced by it of the albuminoids contained in the sputum. The experimental investigations of Schottelius and Spengler [20] with the newer antiseptics, creolin, aseptol and lisol, of which much was hoped, have also been disappointing. Ten per cent. solutions of creolin and aseptol were found to be absolutely without effect, even after twenty-four hours.

Lisol, however, in ten per cent. solution proved to be capable of rendering the sputum sterile in twelve hours.

These results indicate in the most positive manner that we possess no practical means at present for efficiently disinfecting sputum by chemical antiseptics.

Experiments with heat, on the other hand, have shown that the tubercle bacilli rarely survive a temperature of 80 C., and are invariably killed at temperatures varying, according to different observers, from 90 C., to 100 C.[21] Simple rinsing of the cups or other receptacles of the sputum with boiling water is not sufficient and is not without danger to the attendant. Numerous observers report cases of infection of cuts from sputum. (V. Eiselberg,[22] Fleur,[23] Holst,[24] L. Pfeiffer[25] and others.)

In view of these facts, every consumptive should possess the knowledge that while his disease is in reality a menace to those about him, the foil is within his reach. He should be taught never to use a handkerchief for the sputum, never to spit upon the floor. An appropriate receptacle of glass, china or paper, partially filled with water should be provided for the sputum, which should be thoroughly disinfected or destroyed at least once in twenty-four hours. For its disinfection in hospitals, an ordinary Arnold's sterilizer, of sufficient size to accommodate all the cups of a ward, and in which they should be placed daily for a half-hour, may be used.

A far better method in my judgment, is the destruction of the sputum by fire. The method at present in successful use in St. Luke's Hospital and which is of easy application in private houses, consists in the use of paper boxes, which are daily supplied to each patient, and at the end of twenty-four hours destroyed with their contents, by fire. They are of convenient size, are very inexpensive, and the preparation used in their construction prevents all leakage. The floors and the walls of living-rooms and of hospital-wards of consumptives should be scrubbed or wiped with damp clothes, not swept or dusted. The cast-off clothing of such patients should be submitted to the action of live steam or to the degree of heat described as sufficient to destroy the tubercle bacilli.

Public sentiment, in the absence of legislation, should compel the proprietors of hotels and boarding-houses at health resorts, at least, to take such measures as can be designated with our present knowledge, for disinfecting the living-rooms of consumptives. Further investigations are urgently needed to determine the most efficient and practical means for accomplishing this object.

A further most important prophylactic measure consists in the systematic veterinary inspection of dairies, particularly those of large cities and of slaughter-houses. Commercial considerations have secured the necessary legislation for the inspection of the pork products of the United States; a consideration of the public health should be sufficient to secure a similar legislation to minimize the sources of infection of tuberculous disease.

A bill for the inspection of dairies and the slaughter of tuberculous animals, I am happy to state, will probably be introduced into the legislative houses of the State of New York during the present session. Such an example, it is reasonable to hope, would gradually be followed by the legislatures of other States.

In the meantime, in the absence of necessary legislation, the only safeguard possessed by the public against possible infection through dairy products, consists in the sterilization of milk and cream by boiling, or through the use of steam sterilizers.*

Many of the prophylactic measures which have been mentioned have already been embodied in the form of suggestions or in laws by various governments and municipalities abroad, and the Board of Health of the City of New York has issued some admirable rules "to be observed for the prevention of the spread of consumption."

In considering the prophylaxis of tuberculosis, I have purposely confined myself to measures designed to destroy the vitality of the bacillus outside of the human body and to means for minimizing the sources of infection, in the belief that such efforts are of far greater relative value than those directed toward increasing the resisting power of the individual. I shall even go farther, and thus cease to be open to the reproach that the clinician's interest in the therapeusis of the disease is almost to the exclusion of that in its prophylaxis, and assert that infinitely more can be accomplished towards the elimination of this terrible scourge by making practical use of our present exact knowledge of its etiology and prophylaxis than by any or all therapeutic measures at present at our command. As has been well said, "It is the seed of the disease, without the implantation of which there can be no harvest of death, that we are now most able to reach and destroy." We shall fail then in our duties as true physicians, if we do not scatter broadcast among the laity this knowledge. From a full appreciation of the dangers at their doors and a knowledge of the means capable of diverting them, surely good fruit will be borne, even to the *enactment* and *enforcement* of laws for the protection of the public health.

In turning our attention to the remedial treatment of tuberculosis, our thoughts naturally are directed first to Koch's tuberculin.[26]

His hypothesis of its specific mode of action is as follows: He particularly states that other explanations are possible and may be more correct. The tubercle bacilli in their growth produce in the living tissues, just as in artificial cultivations, certain substances which have various but always deleterious effects upon the living elements of their surroundings, — the cells. Among these substances is one which, in a certain concentration, destroys living protoplasm and causes it to undergo what is known as a coagulation necrosis. The necrotic tissue is unfavorable to the nutrition of the bacillus; its further development is checked, and finally in some cases its death follows. If the amount of the necrosis producing substance be artificially augmented, as he believes it to be by the introduction of tuberculin into the system, not only will the extent of the necrosis be increased and consequently the conditions of the nutrition of the bacilli be more unfavorably affected, but also more completely necrosed tissues will disintegrate and slough, and where this is possible, take with them the enclosed bacilli, carrying them outward. Large doses of tuberculin are capable of giving rise to a certain amount of pyrexia and other symptoms in healthy persons, he believes, through irritative influences exerted upon certain elements of the tissues, probably on the white corpuscles of the blood or cells closely related to them.

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* Investigations conducted in the Imperial Health Bureau of Berlin demonstrate that tubercle bacilli also retain their vitality in butter and cheese, frequently for weeks.

The necrosis producing substance in tuberculin, Koch now tentatively believes to be an albumose or a substance closely related to it. Many elaborate criticisms of this hypothesis, both theoretical and based upon experimental and clinical investigations, have appeared during the past year.

In a very recent monograph by Rosenbach,[27] the author denies both a specific affinity of tuberculin for tuberculous tissue and the specific action claimed for it. The general reaction and constitutional disturbance following its inoculation, he believes to be due to a general irritation set up in the body, which, according to its degree, can assume the characteristics of an inflammatory action, in some cases even of a purulent type. The degree of the reaction, particularly of the fever, depends upon the predisposition of the individual to febrile disturbance. Similar constitutional disturbances have been shown to follow the inoculation of cantharidal salts and the protein of other bacteria. Rosenbach asserts that the specific activity of tuberculin can only be demonstrated when it is proved that substances derived from other micro-organisms can produce fever exclusively in subjects who are the hosts of bacteria of the same kind, and further that they can evoke reactions only in tissues in which changes have occurred from their action and elsewhere remain without effect. He claims that hitherto this has not been shown. The author expresses a guarded opinion whether tuberculin produces an actual necrosis of tuberculous tissue; if it occurs, he believes it is not a coagulation (specific) necrosis, but rather is secondary to an acute inflammatory process and exudation.

A new light has been thrown on the nature and action of tuberculin through the investigations of Wm. Hunter, of England, and the German pathologist, Klebs. As early as January, 1891, the former began his investigations.[28] Starting with the assertion of Koch that the remarkable properties possessed by it, unfortunately for evil as well as for good, were due to a single active principle which constituted but a fractional part of the extract, he believed that the chemical behavior of this hypothetical principle, which was described by the discoverer as a derivative of albuminoid bodies, could not possibly apply to any one known chemical substance.

His studies had for their object:

(1) To isolate the chief constituents of tuberculin and to determine their chemical nature.

(2) To ascertain their action with special reference to their power of inducing the two most characteristic effects of tuberculin, namely, local inflammation and fever.

(3) To ascertain how far it was possible to eliminate all substances having an injurious action, and thus to obtain remedial without injurious effects.

His results may be summarized as follows, under the heads of Composition, Action and Therapeutic Value.

The chief substances found in tuberculin are: (1) Albumoses;* (2) Alkaloidal substances; (3) Extractives, small in quantity and of unrecognized nature; (4) Mucin; (5) Inorganic salts; (6) Glycerine and coloring matter.

Having ascertained that the only substances present in tuberculin with which the active properties could be associated were albumoses, organic bases of alkaloidal nature, and probably various extractives, he proceeded to determine by experiments on mice and guinea-pigs, to which of the above substances, tuberculin owed its characteristic properties, remedial and otherwise.

Four modifications of the original tuberculin were accordingly prepared by him. He has given to them the designations A, C, B and CB; and these terms will be retained in the present paper.

From extensive investigations with these modifications, he feels warranted in concluding:

(1) That tuberculin owes its activity, not to one principle, but to several; that its action in producing local inflammation, fever and general constitutional disturbance is not a simple but an extremely complex one.

(2) That its remedial and inflammatory actions are connected with the presence of certain of its albumoses, while its fever-producing properties are chiefly associated with substances of a non-albuminous nature.

(3) By the adoption of certain chemical methods, it is possible to remove the substances which cause the fever, while retaining those which are beneficial in their action.

(4) That the fever produced by tuberculin is thus absolutely unessential to its remedial action. (He is inclined to believe that the inflammation is almost similarily unessential, although admitting that under certain circumstances it may assist the action of the remedial substance.)

(5) That tuberculin possesses a truly remedial action and that this is to be found in a protein, that is, in an albuminous substance derived from the plasma of the bacilli themselves and not formed by their action upon the surrounding tissues; and, finally, that it is possible to isolate largely this protein.

Dr. Hunter's clinical investigations, in which he has been assisted by Mr. Watson Cheyne, with the above modifications of tuberculin, have led him to assert tentatively the following proposition: Modification A differs but slightly in its action from tuberculin. Modification C differs from tuberculin in being almost completely freed from the substance which gives rise to local inflammation. It contains, however, in a special degree the fever-producing agents, which may be regarded as interfering with the remedial properties and favoring rather than retarding the growth of the bacilli. Modification CB contains the remedial substance present in C, freed from the fever-producing agents. Its use, moreover, is unattended with any of the other constitutional symptoms following the employment of tuberculin. Modification B contains the remedial properties of CB with the additional property of inducing local inflammation. Its action is free, so far as has yet been observed, from ill effects.

From the marked improvement which Dr. Hunter has seen occur in cases of ulcerative and other forms of lupus, where it is possible to watch the local changes from day to day, under treatment both with B and CB, he believes the activity and probable remedial power of these modifications to be demonstrated.

It yet remains to be determined whether the improvement noted in his cases will be more or less permanent. The absence of marked local inflammation or of necrotic changes accompanying their use leaves the mode of action of the above modifications of tuberculin a matter of more or less speculation at the present time. I shall refer later to the clinical investigations of other observers and to some personal ones with Dr. Hunter's preparations.

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* Albumoses, chiefly proto-albumose and deutero-albumose, along with hetero-albumose and occasionally a trace of dys-albumose.

Professor Klebs's researches have apparently been based on the same line of thought as the above, but were made quite independently of them.[29] Convinced that tuberculin produced in the human being many effects which had nothing to do with its action upon tuberculous tissue, and which could be avoided without affecting the latter property, he submitted tuberculin to various chemical processes, with the view of freeing it from its alkaloidal substances. Its noxious properties reside in the latter, he believes. He claims that the extracted principle represents the secretions of the tubercle bacilli and is a pure albumose. Experimental investigations in animals indicate that the injection of large doses of tuberculocidin, as he terms the albumose, previous to inoculation with pure cultures of the bacillus, delays the development of tuberculosis to at least twice the usual period; moreover, that a complete resolution of previously developed tubercle may occur under its use.

The best results in animals were obtained when the tuberculocidin was injected simultaneously with inoculation of the bacilli.

In such animals killed three months later, tubercle was scantily present, and few bacilli were found. In cases where treatment was begun six weeks after experimental inoculation and continued for twenty-five days, either complete healing or a high degree of retrogradation of the tuberculous lesions was observed.

Of 75 critically observed cases of pulmonary tuberculosis in the human being, treated with tuberculocidin, 18.6% are claimed to have been cured, and 60% improved. In a single case of supposed tuberculous meningitis, the symptoms also improved. Cases are reported in detail by Klebs, in which a successful issue occurred, both tuberculin and creasote having previously failed to give good results. The treatment being practically unattended with constitutional disturbances or fever, there is no interference with the customary life and occupation of the patient.

So far as I am able to judge from Klebs's statements, the remedial properties of tuberculocidin reside wholly in its germicidal power, that is, in its ability to destroy the tubercle bacillus within the human body. He expressly states that no inflammatory process or necrosis of tissue is produced by it.

If Klebs's very positive statements on the above points are borne out by further extended observations, a far-reaching and very brilliant discovery has been given to the world.

In concluding his report, Klebs remarks: "That it only remains to determine the limitations which control the cure of the disease produced by the specific bacillus, whose destruction we have succeeded in accomplishing. The first cause may vanish, and yet the pernicious results of the conditions developed from it remain. When advanced destruction of pulmonary tissue has occurred, where the general vitality has greatly depreciated, and emaciation and marked impairment of the heart's function have taken place, cure is no longer to be expected, even with the removal of the first cause of these conditions."

We have now to consider some very interesting and noteworthy investigations of Roemer and Büchner.[30]

The former, as the result of his experimental researches, has made the surprising announcement that the same reactions can be obtained in tuberculous guinea-pigs from inoculations with proteine containing extracts from the bacillus pyocyaneus (green pus) as with tuberculin. He found that tuberculous animals died quickly after injections of such extracts, while healthy animals lived; that lesions occurred in the liver and spleen of such animals apparently quite similar, both macroscopical and microscopical, to those described by Koch as due to the specific action of tuberculin. Büchner has corroborated Roemer's observations of the effect of injections of the proteine of the bacillus pyocyaneus and has found similar effects to follow the use of the proteine of other bacilli, namely, pneumo-bacillus (Friedlander) and the bacillus prodigiosus. Inoculations of healthy men with minute doses of the proteine of the pneumo-bacillus or the prodigiosus were followed by redness and swelling at the point of injection and a local rise of temperature which gradually disappeared, and of quite similar character in the different persons experimented upon. Constitutional symptoms were not produced, Büchner suggests, on account of the smallness of the dose administered. The pronounced local reaction in comparison with that of tuberculin, he believes to indicate a more serious action of the proteine. Büchner concludes his report of his investigations as follows: "Are the proteine extractives of the tubercle bacillus alone capable of exciting a latent irritation to an appreciable inflammation and necrosis? Are not other ordinary exciters of inflammation, especially proteines from harmless kinds of bacteria, possessed of the same power?" The observations reported by him, he thinks speak favorably for such a possibility, and open therefore in a practical manner new, and perhaps not unimportant, outlooks.

In the light of extended experimental investigations and of numerous clinical observations, the incorrectness of many of Koch's original hypotheses and conclusions is evident. It has been shown that tuberculin contains not one, but several active principles, respectively capable of producing different effects; that whatever remedial action it may possess resides *apparently* in certain of its albumoses, while its harmful properties are seemingly due to the non-albuminoid substances present in the extract. With the knowledge that tuberculin is the concentrated fluid medium in which the bacilli have been growing, thus presumably containing the products of their growth and the proteins derived from their bodies. Prudden's experimental studies[31] of the action of *dead tubercle bacilli* would seem to be further corroborative of the above views. His experiments indicate that the dead bacilli, freed so far as is possible from the products of their growth, are capable of enormously stimulating cell activity and of producing lesions morphologically similar to tubercle, but which are not *indefinitely progressive* and *do not tend* to the *production of an advancing coagulation necrosis* and *finally do not induce an infectious disease.*

A legitimate conclusion from these observations would seem to be that the coagulation necrosis which Koch's hypothesis regards as the remedial mode of action of tuberculin, is dependent upon a metabolic product of the growth of the bacillus.

In view of the remedial effects obtained by Hunter, Cheyne, and Klebs from the use of a tuberculin presumably freed from metabolic products and the apparent demonstration by Prudden that a constituent of the protoplasm of the dead bacillus, probably a proteine, is capable of enormously stimulating cell activity, it is justifiable to feel that much light has been thrown on a most complex question.

Whatever beneficial results were obtained from Koch's original tuberculin, I am convinced were not through, but in spite of, a production of coagulation necrosis; and that the benefit claimed to-day by many from its use in exceedingly small doses, is partly through the avoidance of such an effect. In exceedingly minute doses it is possible that the action of the cell-stimulating proteine preponderates and thereby a remedial influence is exerted.

A rather large clinical experience now extending over a period of eighteen months, leads me to reiterate an opinion previously expressed: "that tuberculin contains a remedial principle." This view is shared, among our own countrymen, by Trudeau and Von Ruck, gentlemen who have enjoyed in their sanitaria, the widest possible opportunities for thoroughly studying the subject.

In a recent communication by Schede, of Hamburg,[32] than whom no Continental surgeon has a larger clinical experience, a similar opinion is expressed. In concluding this portion of my subject, I cannot but express my abiding and earnest belief that the continued and exhaustive investigation of Koch's discovery will lead either to such modifications of the original extract or to the preparation of a new one based upon a similar principle, as will place in our hands an agent specific in character and remedial in tuberculosis, in a degree hitherto believed to be unattainable.

The results obtained in the wards of St. Luke's Hospital in the treatment of pulmonary tuberculosis with modifications of tuberculin already effected, will be appended to the present lecture.

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(To be continued.)

Original Articles.

THE PATHOLOGY OF PELVIC INFLAMMATIONS.[1]

BY REGINALD H. FITZ, M.D.

Pelvic inflammations relate to those of the wall and to those of the contents of the pelvis. The former affect the parietal peritoneum and the sub peritoneal fibrous tissue, while the latter concern the uterus, tubes, ovaries, ligaments, bladder, rectum, and, sometimes, displaced abdominal contents, especially the vermiform appendix, which have entered the pelvis. At this meeting it is presumable that the discussion will be especially limited to the consideration of the inflammations of the pelvic wall and of the female genital apparatus. Since inflammation of the peritoneal or sub-peritoneal tissue of one part is likely to become rapidly extended to another, it has been found convenient to speak of a pelvic peritonitis and of a pelvic cellulitis in contra-distinction to a metritis, a salpingitis or an oöphoritis, although an inflammatory process in one of the organs concerned is likely to be associated with an inflammation of its peritoneal covering or adjacent fibrous tissue.

The term pelvic cellulitis dates back to elementary ideas of the structure of connective tissue and to erroneous views of the pathology of pelvic inflammation. Then, a cellular tissue was one containing holes, such as might be inflated, for example, the subcutaneous connective tissue; now, the only cellular tissue is one which contains cells, living or dead. In former times, the so-called cellular tissue was the place where pus and abscesses were often found, and a pelvic abscess was supposed to lie either in the peritoneal cavity, an encysted or circumscribed peritonitis, or in this cellular tissue of the pelvis, a pelvic cellulitis.

At present, not only is the term, cellular tissue, becoming obsolete, but pelvic abscesses are known to occur with comparative infrequency in the pelvic connective tissue. What were, formerly, supposed to be so situated are, now, known to be, for the most part, cases of pyosalpinx, pus-tubes.

But an inflammatory process may lie in the connective tissue of the pelvis. It usually arises, in the female, in that portion of the sub-peritoneal fibrous tissue near the uterus, to which the distinctive term of parametrium is applied.

This parametrium is the loose, fibrous tissue which extends from the lower half of the uterus outwards between the peritoneal layers of the broad ligaments, in front and behind towards the bladder and rectum, while, downwards, it surrounds the upper part of the vagina. It is continuous everywhere with the pelvic fibrous tissue of which it is a part, and, thus is immediately connected with the sub-peritoneal, fibrous tissue in general and with the ischio-rectal and subcutaneous tissue of the perineum. The parametrium does not extend to the upper half of the uterus. From a point corresponding to the inner os the peritoneum is closely applied to the muscular wall of the uterus, whereas below this point, the loose, fibrous tissue of the parametrium lies between.

In the case of an inflammatory process affecting the peritoneal covering of the body of the uterus, the term perimetritis is applied to discriminate it from a parametritis affecting the loose tissue lying between the cervical portion of the uterus and the peritoneum. These two conditions may occur quite independently of each other.

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[1] Intended as introductory remarks at the meeting of the Section in Obstetrics and Gynecology of the Suffolk District Medical Society, Wednesday, January 13, 1892.

The perimetritis tends to spread to continuous and contiguous surfaces of the pelvic peritoneum, and even to portions of the intestinal peritoneum which come in contact. It rarely extends for any considerable distance into the uterine wall.

A parametritis on the contrary, not only spreads laterally in every direction, following the course of the lymph- and blood-currents, but it usually reaches to the peritoneal covering of the parametrium, and, thence proceeds to the peritoneum of the pelvis and abdomen.

From the etiological point of view most severe pelvic inflammations are the result of an infection of the surface of the genital tract from without. The infective material and its products are either carried along the surface, from without inwards, to the ends of the tubes and into the pelvis, or through the wall, usually lacerated or ulcerated, into the blood- and lymph-vessels.

It is unnecessary to say that the infective substance is now regarded as of bacterial origin and as usually introduced from without through a lack of efficient cleanliness on the part of others during parturition or at operative attempts to induce abortion or to treat genital disease. The infective or septic varieties of pelvic inflammation thus, commonly, arise. In this series are also to be included those instances of auto-infection, through lack of sufficient personal cleanliness, where bacteria and their products invade the body through the genital tract, there having been no instrumental or manipulative procedures. The most striking instance of this auto-infection is to be found in the occurrence of, even fatal, peritonitis, during and towards the close of menstruation, by the dropping of infected catamenial fluid from the Fallopian tubes. This occurrence, it is needless to say, is unduly favored by the prevailing fear of menstruating women to keep the external genitals clean by washing during the monthly flow. Other illustrations are furnished by the so-called, spontaneous origin of puerperal fever and by the suppurative peritonitis which may result from a ruptured, tubal pregnancy.

Under the infective forms of inflammation are also to be included the gonorrhœal and tubercular varieties. The former is now universally recognized as one of the most frequent and important causes of the chronic and recurring varieties of pelvic inflammation and whose appreciation is of the utmost importance in the treatment of this affection. The tubercular inflammations are of less practical importance since the resulting initial disturbances are usually insufficient to produce severe symptoms and the more important, tubercular processes elsewhere in the body are so extensive and serious as to divert attention from the former. In the tubercular, pelvic inflammations the infection is usually from the fimbriated end of the tubes, and is ordinarily discovered after operative treatment for some other supposed disease.

All pelvic inflammations, however, are not infective, although the severe forms are of this nature. The frequent presence of adhesions between the surface of pelvic tumors, especially uterine and ovarian, and the peritoneum are instances of a pelvic peritonitis, often so mild as to have taken place without suggestive symptoms. Still symptoms of greater or less severity may be associated with these milder varieties of non-infective inflammation, and may result from the rupture of an ovarian cyst, or from a twisted pedicle. Many retro-uterine hæmatoceles belong in this series. Such mild, non-infective, perhaps traumatic (mechanical or chemical) varieties of pelvic inflammation largely account for the rarity with which the pelvis is found free from adhesions at post-mortem examinations.

Before the days of frequent laparotomies the pathological anatomy of pelvic inflammation was, necessarily, studied after death. The lesions then found were the fibrous and fibrinous adhesions and membranes, the collections of serum, fibrin, pus and blood, with which all were familiar as evidences of old or recent, circumscribed or recurrent, pelvic peritonitis. The tubes were not infrequently found tortuous and obliterated, thickened and dilated, their contents usually watery, though sometimes cheesy or purulent. Those days furnished the natural history of pelvic inflammations and showed what would happen if the patients were, practically, let alone. But, of late years, it has been found that our knowledge of the pathology of pelvic inflammations was capable of a wider enlargement by the study of material obtained from the abdomen during life. The contributions of chiefest importance thus furnished were the diseased Fallopian tubes. It was found that a suppurating tube was the usual cause of a recurring, pelvic inflammation. A pus-tube often proved to be the chronic pelvic abscess, which hitherto had been supposed to lie in the pelvic, fibrous tissue, and whose healing proved so obstinate, when opened through the vagina, rectum or abdominal wall. This obstinacy became explained when it was evident that the result of the operation, as then conducted, was, essentially, to establish a tubal fistula, along which a catarrhal secretion would flow when pus ceased to be formed. The study of pus-tubes obtained by the laparotomist, in connection with Noeggerath's investigations, has shown that the gonorrhœal virus is the usual cause of this lesion and the important group of symptoms associated with its presence. It is, perhaps, well to say *usual*, and not *only*, for the experience of both laparotomist and experimental pathologist agree in recognizing the frequent failure of gonorrhœal pus, escaping from a pyo-salpinx, to infect the peritoneum, while the pus in a tube resulting from puerperal or operative infection usually possess properties of extreme virulence.

The study of the tubes removed by the laparotomist has led to another important contribution to pelvic pathology. It has made clear that the usual cause of the pelvic hæmatocele and of the hæmatoma of the broad ligament was a ruptured tubal pregnancy. The customary failure of the rupture to produce more than a bland inflammation was readily explained when it appeared that the usual seat of the rupture was through that portion of the tubal wall corresponding to the placental insertion, and was thus removed from any continuity of surface with the tubal canal which might contain infective bacteria. On the contrary, a direct rupture into and through the tubal canal would offer a satisfactory explanation for the suppuration of the hæmatocele which, sometimes, precedes the operative attempts at the relief of the latter.

It may be stated, in conclusion, in order to promote the object of the meeting:

That pelvic inflammations affect the wall and contents, and that inflammation of the former usually results from disease of the latter.

These inflammations are simple and infective. The former result from traumatic agencies, as a ruptured cyst, a twisted pedicle, a prolonged labor or a tumor. The latter are septic, gonorrhœal or tubercular. The sepsis results from bacterial invasion under conditions associated with pregnancy and menstruation, or with attempts at diagnosis and treatment, as in the passage of sounds, the use of tents, instruments and manipulations. The pelvic abscess is usually either a pus-tube or a circumscribed peritonitis, the former far more common than the latter, especially in chronic and recurrent cases. Abscesses of the sub-peritoneal, fibrous tissue of the pelvis may occur, usually proceeding from the uterus as a suppurative parametritis and rarely attain a size to be confounded with the previous varieties.

Both the simple and infective forms of pelvic inflammation may result in adhesions, chronic adhesive peritonitis, and in thickenings of the parametrium, chronic parametritis. The former are the chief cause of uterine displacements, the latter are less frequent, and are usually so situated as to produce but little mechanical disturbance.

Simple forms of pelvic inflammation are frequently unavoidable, and, as a rule, require simple treatment, this chiefly medical; infective forms of pelvic inflammation are largely avoidable, immediately or remotely injurious or dangerous to life and well-being, and generally demand treatment by surgical methods.

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THE TREATMENT OF PELVIC ABSCESS.[1]

BY ARTHUR T. CABOT, M.D.

In speaking of pelvic abscess, I refer to cases where a considerable collection of pus exists, and in which, therefore, temporizing measures seem no longer applicable, but for which a radical operation for the evacuation of the pus in some way or other is called for. I hope to hear something said about the pathology of these abscesses. Practically, as they come to the eye of the surgeon, the parts are so tied up that it is very difficult to say whether the abscess is still confined to the Fallopian tube, whether it has already opened through the wall of the tube and is contained between the folds of the broad ligament, or whether, having opened outside of the tube, it is shut in by adhesion of the intestines above, making an abscess cavity with peritoneal walls, such as we see in cases of ulcerated appendix vermiformis. The pelvic abscess having peritoneal walls may also result from inflammation occurring in an hæmatocele.

The medical journals have been full of articles advocating the treatment of these abscesses in the pelvic cavity by laparotomy. Led by Mr. Tait, a number of enthusiastic laparotomists hold that the better way of treating all of these cases is by incision through the abdominal wall. Their obvious argument is that you get a better view of the condition, can proceed more intelligently to treat it properly, and can usually remove the whole abscess cavity, with its wall. While I am inclined to assent to this position for the most part, I am far from believing that the abdominal incision is the only treatment for these cases, or that it is in all cases the best treatment.

The advantages claimed for a treatment by laparotomy are, quick healing and the absence of relapse. If the pus-tubes can be thoroughly removed, the case heals up almost like a simple ovariotomy, and the patient is quickly well. When the tubes have been thus removed, there is naturally little, if any chance of a recurrence of the abscess. These advantages, however, are not obtained in those cases in which an abscess being found which cannot be entirely peeled out, drainage has to be resorted to, for in such a case, there is quite as much likelihood that the abscess will be chronic, or will recur, when the drainage is put in over the pubes as when it is introduced through the vagina. In those cases in which drainage is to be established, the operation through the peritoneal cavity is more dangerous than the simple opening of the abcess into the vagina. Even in some of the cases in which the abscess wall is wholly removed, the close adhesion of it to the rectum may lead to a fæcal fistula. These are in some cases serious disadvantages.

Further, it sometimes happens that one removes tubes and ovaries unnecessarily. It is very difficult for an operator who has just opened the abdomen to do a radical operation and who feels that, in order to justify the operation he must obtain a permanent cure, to leave a doubtful tube on the other side. He perhaps removes a large pus-tube from one side and finds the other tube somewhat thickened. It is then often hard to tell whether this may be left, or must be removed; and in fact, Tait recommends invariably removing both tubes in these operations. In a young married woman, or in a woman who expects to be married, this may be a decided disadvantage.

The last disadvantage of the abdominal operation is that, after the removal of the tubes, the scars in the broad ligaments, which have at first shortened them, melt away, and leave the uterus with less support than before. In some of these cases I have seen a very troublesome tendency to prolapse and retroversion.

These are some of the reasons which make the abdominal operation fall short of a perfect cure. On the other hand, we know that these pelvic abscesses not infrequently seek an outlet into the vagina, and that even when they are not pointing, they are often easily felt from below. An opening made through the vagina is necessarily a dependent one and gives very good drainage. The disadvantages that are urged against an opening in this direction are, that it is slow of healing, leaving sometimes a fistulous opening; and that the abscess, when thus treated, is likely to recur. These disadvantages are ones which were attached to this operation largely in pre-antiseptic times, and do not hold in the same degree now. It has been my experience in a large number of these operations that if the drainage was kept up by a tube until the abscess had contracted down to a small fistulous tract, this fistulous opening almost invariably closed after the removal of the drainage-tube, and that the cure has been lasting.

Now, how are we to select the proper cases for one operation or the other? I should say that a localized abscess down in the pelvis, which is easily felt through the vagina, should be opened below. In some of these cases such as Dr. Chadwick has described, in which there is an almost board-like hardness of the parts, if an abscess has formed, you may feel somewhere a softer, less resistant point, and pressure upon this is often somewhat painful. In such a case, after the vagina has been rendered aspetic, exploration with the needle may be safely made, and in case pus is found, a director can be passed alongside of the needle and upon this as a guide the incision can be made into the cavity. The incision should be a small one, and a dilator should be relied upon for afterwards enlarging the opening. Free cutting in this region sometimes leads to troublesome hæmorrhage from the venous sinuses which exist about the uterus; but an opening made in the way that I have described is an almost bloodless operation, and I have never met with a hæmorrhage which was not immediately stopped by the introduction of the drainage-tube.

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[1] Remarks made at the meeting of the Obstetrical and Gynecological Section of the Suffolk District Medical Society, January 13, 1892, during the discussion on "The Pathology, Diagnosis and Treatment of Pelvic Inflammations."

After this operation, which I have done a good many times, I have not been troubled with a relapse in any case in which the tube was retained for the proper length of time. The mistake often made is that of taking the tube out before the abscess cavity has entirely closed down upon it. I use a T-shaped tube, cut short, so that it does not protrude from the vagina, and does not interfere with thorough vaginal douches, which are carried out with hot, antiseptic solutions two or three times a day. The tube, thus made, retains its place perfectly in the abscess, even when the patient is up and about.

When, on the other hand, the induration and hardness does not come down into close contact with the vagina, but where the Fallopian tubes can be made out as sausage-like swellings high up in the pelvis, we have a condition in which laparotomy is demanded. Between these two extremes, the judgment of the surgeon, guided by careful examination, must determine whether the pus in a given case is readily accessible from the vagina, or whether the chance of being able to thoroughly remove the pus cavity makes it wiser to approach the case from above.

The cases to which I have alluded in the above remarks are the more chronic ones. Occasionally we have a case of acute suppurative salpingitis, or an acute exacerbation in a chronic case, which may indicate the extension of inflammation to the peritoneum, and in such a case laparotomy is imperatively demanded. Dr. Chadwick spoke of the occasional difficulty of diagnosis between appendicitis and inflammation in the pelvis. This is one of the reasons which would make me prefer a laparotomy for those inflammations which extend high up in the abdomen, in order that the case may be thoroughly understood and intelligently treated.

I remember one such case in which, believing that I was doing an operation for appendicitis, I found two very large pus-tubes and a great deal of free pus in the pelvic cavity. In that case the evidence of abdominal inflammation was clear; the laparotomy was the only operation thought of, and the patient made a good recovery.

Before closing these rather desultory remarks, I wish to speak of one puzzling case, in which with every sign of an abdominal abscess, I operated and found no abscess. The patient was a girl of fourteen, who for four or five weeks had suffered from a good deal of pelvic inflammation with pain and high fever. This followed exposure from sitting on the damp ground at the close of menstruation. A hard mass was to be felt rising up out of the pelvis, well towards the umbilicus, and the pelvic cavity was filled with a mass of bony hardness. The pain and high temperature persisted for so long that it led to the belief that there was pus somewhere in this cake of exudation. As she was running down-hill an operation was decided upon, and I made an incision over the mass, in the median line. The peritoneum was thickened and adherent to this mass, so that I did not at first open the general peritoneal cavity. After plunging a needle, and then a trocar, into the tumor in several directions in search for pus and finding none, I then opened the general peritoneal cavity above in order to get a clear idea of the topography, and found rising out of the pelvis an irregular mass of exudation which bound all the organs together, and so masked them that you could not tell where the uterus, or other pelvic contents were. No softening could be felt anywhere, and feeling very much dissatisfied with the operation I sewed up the abdomen. From that moment she made a good recovery. The mass rapidly disappeared, and we were all very much gratified, although we did not know why it should have done so.

I have since heard of other similar cases, and I have no doubt that gentlemen who are more practised in gynæcology have seen many such. It was, however, an unique experience at that time to me.

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Clinical Department.

A CASE OF COLOCYNTH POISONING,

BY WM. A. ROLFE, M.D., BOSTON.

As instances of colocynth poisoning are somewhat rare, I desire to put on record, through the columns of the Journal a case which occurred in my practice last year.

Miss M., a delicate young woman of twenty-five, finding herself pregnant, and wishing to induce abortion, acted under the advice of a dressmaker who recommended taking powdered colocynth in hot gin as an infallible remedy.

The amount taken, was, as near as I could judge, about a quarter of an ounce of the powdered drug in a half-tumblerful of gin. This mixture was swallowed at about ten P. M., and I was called at twelve. On arriving at the house, I found the woman on the floor in a state of collapse. The face was pale and pinched, respirations shallow, and all the extremities cold. The pulse was absent in both wrists. There had been intense vomiting and purging, the later discharges being bloody.

She was placed in bed, and surrounded by hot-water bottles, and given brandy and digitalis hypodermically. She rallied in about an hour and commenced to vomit and purge again, and complained also of great pain in the stomach. A glass of warm water was given with the hopes that it might bring up any of the drug which might still be in the stomach.

Continuing to vomit until she was well-nigh exhausted, I concluded to stop the retching by morphia. Three-quarters of a grain were required to quiet the stomach, the amount being given in a space of half an hour's time. The resulting gastro-enteritis was treated by milk diet, and the administration of powders of bismuth subnitrate and salol.

She made an uninterrupted recovery in about ten days. Strange to say, abortion did not result, as might have been expected from the indirect action on the uterus.

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AN UNIQUE DISLOCATION OF THE FOOT, AND OF THE ASTRAGALUS.

BY JOHN R. HAM, M.D., DOVER, N. H.

I WAS called on April 25, 1892, to S. W., the proprietor of a portable steam-mill, who, while sawing logs, came in contact with a piece of shafting which was revolving at the rate of six hundred times a minute.

He may not have made more than one revolution when his clothing gave way and he was rescued. I found the malleoli widely separated and projecting; the foot forced directly upwards and firmly wedged between the tibia and fibula; the depth of the foot from the extremities of the malleoli was obliterated; and the movements of the foot gone. There was no fracture, nor was there any external wound.

Under strong extension and counter-extension the foot was finally loosened and pulled down from between the bones of the leg, which came together with an audible snap when the wedge was removed.

I now discovered a complete backward dislocation of the astragalus, which lay between the tendo-Achillis and the posterior surface of the tibia.

The reduction of this bone was a much more difficult matter, but after half an hour's effort aided by two strong assistants in extension and counter-extension, and when on the point of despair as to a successful issue, I succeeded in slipping the bone in place.

Ether was not used because it was not on hand and, the patient being three miles from the city, it was not thought best to delay in the reduction.

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Reports of Societies.

OBSTETRICAL AND GYNECOLOGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

GEORGE HAVEN, M.D., SECRETARY.

REGULAR meeting, Wednesday, January 13, 1892, the President, Dr. C. M. GREEN, in the chair.

ANATOMICAL SPECIMENS.

DR. C. P. STRONG: I have here a very small cyst of the broad ligament which I removed this morning, and which is interesting for one or two reasons. The patient was a girl of twenty-two, who had always been perfectly well except that she had menstruated only about once in eight or nine weeks, — irregular in that respect. Until eleven weeks ago she had not known what it was to be ill at all. Then she was upon her feet a good deal, and commenced to have pains in her left side which constantly increasing, had made her an invalid so that she had spent most of her time in bed since I saw her for the first time about three weeks ago, and then made out a cyst of some kind. I thought it was a small dermoid back of the uterus. I advised operation on her at once without any treatment because the family were dependent on her efforts to earn money. I operated to-day and found this cyst lying in the broad ligament. This ovary which was also removed, was very much larger than now appears, due to a large cyst in its interior which has been ruptured. The tubes were apparently perfectly normal.

Another interesting point is that the broad ligament of the other side is similarly affected, the only difference being that on the right side the cyst growing in exactly the same location was about the size of an American walnut. The right ovary contains numerous small cysts, but as I did not see any reason if the cysts were opened and their walls destroyed that they would grow again, under the circumstances I thought it best to run the risk of a second laparotomy at some future date and allow the ovary to remain. That ovary was considerably enlarged. I laid open the cyst and thoroughly cauterized its interior wall.

The point of interest aside from the condition of the tube and the parts on the other side being similarly affected, was the great amount of disability arising from the presence of these cysts, and the fact that they had come on so suddenly. There were no adhesions, nothing to account for the great pain from which she certainly did suffer.

THE PATHOLOGY, DIAGNOSIS AND TREATMENT OF PELVIC INFLAMMATIONS.[1]

DR. J. R. CHADWICK: There are so many starting-points for inflammation in the pelvis that it is hard to speak of the diagnosis and go over the whole ground. What we have to consider generally are pelvic peritonitis and pelvic cellulitis. While the symptoms do not vary essentially between the two, my experience would teach me that they vary somewhat in degree, that is, that a pelvic peritonitis gives rise to much more violent symptoms than pelvic cellulitis. The symptoms briefly may be said to be first a chill followed by pain, constant and lancinating, and fever with, on the second or third day, more or less metrorrhagia with some distention of the bowels, sometimes a diarrhœa, not regularly. Those, I presume, would be accepted as the symptoms that are generally present.

In peritonitis of course the location of the pain in the early stage is characteristic of the part where the inflammation originates. From that point of origin the disease may spread indefinitely. Of course it involves more or less all the organs which are invested with peritoneum, habitually starting, as the pathology to-day I suppose would say, in a large number of cases from inflammation of the tubes, originating undoubtedly often from hæmatocele, and, as I believe, originating sometimes from traumatism; that is, I cannot satisfy myself that the cases are all attributable to the introduction of germs, though I know that is held by many.

In regard to the diagnosis, we have had the symptoms of the physical conditions. The most striking is the induration which is felt through the roof of the vagina, especially the posterior cul-de-sac. I should say, before going further, that in my experience the pelvic peritonitis is the common disease. Pelvic cellulitis is extremely rare, a statement that is in opposition to what most of our older books held. I have not found one case of cellulitis to one hundred of peritonitis according to my diagnosis. The induration which is felt by the vagina is of course limited in the case of peritonitis to the peritoneal cavity, that is, it cannot descend lower than Douglas's cul-de-sac. There is furthermore an infiltration into the tissues over which that peritoneum lies. You find the peritoneum firmly adherent there, absolutely immovable, and the chief feature which is almost pathognomonic, is the board-like feel within the first two or three days of a pelvic peritonitis. I say board because it runs straight across. There is insinuation of the finger between the effusions and the walls of the pelvis as is possible when the pelvis is occupied by fibroid. Then you have a distension of the abdomen which more or less interferes with examination, but by the bi-manual examination you can pretty generally feel the extent of the effusion. The body is immovable, but by persistent abdominal pressure you can get a little intimation of an impulse through this mass of effusion. In two or three weeks the mass loses its hardness and feels cartilaginous, and from cartilaginous into less rigid feeling; finally, in the later stages, it seems as if you could not push the vagina up as far as it ought to go. You have had of course with this disease constipation either naturally or brought on by the use of morphia. There is generally some irritability of the bladder, though not always. If the effusion is in Douglas's pouch, you have the uterus shoved forward against the pubes, or if it is more lateral, transferred to one side or the other.

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[1] See articles by Drs. Fitz and Cabot on pp. 491 and 493 of the Journal.

Then for cellulitis, the cellular tissue lies beneath the peritoneum and consequently you frequently have a cellulitis more extensive laterally and extending generally rather lower in the pelvis. It is a matter of degree, and you cannot always distinguish between the two. As the effusion is absorbed you find the uterus generally moving back into its place, but not always. It often may have contracted adhesions in the place to which it has been pushed, adhesions resulting from the same inflammation of which the effusion crowded it over. You may ultimately have the uterus retroverted or crowded down into anteversion. It may be more essentially an inflammation of the peritoneum covering the uterus, in which case the uterus may be covered with an effusion which makes it four or five times its natural size. Once in consultation I diagnosticated peritonitis complicating a fibroid tumor. Two or three months afterwards the doctor wrote to me that the fibroid had disappeared entirely with the effusion. It seemed as if I had erroneously mistaken this large mass for a fibroid and it had been absorbed.

Now in the way of differential diagnosis, there are a great many things which may be mistaken for these common diseases. I spoke of salpingitis as being the starting-point of most of these attacks of peritonitis; and we have consequently a difficulty in diagnosticating between a very moderately circumscribed peritonitis and suppuration in the tube without any escape of pus.

Inflammation of the ovaries I have put down very rarely in my books in the last ten years, and it seems as if in the pathology of women the diseases of the ovaries other than cystic enlargement have disappeared pretty much, that is, the woman no longer exists on account of her ovaries, but for something else. I have seen a few, and lately very few, cases of inflammation of the ovary recognizable as a small rounded body somewhat enlarged and tender, rarely accompanied by fever or acute pain, and I do not find very many reflexes, not as many as other men apparently do.

We have, of course, in the differential diagnosis to think of all the varied diseases that may occur in the abdomino-pelvic cavity. We have to bear in mind psoas abscess which may come down and produce symptoms there, though rarely. We have to remember inflammations of each of the different organs that are there and the tissues around them, for instance, the various tissues of the kidney, dropsical kidney or floating kidney. I have found a floating kidney in the pelvis supposed to be a fibroid. Perinephritic abscess may not infrequently be taken for pelvic. You have to bear in mind all the renal colics and ureteral colics and various diseases of the bladder, which in rare instances puzzle you, as well as morbid growth. Perhaps the principal diagnosis is between these inflammatory affections and cysts of the ovaries and fibroids of the uterus. You have to bear in mind that any of these tumors are liable to inflammations within themselves as well as inflammations around them; that there may be ulceration and inflammation and suppuration inside of an ovarian cyst that will give rise to fever, and perhaps adhesions on the outside of it to the pelvis which puzzle you a good deal. Generally you can distinguish a tumor by the fact that the induration does not run straight across the pelvic floor. You may have a fibroid that is inflamed or sloughing or has inflammations around it.

Then you have the catarrhal diseases of the intestines which sometimes cause fever. There, of course, you have the diarrhœa to aid you chiefly in your diagnosis, though that is not an absolute sign. You have tympanites on percussion, and you have the tenderness universal, and vomiting, and other symptoms, which generally will help you.

Intussusception, constriction of the intestine and stricture all need to be borne in mind, and morbid growths of the intestines and appendicitis. I remember very well a case I saw with Dr. G. H. Lyman in the City Hospital. A young girl had a tumor on the right side of the uterus, bigger than an apple, attended with some fever; and I think every one diagnosticated an ovarian cyst with some inflammation around it. To the surprise of every one, after two or three weeks, that disappeared. She came in later on, and it was again found. Then I saw her outside a number of times, when the tumor would appear and disappear. All this happened eight years ago, before we had learned so much about appendicitis. Finally, I operated, and got down upon the intestine, which was matted together on the right side, in a mass containing a bluish place, into which I put the aspirating needle and got pure blood, which scared me, and I let it alone and put a drainage-tube down to that spot, and in three days I had a gush of pus, and the whole trouble ceased. I have seen her within a year, and she is perfectly well. I have no question that that was appendicitis. At the time of the operation I did not think it was wise to go into it especially as the tapping with the aspirator drew out pure blood.

Of course ascites and tubercular peritonitis are pretty easy to distinguish. I do not mean that you can distinguish a tubercular peritonitis as tubercular necessarily, but you can distinguish it from pelvic inflammation.

Abdominal hyperæsthesia, extra-uterine pregnancy. When you come to extra-uterine pregnancy the diagnosis has been pretty well threshed out of late years. It is a very important one to make, because it is important to act promptly. I think we rarely see such a case before the tube has ruptured. Taking it after rupture, you have a certain amount of exudation, which has pushed the uterus to one side, and a very peculiar condition of the patient, subject to lancinating pains, not severe enough to be those of peritonitis, not attended with fever enough for acute peritonitis, and often subsiding for a day and letting the patient get up. With that you invariably have a little loss of blood from the uterus, continuously after the fifth or sixth week. You find the uterus crowded to one side, enlarged; and if you are so lucky as to get the decidua when it is cast off, you have the means of establishing a diagnosis of pregnancy, not always that the pregnancy is extra-uterine because there is nothing absolutely characteristic in the decidua as to whether it is extra- or intra-uterine. Taking all the symptoms together, and making sure that the uterus is empty, you can establish a diagnosis with a very strong presumption of its being correct. I have not seen very many — four or five — such cases, and I have diagnosticated them all. Once or twice besides I have written in my note-books, "Look out for extra-uterine pregnancy," where it proved subsequently not to exist. Last year I had a case where, in fact, every symptom of extra-uterine pregnancy existed. The woman had been flowing a month, and the only thing different from what would be expected was that the pain was not on the side of the induration. Seeing her with Dr. W. L. Richardson later on, we decided that we must make sure that the uterus was empty. After dilating the cervix a little, I extracted the fœtus from within the uterus. I was all ready to operate on the extra-uterine pregnancy, and every symptom was characteristic except the one point already alluded to.

I have overlooked a very important class of cases which probably are the starting-point of many cases of peritonitis, that is, hæmatocele; and hæmatocele may come at any point, may be of any size, and gives rise to more or less fever, sometimes a great deal, generally very much less than peritonitis. The symptoms are all less severe. It is not always fluctuating; in fact, you can generally feel it as more or less solid. There is generally less induration around it. Dr. Cabot will not have forgotten the case he saw with me last year where a woman came from St. Paul to have a big fibroid removed. On examining I found the fibroid, but the vagina so compressed by a pelvic abscess that I could not reach the cervix. I tapped it per vaginam and evacuated a quart of pus. In about ten days it had drained pretty dry, the tube slipped out, and the next day there was a sudden access of pain, and a tumor rising almost to the right kidney, with evidences of renal irritation, that is, casts, albumen, etc. I suspected that I had withdrawn the tube too soon, so that the abscess had filled up, or that the ureter had been occluded by this inflammation, and I had to deal with a distention of the ureter or kidney. Dr. Cabot saw her with me, and we could not make out certainly, but we rather suspected there was distention of the kidney. We tapped it, and found pure blood. It was nothing but an hæmatocele. She was well in two or three weeks, and has remained so ever since except for the fibroid.

We must not forgot cancer occurring in the pelvis outside of the uterus. I have only seen two or three cases occurring in the retro-uterine space. One I saw in consultation with Dr. Sarah M. Crawford, which she had diagnosticated as cancer for some cause that I never could make out, I found no reason for believing it was cancer. She had a firm induration, not in the acute stage of inflammation, an old effusion as I thought — behind the uterus, and I said I did not think there was any cancer; but she died of cancer originating from that point.

Dr. F. H. Davenport: The subject of pelvic inflammations is so broad a one that I shall merely give in outline my views as to the treatment of the more common pelvic inflammations that we meet with, namely, pelvic peritonitis and cellulitis, and the most common cause probably of pelvic peritonitis — inflammation of the appendages of the uterus.

The pathology of these inflammations has changed much in the last fifteen or twenty years, and of course the treatment has changed as well. In the first place, before the principal origin of pelvic inflammations was recognized to be an inflammation of the tubes, the treatment was almost exclusively medical. That was the case, partly because the true pathology of these inflammations was not recognized, and partly because there was still fear of opening the abdominal cavity except in cases where there was evidence of a large tumor. With the change in the views as to the pathology, and the greater freedom in opening the abdominal cavity, medical treatment was almost entirely neglected in the large proportion of these cases. Of late years, however, there has been a reaction on the part of surgeons, generally, to limit the cases treated by purely surgical methods to certain clear indications, and under those conditions and as a result of them, the medical treatment has come rather more prominently into the foreground. At least, there has been a disposition on the part of practitioners to see if good results could not be obtained in other ways.

In acute inflammations of the peritoneum and of the cellular tissue operative measures are rarely considered. The laws of treatment are well understood and very simple; they are to insure rest and quiet on the part of the patient, and such relief to pain and to the acute symptoms present as can be given by medicines and soothing applications. The application to the abdomen of hot applications, turpentine, mustard poultices and soothing applications to the vagina when the sensitiveness will admit of such applications in the way of douches, and relief to the pain by anodynes, rest in bed and supporting treatment are the principal measures employed. In one respect, however, there has been a change in the views regarding the treatment of acute pelvic inflammations, and pelvic peritonitis in particular, and that is in the use of opium. It was formerly taught, and supposed that the safety of the patient demanded that the bowels should be kept absolutely at rest since even the peristaltic movement might set up fresh inflammation, and favor the extension of the existing inflammation to the upper part of the peritoneal cavity, With that idea, large heroic doses of opium were given and the attempt was made, and usually successfully to so paralyze the bowels that there was no action whatever, but it has been found that under these circumstances the resulting paralysis favors tympanites to such an extent that it increases the amount of pain; the patient suffers from the constipation which is caused by the treatment, and measures for the relief of the constipation are liable to start up a fresh inflammation. Therefore, especially in cases of septic origin, after the acuteness of the pain has been to some extent controlled by morphine, the present treatment, which to my mind is the best, is to keep the bowels moved at short intervals with calomel or salines, which not only seems not to have a bad effect on the existing inflammation, but even in some cases to apparently favor the arrest of the septic process which has perhaps begun. So much for the acute forms of inflammation.

With regard to chronic peritonitis, that is, the results that we find after an acute process has subsided, in the form of thickenings and deposits of lymph on the various organs, under those circumstances the treatment that has been carried out and described for so long is apparently still the best. Through the vagina we can reach the results of peritoneal inflammation better than through the abdominal wall: therefore applications to the vault of the vagina, large copious, hot water douches, depleting measures by means of glycerine tampons are the procedures most in favor. When we meet a case where there is a large deposit of lymph, such as Dr. Chadwick spoke of, with the uterus enlarged to several times its size by a deposit of lymph, I have found the use of large blisters to the abdomen to be most efficacious in reducing the size and promoting absorption of this plastic lymph. Several such blisters applied at intervals of ten days will, if the patient be kept quiet in bed, in the majority of cases result in a more or less speedy absorption of these products.

With regard to pelvic cellulitis, I agree with Dr. Chadwick that the cases which can properly be called cellulitis are now very rare. That such an inflammation of the pelvic cellular tissue does occur I am convinced. In the first place, autopsies have shown this beyond a doubt, and, secondly, operations have been performed for the relief of pelvic abscess where the abscess has been shown to be distinctly in the cellular tissue.

The acute cellular inflammations are most often the result of puerperal septic processes, and in their acute stage they demand no special medical treatment more than has been outlined. Where they go on to suppuration, surgical measures are indicated for the abstraction and relief of the pus.

We now come to what constitutes the most frequent source of pelvic inflammation, and that is inflammation of the tube. The principles which I lay down for myself in determining in a given case whether medical or surgical treatment shall be pursued depend upon two considerations: in the first place, the condition of the pelvic organs, and in the second place, the circumstances of the patient. It is certainly a well-recognized fact, now, that it is unwise and unwarranted to remove, in every case, tubes and ovaries when we find them enlarged. A good deal is dependent upon the character of the enlargement and condition of the patient. Given an enlarged tube, in the first place our efforts should be to determine whether such tube is enlarged as a result of serous or purulent accumulation, or whether it is merely a thickening of the tube wall itself with some inflammatory deposit in the surrounding tissues. Into the differential diagnosis between these conditions I will not enter. There are, I think, in the large majority of cases sufficiently clear indications to point to the actual condition of the tube itself. When pus is present it is of course a general rule that the woman is safer with the offending organs removed, but I think that even that is a statement that goes a little too far, because it seems to me that there are cases even where there is pus in the tubes that can be treated by other measures than by their removal.

A second consideration to be thought of is, whether the woman can give up the time and can afford to take such care of herself as these cases demand. If she is a working woman, dependent on her own exertions for her support, and the history has been one of progressive invalidism, starting in the first place as pelvic inflammation, and from time to time showing acute exacerbations of the trouble, each attack perhaps making her worse than before, under these circumstances it seems to me hopeless to attempt to do much in the medical way. There, I think, the surgeon should be called upon to operate and remove the tubes. Where, however, a woman can favor herself in every possible way, can avoid those sources of fatigue and trouble which might bring on a fresh attack of inflammation, and can follow out our treatment carefully, I think that even in many cases where there is pus in the tubes a good deal can be done to relieve them without operation. Recently, we had a paper by Dr. Strong on drainage of the uterus in these cases, which showed to my mind very clearly that pus in the tubes, provided the uterine opening is patulous, need not necessarily call for operative treatment.

I rely mainly in the medical treatment upon the most thorough depletion of the uterus and the surrounding tissues with glycerine. To accomplish this; I use prepared wool, which has the advantage of being elastic and soft and able to hold in its meshes a large amount of glycerine. I make some small tampons of this wool and saturate them with glycerine in such a way that a tampon of the size of a hen's egg would hold about two ounces of glycerine. These I place in the upper part of the vagina and leave them *in situ* for two or three or even four days, if necessary, though I prefer to leave them in but three days, and then to remove and cleanse the vagina and replace with another tampon. In this way I accomplish two things. In the first place, I furnish a soft cushion on which the uterus can impinge as the patient moves about, which results in marked relief to pain. In the next place, it causes a profuse watery discharge which is a direct relief to the congested condition of the pelvic organs. Iodine is sometimes applied, not necessarily in every case. The effect seems to be a relief to pain. In that way I have seen not a few cases of enlarged tubes (which to me were clearly the seat of, if not a purulent at least a catarrhal salpingitis cured symptomatically, so that the patients were comparatively well, gained flesh, were relieved of the fresh attacks of pelvic inflammation which had come on at intervals of three to six months, and able to do a great deal more, and considered themselves comfortable. In one or two instances such treatment carried out carefully has been followed in married women by conception and the birth of healthy children.

Galvanism is another method of treatment which I have employed to promote the absorption of thickenings in the pelvis which have been the result probably of old tubal disease with extension to the cellular tissue or the peritoneum. It is a method that is worth trying. One thing more. It seems to me that the danger to a woman of rupture of a pus-tube is so remote that in my opinion it is hardly an argument in favor of laparotomy and removal of the tubes unless other conditions make it imperative. It seems to me that considering the few cases we read of in which death has followed the rupture of a pus-tube, that the woman runs no more risk from that source alone than she would from a laparotomy even in the hands of a skilful surgeon. I do not think there is more than one to three per cent. mortality from this cause alone if tubes the seat of purulent effusion are allowed to remain; therefore, as an argument in favor of laparotomy, where otherwise it would not seem advisable, I do not think it is of very much weight.

Dr. A. D. Sinclair: I think the subject has been reviewed mostly from the gynecologist's side and not from the obstetrician's. I think it has happened to all of us who have practised midwifery a long time to meet with cases of pure cellulitis, not peritonitis nor enlargement of the tubes, but an abscess or inflammation of the broad ligament or cellular tissue immediately around the cervix. I think that men who have pursued this subject for many years, very adroit indeed and well calculated to make good diagnoses, cannot all be mistaken in that thing, and that pelvic cellulitis is not so rare as we have heard it stated to-night. I think there is a good deal of theory afloat and a good deal written upon it. I remember when there was nothing said about pelvic cellulitis. There were various names given to this condition of things, — pelvic peritonitis, abscess, peri-uterine inflammation, and a host of other names. Bernutz and Goupil had been working up the thing for many years and published a monograph in two volumes, a most admirable thing, and created quite a revolution in the minds of men engaged in gynecology and obstetrics. I read this book, as also that of August Voisin on hæmatocele. I believe that Bernutz had a great many opportunities for making autopsies, and, by the way, that is the thing that is most striking. I have seen a great many cases of so-called pelvic cellulitis, peritonitis, etc., but I have not had the opportunity of seeing many autopsies, I think not more than three or four in my lifetime. There are the post-mortem records of two cases in the first volume of the City Hospital Reports. These cases were evidently pelvic peritonitis, and, by the way, the other night at the Obstetrical Society there was a paper on tubercular affection of the uterus. The first case recorded in that record of cases was one where, amongst others, was a uterus and tubes crammed full, I think, with tubercular matter and other débris. To go back to Bernutz, he had opportunities to make many post-mortems; and the conclusion one would come to who read his book would be that pelvic peritonitis was the chief cause of trouble, the tubes and ovaries being at fault. Conclusive as this book was, yet the world did not change its mind very much from the opinion that it held in regard to it, and spoke of these cases as pelvic cellulitis. Of course, they were wrong and were right. There are cases of both kinds. The pendulum has swung very completely of late years towards the exclusive view of its being dependent upon tubal trouble setting up inflammation around it. Inflammation of the cavity of the pelvis and effusion and the agglutination of intestines over the effusion makes it a large abscess sometimes, containing nothing but clear fluid (sometimes purulent); but there are cases of genuine pelvic cellulitis where the cellular tissue around the cervix becomes inflamed, where the inflammation extends to the broad ligaments and the tubes have nothing to do with it nor the ovaries. These cases where abscess take place are generally cases that occur in puerperal women. It is not very common that we find abscess in non-puerperal women. I am speaking now of my own experience. I happened to see many cases in Boston in my own early practice. I was the first person to read a paper on pelvic cellulitis in Massachusetts; and in the discussion Dr. Jackson said he could not see that the cellular tissue around the cervix was of such extent as to form such a mass as was described. That might be or might not be. We know that the finger, the seat of felon, becomes an enormous mass; and I think we have just as good opportunity of finding a pretty large mass in examining through the vagina in a case of swelling of the cellular tissue around the neck of the womb, because it would appear larger than it really is if the patient was not under ether. That there are abscesses of the broad ligament in the puerperal state I am convinced. They come on about the tenth day after confinement. There is not so high fever as in pelvic peritonitis, it is said. The pain would subside, but not the swelling, to come on again about the seventeenth to the twentieth day. There would be increased fever. Very likely the abscess would discharge into the rectum or into the vagina, which was more rare, although we know that in chronic cases vagina, rectum and bladder become involved.

As to the symptoms of this thing, one of the earliest symptoms I used to observe was pain somewhere about the hip and dysuria and tenderness. Then there was sometimes nausea and a little cough, — reflex. The treatment of those days was the applying of leaches to the anus. I have frequently applied perhaps a dozen leaches to the anus. We also used poultices of bran or Indian meal over the abdomen. Sometimes the application of a blister made with nitrate of silver, — pretty smart thing it is, too, — and hot vaginal douches. I do not think as I look back that we used vaginal douches very much at that time. These cases of so-called cellulitis got well. The pelvis cleared up completely; the uterus became quite free. These were the puerperal cases. There was another lot and I dare say those are the ones where the trouble depends upon inflammation of the tubes from various causes. Those cases may in a patient with poor constitution reduce the patient to such an extent as to produce death. The mortality from that class of cases is not, I think, quite settled, but I think it will reach 10% to 15%. At one time I could find no statistics over 5%.

About taking away the props of the uterus, I saw an instance of that where both ovaries and tubes were removed. The woman is worse to-day than three years ago.

Dr. W. W. Gannett: In connection with the pathological relations which Drs. Sinclair and Chadwick and Davenport have considered, it seems to me each has treated the matter from his own standpoint, — Dr. Sinclair from the obstetrician's and Drs. Chadwick and Davenport from the gynecologist's. That there is a cellulitis, such as Dr. Sinclair refers to, there can be no doubt. It represents a lymphangitis and occurs in puerperal cases. The material travels through the lymphatics and causes this inflammation in the broad ligament, and those cases are very frequently seen at autopsy. The gynecologists I suppose do not see them so frequently.

I should like to ask Dr. Davenport whether he meant by rupture of pus-tubes a rupture along their course, or would he include a discharge of pus from the fimbriated end?

Dr. Davenport: I meant a discharge of pus from the tube in such a way as to set up fatal peritonitis.

Dr. Gannett: It seems to me that perhaps Dr. Davenport laid too little stress upon that point. I can recall quite a large number of autopsies in which a peritonitis resulted from discharge of pus from the fimbriated end. It seems to me, viewed purely from the pathological standpoint, that a tube containing pus may be a constant source of danger to the woman in virtue of the possibility of peritonitis being set up thereby.

Dr. E. W. Cushing: In March, 1887, I reported 27 cases of operation for removal of diseased tubes. Since that time I have been active to a degree which I trust has not been pernicious in that direction. I wish to speak in regard to a subject that has been but little touched on to-night, and that is the neglected cases, those that do not get well under treatment. In my hospital service, and in consultation, I am more in a way to see these cases than any others.

One cause of all these troubles, which has not been dwelt on, is too much local treatment, or rather local treatment given without due precautions as to cleanliness and as to care.

Now, it is true that there are a large number of gentlemen who are practising the treatment outlined by Dr. Davenport, and undoubtedly a good many of their cases get better. Every once in a while, however, one gets worse; and there are two or three forms which that getting worse may take. The first is the case that gets rapidly worse with violent fever, tympanites, usually much aggravated by giving large doses of opium, — cases of spreading peritonitis. Those are comparatively rapid cases.

The second class of cases are those where, with long continued tubal inflammation, the ovary is affected. The ovary and the end of the tube are glued on to the lateral wall of the pelvis forming there an abscess. The outside wall of the abscess becomes eaten through by the suppurative changes and the woman begins to run down with symptoms of absorption of pus. In my experience, as long as the pus is retained in the tube itself without forming adhesions to structures where pus is to be absorbed, there is not so much general constitutional trouble. When, however, the wall of the abscess is formed on one side by the tissues of the pelvis, there is liable to supervene a condition of pyæmia.

Another course, which is generally and wrongly supposed to be salutary, is the opening of the pus-tube into the bowel: to be sure, in many cases where the opening is low down and the woman is strong, the tube seems to discharge itself into the bowel; the process of shrinking goes on, and the patient gets well. In far too many cases they do not get well. The tube fills again and discharges, and fills again, and so at intervals of from three weeks to three months the woman goes through the cyclus of fever, pain, suffering and discharge, then relief, and then the whole thing comes on again. I have had a considerable number of cases with that history.

In these three ways, — by immediate acute inflammation, by general pyæmia and by long continued wasting through repeated opening into the bowel, — the women run down, and require operation when they are in a desperate condition. If moderate treatment does not cure the woman, if she is an invalid and if there are signs of pus as evinced by high temperature, I think operation is justifiable and indicated; and if the operation is done reasonably early, it is not particularly difficult or dangerous. The difficulty and danger are from the neglect, from the recurrent attacks of inflammation matting everything together, from old openings into the intestines which have to be found if possible, although sometimes everything is so glued with lymph that it is neither easy to find them nor to prevent the occurrence of fistula afterwards.

In regard to opening of pelvic abscess, I think that Dr. Cabot's view is judicious, except that to my mind not enough stress was laid on the necessity of removing diseased tubes where you would hardly call the malady a pelvic abscess. I fully recognize the surgical tendencies of the last few years to operate on all pelvic abscesses from above. I have tried it, and have concluded that where a collection of pus can be readily reached from below, where, in other words, the vagina is pushed down forming a fluctuating mass behind the uterus, it is a good thing to let out that pus by the vagina; let it be done with the proviso that this may be a temporary thing, that there may be pus-tubes behind which may have to be removed later.

Such cases, however, form a minority of those which require operation. They are mostly post-puerperal or follow abortion. In the great majority of cases the disease is in the Fallopian tubes, and the operation should be through the abdominal wall.

It is too late to enter on the question of the manner of operating, but at another time I shall have something to say on this subject.

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AMERICAN PEDIATRIC SOCIETY.

(Concluded from No. 19, page 475.)

Fourth Annual Meeting held in Boston, May 2, 3, and 4, 1892.

SECOND DAY. — AFTERNOON SESSION.

TYPHOID FEVER IN CHILDREN UNDER TWO YEARS,

by **Dr. W. P. Northrup**, New York.

Dr. Northrup's paper, purposed to strengthen the belief that typhoid fever, as a rule, avoided the first two years of life. Clinically: At the New York Foundling Hospital there had never been a case in the observations of twenty years. Cases had been suspected, but on autopsy did not prove to be such. Pathologically: A great many institution-reared children under one year, on autopsy, show the gross lesions of typhoid, judged by the scale of adult life. The Peyers were enormously swollen and abruptly limited at their margins, sometimes showing a partial ulceration; mesenteric lymph nodes swollen; spleen enlarged, etc. Illustrative cases were narrated showing such lesions. Bacteriological investigation showed no typhoid bacilli (Prudden).

Dr. Northrup desired to raise the inquiry, whether, in the experience of those present, typhoid fever has been observed in children under two years. He had never met it in the wards or in private practice nor in two thousand autopsies.

TYPHOID FEVER IN CHILDREN,

by Dr. Chas. Warrenton Earle, Chicago.

Dr. Earle reported twenty cases of typhoid fever in children, occurring in private practice in a community where typhoid fever had been comparatively rare. Of these twenty cases, ten were males and ten females.

Mortality nothing. The youngest child was two years, the oldest fifteen, average seven and a half. Highest temperature 105.5°. Duration of the disease averaged twenty-six days. It varied from seventeen to forty-five days. The pulse ranged from 90 to 180 beats per minute. Bowels constipated in three cases, slight diarrhœa in ten and severe in seven. Vomiting in a very small percentage of the cases, in one or two persistent, slight in three or four. Tympany was manifested in a considerable number of the cases. Phlebitis took place in one case in the profunda femoris vein. Inflammation of the parotid on one side in one case. Epistaxis in eleven cases; in four severe, and the remaining slight. Bronchitis present in almost all the cases; in most of the cases slight, in a few severe. Hæmorrhages from the bowels in none of the cases. Rose spots in all of the cases except one which was seen late. Splenic tumor in seventy per cent. of the cases. Pain in the abdomen almost universally present. Pain in the head usually complained of by the older patients and in the beginning of the sickness. In one case speech absent two weeks, in a second five weeks. In most cases the speech was slow and somewhat indistinct. Recovery of speech took place in every case. In one it was suddenly restored, and in two where there was complete absence of speech it was restored gradually. In one case complete deafness for two or three weeks. Otitis in one case. Symptoms referable to the nervous system, delirium with stupor, in most of the severe cases. Convulsions in two cases. Periostitis in one case. Relapse in five cases. Duration of the relapses fifteen to twenty days. Highest temperature in relapse 104.5°. Epistaxis in three of the relapses. Diarrhœa in four and constipation in one.

TYPHOID FEVER IN INFANCY,

by Dr. W. S. Christopher, Chicago.

The reader had met cases which seemed to be mild cases of typhoid fever in infants, but owing to the fact of invariable recovery, the diagnosis had not been confirmed. Physical examination of the abdomen revealed some flatulence but never meteorism. Enlargement of the spleen almost always to be made out by percussion. On the skin of the abdomen there was a typical roseola. Almost invariably the spots occurred as early as the third day, and rarely exceeded eight or ten in number. Pulmonary symptoms were very important. The bronchitis, always present to greater or less degree in the adult, was exaggerated in the child, and became a prominent symptom of the disease. It seemed probable that in many instances pneumonia was but a symptom of typhoid fever. The condition of the tongue was very important. It did not enlarge, nor become flabby nor indented by the teeth when they were present. It remained of normal size and shape, and was covered by a creamy coat, leaving the sides and edges free. The front portion was rather thinner than the main portion, and the fungiform papillæ might be seen through it, but later were often hidden. The uncovered edges and tip of the tongue were bright red. Tongue always remained moist. The face did not assume the appearance of typhoid fever. He had never seen nose-bleed. The diagnosis was to be based upon bronchitis, the peculiar tongue, the roseola and the enlarged spleen. In the absence of any one of these, he would be unwilling to make a diagnosis of typhoid fever. The fact that so few adults had the disease might be in part explained by the fact that they secured immunity through a slight and unnoticed case in infancy.

Dr. Koplik thought the Society owed a great deal to Dr. Northrup for having called attention to the fact that certain of the post-mortem appearances which in the adult were so characteristic of typhoid fever might in children be due to other things.

Dr. Jacobi asked in what conditions and diseases this change in Peyer's plaques took place.

Dr. Northrup, in reply, stated that ulceration was not such a constant feature, but that marked enlargement of Peyer's patches in children was a familiar sight. He had observed it in at least 150 out of 2,000 autopsies. This occurred in all kinds of intestinal diseases, in fact after almost anything.

Referring to Dr. Earle's paper, he wished to state that he did not think enlargement of the spleen could be determined by percussion. He regarded palpation as the only reliable means of determining this point.

Dr. Blackader thought he had in rare instances met with typhoid fever in young children. He had always supposed that the freedom which young children had from typhoid fever was due to the fact that they were not brought so much into contact with the sources of infection. Their food was more frequently cooked.

He also felt that it would be very difficult to determine enlargement of the spleen by percussion. The principal symptoms upon which we had to rely were prolonged febrile reaction, rose spots and bronchitis.

Dr. Winters said he could not recall a single instance of typhoid fever under two years of age, though he had probably seen cases. He thought the rash was almost constantly present, so that he would not be willing to make the diagnosis in young children in the absence of the rash. In some cases the spots were very few in number, while in others they were very abundant. He thought a considerable distention of the abdomen occurred in most cases.

Dr. Huber could recall only two instances of typhoid fever under two years of age, in one of which Dr. Jacobi had made the diagnosis, and in the other case there were five older children sick from typhoid fever at the same time.

Dr. Seibert had never made the diagnosis under two years. He called attention to the fact that a severe acute gastritis with high temperature and rapid pulse might be mistaken for typhoid fever. In one such case he had examined the breast milk and made a diagnosis of gastritis, and the temperature had gone down from 106° to normal in a few hours upon withdrawing the milk from the child. In the treatment of all cases of typhoid fever he used systematic irrigation of the colon with plain water, in order to take away whatever typhoid poison had accumulated in the lower portion of the large bowel. Under this treatment tympanites subsided, and diarrhœa, if intense, got better, and insomnia seemed to be influenced by it. Whenever he had a patient with diarrhœal distension of the abdomen he took away milk until the diarrhœa had ceased. He had never prescribed an antipyretic in four years, and never given a bath except to wash the patient for cleanliness.

Dr. Adams did not question that typhoid fever occurred in young children, but claimed that the diagnosis was not uniformly made. The typical symptoms of typhoid fever in adults he did not find in very young children. In the treatment he thought too much attention was paid to high temperature. A high temperature which was not continuous was not dangerous. He had seen some unfortunate results from the use of antspyretics in case of high temperature, and had come to discard as routine practice any method of treatment as far as antipyretics or drugs were concerned. He had never practised irrigation in typhoid fever. While the principle seemed good, he would hesitate to recommend it in young children: first, because the intestinal tract should be kept as quiet as possible, and, secondly, because young children resisted such treatment, unless in a very low condition.

Dr. Rotch thought cases of typhoid fever in young children were rare. The diagnosis in young babies and children had to be made the same as the diagnosis in aborted types of the disease in adults, namely, by exclusion mainly.

Dr. Jacobi had made the diagnosis of typhoid fever under two years, and had seen a few autopsies. The diagnosis in most cases was first suggested by exclusion. If he saw a case with a moderate amount of fever lasting sometime, without any local symptoms to account for it, he would suspect typhoid fever. If there were two temperature curves in twenty-four hours for sometime, it was typhoid fever unless there was good reason to take it for intermittent duplex. If the fever was well tolerated it would lead to the suspicion of typhoid. When also there was a roseola, he would say that it was typhoid fever. When in addition to that the spleen could be felt under the ribs it was typhoid fever.

PRE-TUBERCULAR ANÆMIA,

by Dr. B. K. Rachford, Newport, Ky.

Dr. Rachford based his conclusions upon examinations of the blood of 168 convent girls, from a careful inquiry into their family histories and from physical examinations. His conclusions were that family tuberculosis was one of the great sources of anæmia. Girls from tubercular stock were more likely to be anæmic than girls from non-tubercular stock in the ratio of 72 to 7. Second, that tubercular lymphatic disease caused profound anæmia, while beginning pulmonary tuberculosis might not produce anæmia. Anæmia in cases with tubercular family history without apparent lesions, might be due to tuberculosis of the deep lymphatics. Pronounced anæmia without apparent cause, was strongly suggestive of concealed tuberculosis. Third, that deep-seated tuberculosis might confer immunity from pulmonary tuberculosis. Some of these anæmic girls with tuberculous family history, even though exposed often to tuberculosis, escaped from the disease not because the anæmia protected from the disease, but the cause of the anæmia, namely, deep-seated tuberculosis, conferred immunity from pulmonary tuberculosis. Fourth, the typical anæmia of tuberculosis corresponded more nearly to simple anæmia than to chlorosis.

Dr. Fisher believed that cases of anæmia or chlorosis were very often cases of true tuberculosis. He cited the case of a young woman with an obstinate form of chlorosis, who suffered from a severe form of diarrhœa, and in the discharges tubercle bacilli were found. There was no cough, and the anæmia had existed about two years before the bacilli were found.

Dr. Osler said the paper was an admirable piece of clinical observation. He thought the conclusions were those which had already been arrived at, that the anæmia of tuberculosis was very commonly a simple anæmia, not a chlorotic anæmia, though there were some instances, undoubtedly, in the early stages of tuberculosis in which the condition was what the French writers described as chloro-anæmia.

A CASE OF SPORADIC CONGENITAL CRETINISM,

by Dr. Charles W. Townsend, Boston.

The case was that of an infant eighteen months old which was an idiot, but in addition to the other clinical symptoms of idiocy showed the characteristic cretin's habit of lying in a hibernating condition for from a few minutes to a hour every day, with the eyes vacant and staring, and the respiration scarcely to be noticed. The facial expression was characteristic of cretinism — œdematous thickened skin, with narrow eyes, large tongue, partly protruded from the mouth, and the bones from the forearm and leg were short and out of proportion to the large body and head. The temperature was always subnormal, 96.8°, the respiration slow, twelve to sixteen to the minute. The child died at the age of two years from some intestinal trouble.

Dr. Huber said that cases of cretinism, semi-cretinism and the cretinoid condition were rather frequent in the tenement districts in New York. In the syphilitic cases we did not get that enlarged thyroid so common in the cases that occurred in Switzerland. In such cases the thyroid was very poorly developed or absent. He had seen one or two of the semi-cretins who had attained the age of eighteen or more. They had a fair amount of intelligence, the characteristic facial expression, the long antero-posterior diameter, the large head, and were only twenty-seven to thirty inches tall.

Dr. Osler said that no case had come under his personal observation until recently, when a case was brought to him from Maryland. It was a perfectly typical case. There was no cretin in any of the idiotic asylums.

Dr. Huber, in reply to a question, stated that the cretins occurred mostly among the Russian Poles, Germans and Swedes.

THIRD DAY. — MORNING SESSION.

SYPHILITIC BRONCHO-STENOSIS IN CHILDREN,

by Dr. A. Seibert, New York.

Dr. Seibert reported four cases of this affection which he had observed in the last three years. The patients varied in age from eighteen months to three and a half years; were the children of poor Russian Hebrews who had recently come to this country. Taking the four cases together, the following is a brief sketch of the chief symptoms and course: the disease started in the upper air passages with cough, hoarseness and aphonia. Gradually and slowly signs characteristic of stenosis appeared, to remain for weeks and months, only varying in intensity; muco-purulent expectoration from larynx and trachea; one-sided bronchitis; at last pulmonary infiltration into the tissue adjoining the right bronchus, dulness over the middle lobe posteriorly, bases free. Chronic course three to eight months; no fever; comparatively good nourishment of patients in spite of long suffering; and at last prompt success by anti-syphilitic treatment.

Laryngscopic examination showed marked hypertrophic swelling of the mucosa and vocal cords; no ulceration in the larynx; well marked in the oral cavity. It was clear that we had to deal with an affection of the respiratory tract that could simulate laryngeal croup. One child was intubated, and respiration remained the same after intubation. This showed that we had to look for the hindrance to respiration below the larynx. The gradual development of the cases spoke against foreign body as the cause. Tumors pressing on the bronchus could not explain the tracheitis. The general condition of the children was very good, which did not speak for extensive tubercular affection of the larynx, trachea and lung. Further more, fever was absent.

Enlarged tubercular lymph nodes might exist without fever, and might compress a bronchus; but if laryngeal, tracheal and pulmonary changes also existed, then fever and cachexia would be present. Syphilis was the only thing that would account for the clinical picture and for all the pathological processes.

Syphilitic broncho-stenosis in children was of rare occurrence, much rarer than bronchial compression by tubercular nodes.

Dr. Caillé, of New York, had seen a number of these cases. In two cases he had found, at autopsy, that the areas of dulness were not inflammatory foci, but atelectatic spots. He thought that fumigations with calomel were indicated, in order to obtain both a constitutional and local effect. This treatment should, after a few days, be followed by iodide of potassium.

Dr. Henry Jackson, of Boston, alluded to two cases he had seen in adults. In one there were cicatrices in the larynx, ulceration and a few small cicatrices in the mouth. There were signs of consolidation in the lungs. There was an annoying hard cough. The diagnosis of tuberculosis was made, syphilis not being considered. At a later period the diagnosis of syphilis was made and the patient rapidly recovered on anti-syphilitic treatment.

The second case presented marked signs of syphilis in surface lesions. He had ulcerated laryngitis. There was stenotic breathing, a small area of consolidation in the middle part of the right lung. The case yielded to specific treatment.

Dr. Seibert, of New York, called attention to one form of syphilitic stenosis that would not be benefited by anti-syphilitic treatment, namely, where a diminution existed in the circumference of the bronchial tube due to constriction on the part by a cicatrix. In the majority of cases the stenosis was caused by a pathological hypertrophy of the submucosa and mucosa, and was very readily relieved.

Fumigations with calomel might be good, but he was satisfied with the old way of using iodide of potash and mercury. He usually administered the iodide per rectum.

A CASE OF DEATH FROM LARYNGISMUS STRIDULUS IN INCIPIENT RACHITIS,

by **Dr. Samuel S. Adams**, Washington, D. C.

The case was that of a bottle-fed baby first seen at the age of four months, when it was suffering from an attack of tonsillitis. A week after recovery a severe attack of grippe came on, which subsided after three days and was followed by bronchitis of the larger bronchi. A few days later broncho-pneumonia developed, which was soon recovered from. About six weeks later, Dr. Adams was called to see the child on account of loss of appetite and sluggish bowels. His attention was called to a peculiar noise the child made as it awoke. This was a sort of whoop with inspiration. Shortly after this, convulsions set in. A consultation was had, and the diagnosis of laryngismus stridulus, due to incipient rachitis, was arrived at. The child died suddenly a few days later, and no autopsy could be obtained. The sutures and fontanelles were normal, but the child was fat and flabby.

Dr. Blackader, of Montreal, stated that while laryngismus stridulus was a not uncommon accompaniment of incipient rachitis in London and on the Continent, yet in Montreal it was rare, although cases of incipient rachitis were common.

Dr. Adams, in reply to questions, stated that there was no nystagmus in this case, and no evidence of adenoid vegetations so far as symptoms went. He had not examined for them.

Dr. Seibert called attention to the possibility of enlargement of the thymus gland being the immediate cause of death in this case. He cited a case in which a baby in perfect health had died almost instantly without any movement from being turned upon the face in the mother's lap. At the autopsy a very large thymus gland was found.

Dr. Jacobi, of New York, said that, in his judgment, forty-nine out of fifty cases of laryngismus stridulus were of rachitical origin. There was every reason to look for rachitis in this case. The child had been fed on cow's milk, was a fat child, had not been a well child. Besides this, the child had had a good many convulsions, and there probably was that condition of the brain which results from rachitis. He believed that there was œdema of the brain which gave rise first to the laryngismus stridulus, and, secondly, to the constantly repeated convulsions. As to the cause of death he did not think we could state positively. He suggested, as a possible cause, the so-called swallowing of the tongue, also hypertrophy of the thymus gland.

Dr. Huber, of New York, stated that cases of laryngismus stridulus with more or less softening of the occipital and parietal bones and other evidences of advanced rachitis were not uncommon in his service in the Vanderbilt Hospital and in the tenement districts. He had seen four cases in which swallowing of the tongue was the immediate cause of death.

Dr. Adams, of Washington, stated that he had seen one or two of the convulsions, and that after an inspiratory whoop a decided clonic convulsion followed. The cause of death was not clear.

Dr. Huber, of New York, reported

A CASE OF SACRO-COCCYGEAL TUMOR IN A CHILD THREE WEEKS OLD; OPERATION; RECOVERY.

Dr. A. Jacobi, New York, presented

A NOTE ON PEROXIDE OF HYDROGEN.

Dr. Jacobi called attention to a number of cases he had seen, in which the use of peroxide of hydrogen in diphtheria especially had produced appearances which might be mistaken for the original disease, and which appearances had readily disappeared on withdrawing the peroxide. The disease had not only not been benefited, but had been prolonged by the use of the drug.

Dr. Caillé, of New York, cited a case in which, thirty-six hours after using the peroxide of hydrogen in weak solution as a spray and gargle, a whitish veil appeared in the mouth, and then beginning ulceration and a pseudo-membrane over these ulcerated spots. At the suggestion of Dr. Jacobi the peroxide was stopped, and the patient recovered.

Dr. Blackader, of Montreal, suggested the possibility that the peroxide contained impurities of an irritating nature, these impurities being the salts and acids used in the production of the peroxide, and which in themselves must be poisonous.

Dr. Seibert, of New York, had observed the same appearances described by Dr. Caillé as following the use of peroxide. Although peroxide was extensively advertised, he had never seen one scientific article in medical literature showing that it really did kill germs.

Dr. Buckingham, of Boston, had used the fifteen-volume solution of peroxide of hydrogen in a spray in the mouth and nose. He had not been able to trace any bad results. It seemed for a time to lessen the membrane, but the membrane quickly returned. He was uncertain whether it had any benefit as far as the disease went.

Dr. Koplik, of New York, had observed, in one case where he had used a spray of peroxide, a beefy color to the soft palate followed by a milky pseudo-membranous deposit.

Dr. Huber, of New York, had seen in a number of cases the effects which had been described.

Dr. Jacobi, of New York, said the films seen were coagulated albumen, but the damage was done by destroying the epithelium, giving rise to new exudation, new diphtheritic deposits and certainly to more danger and discomfort.

THE RELATION OF RHEUMATISM AND CHOREA,

by Drs. C. W. Townsend, Boston; F. M. Crandall, New York; M. Allen Starr, and Samuel S. Adams, Washington.

The discussion was opened by Dr. C. W. Townsend, who read a paper of which the following is an abstract:

Statistics as to the frequency of rheumatism in choreic cases vary very much, owing to the obscure nature of rheumatism in children, and this variation was illustrated by quotations from different writers. The questions to be considered are:

(1) Does rheumatism occur with greater frequency among choreic than non choreic children?

(2) Does rheumatism act simply as a debilitating disease in its relation to chorea, or is there an intimate relation between the two diseases?

(3) Is the heart-murmur often found in chorea, due to endocarditis, and is it liable to lead to serious heart disease?

In answering these questions, the writer considered all the cases of chorea in the out-patient department of the Boston Children's Hospital, 148 in number, from the years 1883 to 1890, a large number of whom had been seen at the hospital or visited at their homes after the original attack of chorea. He found that twenty-one per cent. of these had had rheumatism, and thirty per cent a heart-murmur, half of the latter becoming organic heart disease. That there was an intimate relation between rheumatism and chorea seemed evident from the large proportion of rheumatic cases among the latter. Among non-choreic children he had found only five and one-half per cent. to be rheumatic, or twelve per cent., including the cases of so-called growing pains. Another reason for believing in the intimate relation of the two diseases was that chorea is often followed or accompanied by rheumatism, as well as preceded by it, one sometimes giving place to the other.

The occurrence of endocarditis in chorea without rheumatism was considered a strong argument against the purely neurotic theory, and one that pointed to the infectious nature of chorea.

The conclusions reached were:

(1) Fright, eye-strain, debility and school pressure, particularly the latter, which often include some of the former, are potent exciting causes of chorea.

(2) Rheumatism, although absent from the history of at least half of the choreic cases, occurs with greater frequency among choreic than non-choreic cases.

(3) There is an intimate relation between chorea and rheumatism.

(4) The heart-murmur so frequently found in chorea, sometimes associated with rheumatism and sometimes not, is in a considerable proportion of the cases due to endocarditis, and leads to organic valvular disease.

Dr. Crandall, of New York, had concluded, after a careful study of his cases of chorea, that there was some underlying cause aside from the fright, rheumatism, etc., that there was some neurotic element underneath all this. Not every person exposed to tuberculosis contracted the disease, and not every person exposed to fright, scolding, rheumatism, etc., had chorea. Rheumatism, however, was the most universal and potent of the exciting causes.

Dr. Starr, of New York, presented an analysis of 385 cases of chorea. Of these, 234 were general; 140 were unilateral; 11 extent uncertain. Distinct history of rheumatism in 70 cases. In 281 cases rheumatism denied; in 5 cases pains of doubtful nature were admitted; in 29 cases no record was made of rheumatism. Organic heart disease found in 70 cases; functional murmurs in 56 cases; heart normal in 212 cases; no statement regarding heart in 47 cases. The cases in which rheumatism was noted were cases in which a distinct attack of acute articular rheumatism had occurred. In 340 of the cases a record was made of the history of the parents as regarded rheumatism, nervous diseases and phthisis. In 58 cases one or both parents suffered from rheumatism. In 100 cases one or both parents were said to be "nervous."

Dr. S. S. Adams regards rheumatism which holds an indirect relation to chorea, as a less important factor in its development than neurasthenia.

Dr. Jacobi, of New York, said that a diagnosis of acute rheumatism was not so frequently made in little children as it ought to be, and a good many of the cases in which there was heart disease and not rheumatism had been rheumatic. We found in children of six to twelve years of age a good many fully developed cases of heart disease that must have a cause. Congenital heart disease was rare. All the cases, with rare exceptions, seen in later life were acquired, and the cause of acquired endocarditis was rheumatism. A great many cases were reported in which some pain had existed, but they had not been taken for rheumatism.

Why not? These pains had been rheumatism. The so-called growing pains were one of three things: first, neuralgic pains; second, epiphysitis. These cases were not so frequent as to cover all the cases. Third, there was a large number of cases of so-called growing pains which were not growing pains at all, but positive cases of rheumatism. Cases of rheumatism with endocarditis that could not be doubted at all would frequently be found attended with very little pain about the joints, very little swelling and sometimes not very high fever. Sometimes the endocarditis came very early, sometimes late: it was very frequent. He believed a rheumatic endocarditis attending even a mild attack of rheumatism was more frequent in children than in adults. He believed that there was very much more articular rheumatism in children than we had generally assumed, and that there were a good many cases of chorea which should be attributed to that.

Dr. Holt, of New York, said if we assumed that only cases with a definite history of acute articular rheumatism were to be regarded as rheumatism, the number of cases would be very much reduced; but it seemed to him that the great proportion of all these cases of endocarditis should be included as rheumatism. He had learned to be very suspicious of cases of functional heart murmur in chorea. In such cases when examined several years later well-developed heart lesions were often found. His own conviction was that the connection between rheumatism and chorea was a very close one. Other factors, of course, were necessary besides rheumatism, but certainly the rheumatic diathesis and the presence of acute rheumatism was a more powerful predisposing factor than any other single one.

Dr. Fisher, of New York, had examined the blood of a patient suffering from a second attack of chorea and in whom there was a history of rheumatism. The blood contained peculiar germs resembling the strepticoccus seen in a case of rheumatic endocarditis. The germ disappeared after about ten days' use of Fowler's solution.

Dr. Osler, of Baltimore, thought it quite impossible to bring all the cases of chorea into the category of rheumatism. In 554 cases he had studied from German records only fifteen per cent. had a positive history of articular trouble; and, including those with pains of any kind, the percentage was only twenty. Unless we expanded largely our conception of rheumatism in children the large proportion of the cases which had come under his observation in Philadelphia and Baltimore had no definite history of rheumatism, and the absence of the subcutaneous fibrous nodules upon which English writers had laid such stress was striking. The frequency of organic heart disease in the subjects of chorea was remarkable, and the subjects of chorea had usually a definite articular history. In 110 cases from the Infirmary of Nervous Diseases in Philadelphia there were 40 with signs of organic heart disease, and in more than fifty per cent. of these cases there had been no history of rheumatism. There was no other disease with which endocarditis was shown by autopsy to be so frequently associated as with chorea. The nature of the disease and the relationship were still doubtful, but the points brought out had been of considerable interest, and showed a larger percentage of rheumatic cases than had yet been shown in any series in this country, a percentage approaching much more to the English than to the Germans.

THIRD DAY. — AFTERNOON SESSION.

THE VALUE OF MILK LABORATORIES FOR THE ADVANCEMENT OF OUR KNOWLEDGE OF ARTIFICIAL FEEDING,

by Dr. T. M. Rotch, Boston.

Dr. Booker, of New York, believed that the process presented by Dr. Rotch would supply us with a means of treating cases that could not take milk as ordinarily sterilized, and of treating cases in which the breast milk could not be given. The point at which the milk was sterilized, namely 167° F. was important. Sterilized milk at 212° F. was more difficult of digestion than unsterilized milk.

Dr. Koplik, of New York, thought this low point of sterilization was very important, since if sterilized at 212° F., some children would not drink it. It tasted boiled, and the cream separated in drops of fat. He had experimented with sterilizing milk at a low point, and had succeeded well.

Dr. Jackson, of Boston, had examined specimens of the milk as delivered to the laboratory and found it contained but a comparatively small number of bacteria. As to whether milk was as fully sterilized at 167° F. as at 212° F., he had made a few experiments and found that about an equal number of bacteria developed in the milk sterilized at 167° F., and at 212° F.

Dr. Holt, of New York, said the sterilization of milk as first introduced had not met the expectations of the profession. He was delighted to find that milk subjected to a temperature of 167° F. was sterile for all practical purposes. Dr. Rotch had given us a method of artificial feeding which exceeded his expectations. He thought the Society and the profession owed him a debt of gratitude for making a start in a direction the full fruits of which we could not see for many years.

Dr. Blackader, of Montreal, also had come to the conclusion that milk sterilized at 212° F., did not meet our practical wants. He had recently subjected milk to a temperature of not exceeding 180° F. with very good results. The milk was not altered to the same extent as before.

Dr. Jacobi, of New York, said the fault was not so much with sterilization at 212° F. as it was in the fact that we expected too much. No sterilization and no handling of cow's milk would make human milk. He believed the principles of feeding laid down before would still hold good. He wished to join in the complimentary remarks as to the method of Dr. Rotch and its merits.

A SIMPLE METHOD FOR CLINICAL EXAMINATION OF BREAST MILK,

by Dr. L. Emmett Holt, New York.

Dr. Holt showed a simple apparatus he had devised for the clinical examination of breast milk, which consisted of a lactometer and a graduated tube. Milk to be examined was either the entire specimen at a single nursing or a specimen taken as near the middle of the nursing as possible. The specific gravity was first taken; then the milk was put into the graduated tube up to the hundred line and allowed to stand for twenty-four hours on the physician's table, at which time the amount of cream which had risen could be read off as hundredths. A good average milk would have a specific gravity of about 1030, with about eight per cent. of cream, provided the specific gravity and the percentage of cream did not vary materially from these figures, it might be inferred that the amount of proteids was normal. The quantity of milk must be taken into account, just as it is when a chemical analysis is made. For instance, he had seen the cream at fifteen per cent., and yet the children losing. The milk in this case was found to be scanty.

Dr. Charles Harrington, of Boston, said his experience had led him to the conclusion that the lactoscope, if properly used, was superior to other systems in the determination of the amount of fat in milk. The instruments which depended upon the liberation of the fat were so unreliable as to be in most instances practically of no value. He agreed with Dr. Holt that with a knowledge of the percentage of fat and the specific gravity the percentage of sugar and albuminoids might be determined quite accurately. In trying to get an idea of the amount of fat from the cream volume he had found great difficulty in many cases. In one case where only a thin wafer of cream appeared the milk was found to contain four per cent. He had not used the lactoscope much with breast milk.

After appropriate action relative to the death of Dr. John Amory Jeffries, of Boston, the meeting adjourned.

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Recent Literature.

Diseases of the Throat, Nose and Ear. A Clinical Manual for Students and Practitioners. By P. McBride, M.D., F.R.C.P. (Ed.) With colored illustrations from original drawings. Philadelphia: P. Blakiston, Son & Co. 1892.

This work of 606 pages is, if we are not mistaken, the first in which the diseases of the throat, nose and ear are discussed in a single volume. It is fortunately not a compilation, but founded chiefly upon the author's own experience, and there is ample evidence thoroughout its pages that he is an accurate observer and a conscientious practitioner. He has shown great ability as a condenser. The volume, by no means bulky, contains everything of importance in modern laryngology, rhinology, or otology. It is fully up to date. It is a comfort to read page after page without meeting a single drawing of atomizers, compressed-air apparatus, or of instruments of any kind. All these have wisely been left out, and much valuable space thereby economized

Although specialists will find this a highly interesting work, its chief mission will be for students. We can recommend it to them as a thoroughly safe guide. It tells them what they want to know in a clear and reliable manner without wasting their time, as the author has imparted his facts without waste of words. The press-work leaves nothing to be desired.

The Emperor of Austria has conferred the cross of Knighthood of the Order of Leopold, with remission of the customary fees, on Professors Otto Kahler, Moriz Kaposi, and Gustav Braun, of the University of Vienna.

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THE LIVER IN DIABETES.

Though the primary cause of this disease (whether nutritive or nervous) is still involved in obscurity, yet that diabetes is frequently associated with exaggeration of the glycogenic function of the liver is not questioned. More than a hundred years ago, Richard Meade declared diabetes to be a disease of the liver; time has shown what measure of truth there is in his statement. The immediate result of Claude Bernard's discovery of hepatic glycogenesis was to direct research to that organ as the probable seat of diabetes. The results of very many autopsies of diabetic patients have shown a remarkable concomitance between this disease and states of hyperæmia, enlargement and hypertrophy of the liver. Out of twenty-seven autopsies at St. George's Hospital, Dickenson found the liver healthy in only six cases; in thirteen it was more or less hyperæmic; in three it was hard and enlarged; in four it was fatty, etc. Among thirty diabetics examined after death at the Vienna Hospital, the liver was found enlarged in fifteen, gorged with blood and hardened; it was generally of a dusky brown color, and in some cases its acini were less sharply defined or even obliterated.[1] According to Klebs the congestion of the liver is an active hyperæmia; dilatation of the hepatic veins and their roots such as occurs in static hyperæmia, is wanting. The hypertrophy is also a peculiarity of diabetes, but the increased volume of the organ depends more on the enlargement of the gland-cells than on augmented quantity of blood. In the further progress of the disease, according to Klebs, the liver again diminishes in size, becomes withered and flabby, and often fatty degeneration takes place.

Hypertrophic sclerosis has several times been noted; Hanot and Chauffard have called attention to the presence of pigmentary granulations in the sclerous tissue (*hypertrophic pigmentary cirrhosis*). If atrophic cirrhosis has been frequently seen, this may be explained by the abuse which diabetics often make of alcohol, when, however, diabetes has lasted a long time, according to Lécorché, the congestive state entails a cirrhosis which terminates the disease.

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[1] Senator.

Glenard, in summing up the results of autopsies as far as known, computes that there exists an objective alteration of the liver in sixty per cent. of cases of diabetes, and hypertrophy is met with in one-quarter of the cases.[2]

It is by no means agreed that all forms of saccharine diabetes are due to excessive production of sugar by the liver. The gastro-intestinal theory of Bouchardat, according to which the abnormal saccharinity of the blood is due to direct absorption of sugar from the alimentary canal, has not yet been wholly set aside, and doubtless serves to explain some cases. Bouchardat supposed the cause of the diabetes to be malelaboration of the carbo-hydrates owing to some digestive derangement. Other and later writers have hypothecated a failure of the liver to fix sugar and store it up for time of need. However this may be, Andral's famous case, in which mellituria had existed with complete obliteration of the portal vein, proves the possibility of an abnormal quantity of sugar entering the blood and constituting a glycosuria independently of any action of the liver; and Wickham Legg has shown that ligature of the choledochus duct produces in the cells of the liver alterations which oppose the formation of glycogen, preventing even the production of glycosuria after puncture of the fourth ventricle; what is especially noteworthy in this experiment is that the injury above stated does not prevent glycosuria from supervening when an excess of sugar or starch is ingested.

The old writers paid much more attention than modern writers to the gastro-intestinal derangements which often precede and accompany diabetes, and get good results from a therapy and a dietetic hygiene based on data thus obtained; and this, long before any thing was known respecting the agency of the liver in glycogenesis.

That there is a very grave form of diabetes dependent on destructive lesions of the pancreas, is now being generally admitted, and without entering into any explanation of the relation of the pancreas to hyperglycæmia (which is confessedly little understood), it is certain that in pancreatic diabetes hepatic alterations do not play the principal rôle. Experimentally, diabetes has been produced in animals by extirpation of the pancreas; the diabetes so obtained persists; in frogs the result is the same even after ablation of the liver (Le Gendre).

There is a very popular theory of diabetes which leaves the liver hardly any rôle in the pathogenesis — that of Bouchard. According to this, in diabetes there is a normal formation of sugar by the liver; insufficient utilization of sugar by the tissues; accumulation of sugar in the blood; accumulation of water in the blood by reason of the sugar which demands water for diffusion and borrows it of the tissues and fluids; augmentation by this fact of the total mass of the blood; consecutive hyper-activity of the renal secretion, whence polyuria which removes the sugar and moderates the hyper-glycæmia.[3]

In a recent able survey of the whole subject, Dujardin-Beaumetz[4] maintains that in diabetic patients the functions of the liver are in the main normal and physiological, perhaps even exaggerated, and he affirms that in the numerous cases of hepatic disease which he has examined, he has never seen even a temporary glycosuria appear in the course of the hepatic affection. He further contends that in the diabetic the intercurrent affections of the liver (cancer, cirrhosis, amyloid degeneration, etc.), tend to cause the sugar to disappear from the urine.

To conclude: doubtless the hyperæmia and other alterations of the liver noticed by Glenard, Dickenson and others in diabetes and referred to above, may be regarded as accompaniments or consequences of the disease rather than in any true sense the cause. True diabetes has never yet been produced by agents influencing primarily the liver.

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SEX IN EDUCATION.

Sir James Crichton Browne has been delivering an address before the Medical Society of London on the above subject.[1] Sir James's former investigations as to the relation of school work to headaches is still in memory. He dreads forcing in education, and fears for the immediate and prospective results of overpressure in the English high-school system upon English girlhoood, motherhood and future generations.

As the result of his own examination of a great number of brains — leaving aside other and grosser physical differences — and the examinations of others, he concludes that all available evidence points to the conclusion that the male brain exceeds the female brain in weight in his country to an even greater degree than has been hitherto supposed. That the smaller size of the female brain is a fundamental sexual distinction, and is not to be accounted for by the hypothesis that environment, educational advantages, and habits of life, acting through a long series of generations, have stimulated the growth of the cerebrum in one sex more than in the other, is made clear by the fact that the same differences in brain weight between men and women has been found in savage races. And not only is the male brain heavier than that of the female, but it has a wider range of variation in weight. The very big brains and the very small brains are encountered, just as are geniuses and idiots, giants and dwarfs, more frequently amongst men than amongst women.

Again, he finds that there is a distinctly different distribution of brain substance in man and woman, and this he regards as the second sexual brain distinction. The frontal lobes are equally developed in both sexes; the parietal lobes, corresponding roughly with the motor area of Ferrier, are larger in the male than in the female; the occipital lobes, sensory in their functions, are larger in the female than in the male.

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[2] Labadie Lagrave: Maladies du Foie, 1892.

[3] Bouchard: Maladies par ralentissement de la nutrition. Chap. VII.

[4] Bull. gén. de Ther., January 15, 1892.

[1] Lancet and British Medical Journal, May 7, 1892.

The third brain difference between the sexes is in the convolutional arrangement. The female brain is more symmetrical than the male, due, probably, to its comparative poverty in secondary gyri. There are, moreover, observations indicating that the gray matter of the male brain has a greater specific gravity than that of the female brain.

Still another brain difference is in the vascular supply, and vascular supply is in some degree a measure of functional activity, the flow of blood to an organ or part having always a relation to its working power. But the region of the brain which in men is most richly flushed with blood is that which is concerned, we have reason to believe, in volition, cognitions, and ideo-motor processes; while the region which in women is most vascular is that which is mainly concerned in sensory functions, and we thus see that there is a relation between the size of the cerebral arteries, and what observation has taught us as to the intellectual and emotional differences of the sexes.

Sir James finds that all through life the male brain differs from the female in capacities, aptitudes and powers. These differences assert themselves early, and are found among barbarous and civilized peoples alike, and they have a special pathological significance at the period when sexual divergence is taking place most rapidly, and when education is being pushed forward with most rigor.

This address expresses no uncertain opinions in regard to the dangerous tendencies of the modern "higher education" of women, but it is nowhere intemperate. Few will probably refuse their consent to the statement that education from first to last can only be safely conducted in the light of cerebral physiology. He who unveils that light and holds it up where it must be seen is, at the present time, a benefactor.

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SEVENTY-EIGHTH ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL AND McLEAN ASYLUM.

From the report of the Resident Physician of the Hospital we learn that 3,203 patients were admitted during the calendar year, of whom 1,171 were Medical and 2,032 were Surgical; 1,881 were males, and 1,322 were females; 637 paid board in whole or in part; and 2,566 were entirely free.

The proportion of deaths to whole number of results was 8.40 per cent. The number of patients received on account of accidents was 595. The average number of free patients was 186, Americans 94, foreigners 92. The average time of paying patients was 2.66 weeks, of free patients 3.76. The proportion of ward beds occupied by free patients was 81 per cent., by paying patients, 19 per cent. The average cost per week per patient in the Hospital was $12.54.

The total attendance of out-patients was 48,032, of whom 25,819 were new cases; the average daily attendance was 163. The out-patient quarters were enlarged by the addition of another story. The Convalescent Home has sheltered 386 patients. Donations and legacies to the amount of $36,662.32 were received during the year.

At the McLean Asylum, there were 184 patients—88 males and 96 females—at the beginning of the year; 116 persons were admitted during the year, of whom 64 were regarded as recent cases and 52 as chronic or incurable. The average cost per week per patient was $16.81.

Eighty-nine persons, thirty-nine men and fifty women, had never been in any hospital. Of the remaining twenty-seven persons, seventeen, four men and thirteen women, were admitted for the second time; seven persons, six men and and one woman, for the third time; three persons, one man and two women, for the fourth time; and one man for the twenty-seventh, twenty-eighth and twenty-ninth times.

Of the one hundred and twenty-four persons discharged, including deaths, eighteen, six men and twelve women, were transferred or committed to other hospitals in this State, and two men and one woman to hospitals in other States.

Of the thirty-three persons discharged recovered, twenty had never before been inmates of any hospital; and of the remaining thirteen persons, ten had been in this Asylum, one in a private asylum in this State, and two in State asylums. These thirteen persons had previously made fifteen recoveries.

The average duration of illness from the beginning of attack in all cases recovered was 12.35 months, and the average duration of their residence in the Asylum was 6.58 months. The percentage of recoveries on all admissions, of persons accounted as insane, for the year 1891, was 28.45.

The voluntary cases admitted during the year numbered forty. These represented thirty-nine persons—ten men and twenty-nine women. Of these, twenty-seven were cases of melancholia, three of mania, three of delusional insanity, one of secondary dementia, two of paralytic, one of epileptic insanity, and two of general paralysis. Of these thirty-nine persons, four were committed after entering the Asylum as voluntary cases, and one was twice admitted as a voluntary case. The voluntary patients have yielded 28.2 per cent. of recoveries on the admissions of that class for 1891, thus furnishing only their due proportion of all the recoveries.

The number of persons admitted as voluntary patients under the present law is as follows: namely, 1881, 1; 1882, 11; 1883, 33; 1884, 49; 1885, 34; 1886, 29; 1887, 29; 1888, 34; 1889, 41; 1890, 58; 1891, 40;—a total of 359 persons in eleven years.

The Superintendent, Dr Cowles, comments upon these results as follows:

"There is much significance in the fact that nearly three-fourths of the voluntary patients in the last year were cases of melancholia. This presents the least serious degree of mental disorder; there is retention of intelligence that leads to the seeking or acceptance of remedial conditions in hospital care, and the doubtful cases, for whom preventive aid is most salutary, are mainly to be found in this stage of mental disease. The voluntary cases constituted almost exactly one-third of the admissions for the year, while nearly one-half in the previous year were voluntary.

"A number of interesting facts are brought out by these results of the year's work, that help to explain each other. There were not so many strictly recent cases as in 1890,— the average duration of illness of recovered cases was 12.35 months against an average of 8.31 months in the previous year, — the average hospital residence of these cases was one month longer, and the proportion of recoveries to the cases admitted was less. Consistent with these results is the lessening in number of voluntary cases, and evidence of the general fact is shown, that the wards were filled with sicker people than in the year before, who were the subjects of active hospital care."

The work of the laboratory for pathological and experimental investigations has been pursued steadily during the year. The training-school for nurses continues in efficient operation.

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MEDICAL NOTES.

Cholera. — It is reported that cholera is now epidemic in Asiatic Russia, and a special commission has been appointed by Russia to inquire into it. It is also epidemic in the interior of Arabia, and fears have been expressed, that Europe may be invaded during the coming summer. A groundless rumor that cases had occurred in Paris caused some excitement there.

Notoriety not always Desirable. — A notorious quack in Nebraska, who advertised that he had cured twenty-five cases of diphtheria, was recently arrested by the local Board of Health for not having reported the cases.

NEW ENGLAND.

Mortality for April in Boston. — For the month of April the death-rate was 24.51. The total number of deaths was 938, as against 913 during the corresponding month in 1891. The principal causes of death were: Consumption, 135; bronchitis, 51; heart disease, 90; pneumonia, 102; diphtheria, 52. There were 339 cases of scarlet fever reported with twenty-five deaths.

The Carney Hospital Appropriation. — The question of giving the Carney Hospital $10,000 came up for a third reading in the Massachusetts House of Representatives on Tuesday. The previous favorable vote was reversed, and the bill was defeated by 106 nays to 99 yeas.

Catalogue of the Harvard Medical School Association. — This Association has recently issued its second bulletin, in which the names and residences of all its members appear. The total number of members is 1011, of whom 13 are honorary; 348 are residents of Boston, 357 of other cities and towns in Massachusetts. Almost every State is represented and a few foreign countries.

Medical Examiners. — The Governor of Massachusetts has reappointed Zabdiel B. Adams, of Framingham, to be medical examiner for Middlesex County, and Thomas J. Walker, of Edgartown, for Dukes County. He has also appointed John S. Grouard, of Nantucket, for Nantucket County.

A Mad Dog in Lynn. — A dog supposed to be mad caused a great deal of excitement in Lynn last Saturday. A large number of people were in the streets. waiting for the finish of a bicycle race, when a fine fox-hound was seen running about and snapping at other dogs. A cry of mad dog was raised, and the authorities summoned. The deputy marshal approached the dog with a revolver, but failed to hit him. The dog jumped at him and bit him severely. He then started to run, biting everybody in his way, followed by a patrol-wagon and a buggy containing the town authorities. He was finally caught and shot, but not until nine persons and about forty dogs had been bitten. The brain and spinal cord were sent to the Harvard Medical School for examination, and the dogs which were bitten have been condemned to be shot. The police of Lynn have been so active since this event, that the canine race will probably soon be exterminated in that city.

NEW YORK.

Mortality for the Week.—The deaths reported during the week ending May 7th numbered 1,002, which is an increase of 52 over the mortality of the preceding week, and 123 above the average mortality of the corresponding week during the past five years. There were four deaths from typhus fever, which is the largest mortality from this disease since the week ending March 19th. There was a considerable increase in the deaths from measles, scarlet fever and diphtheria, the mortality from all of which was in excess of the average number of deaths reported from these diseases during the corresponding week for the past five years.

Deaths in 1892. — Dr. John T. Nagle, Registrar of Records, has submitted to the President of the Board of Health a comparative table showing that the deaths from January 1st to May 11th numbered 17,061, as against 16,715 for the corresponding period last year. This is an increase of only 346, and shows a decided reduction in the death-rate when the increase in the population is taken into consideration. During the same period 17,978 births were reported, as against 15,139 for the corresponding period last year, or an increase of 2,839.

Bequests in the Astor Will. — The late William Astor left very little in his will for charities. The only medical institutions mentioned were the following : The Woman's Hospital and the Home for Incurables, New York, each of which receives $10,000, and St. Luke's Hospital, Jacksonville, Florida, which receives $15,000.

Bellevue Medical College. — Dr. E. G. Janeway has resigned his position as Professor of Practice of Medicine in Bellevue Hospital Medical College, and Dr. A. A. Smith has been appointed to the Chair. Dr. Herman M. Biggs is to take the place of Dr. Smith as Professor of Materia Medica and Therapeutics.

Miscellany.

MICRO-ORGANISMS IN THE SALIVA.

Sanarelli[1] has studied the cause of the fact that although many specific micro-organisms, such as the pneumococcus, the bacillus of diphtheria and the like are often found in human saliva, they seem seldom to cause infection, even after wounds of the mouth. He studied the action of saliva upon these bacteria as well as upon the typhoid and cholera bacilli, and comes to the following conclusions :

Human saliva is an unfavorable culture medium for certain pathogenic micro-organisms. It possesses the power of either destroying them or hindering their growth, so that the number remaining is not sufficient to cause infection. That bacillus of diphtheria and the coccus of pneumonia can live in saliva for some time. The first of these does not grow in it and finally dies, the latter although it does grow soon loses its virulence.

A REMARKABLE ANUS.

At the recent meeting of the French Surgical Congress in Paris a man was exhibited who for some time has been earning a livelihood by playing musical airs with his anus in various places of public amusement. A history of this case, and a study of his methods appears in a recent issue of the *Semaine Médicale*, by Dr. Baudouin. While still a boy this person noticed that when bathing he could by deep inspiration, draw water into his bowel. His friends encouraged him to cultivate his talent, which he did so conscientiously that before many years he could not only draw up large quantities of water, and expel it again with great force, but he also became able to draw in air. By alternately drawing in and expelling air through the anus, he imitated a number of musical instruments ; a trombone, violin and a bass voice. He is able to play different tunes, so that they may be readily recognized. Physical examination reveals nothing abnormal. The aspiration is caused by a remarkable voluntary control of the lower bowel and anus, combined with the power to create a negative tension in the abdomen by well-trained muscular action. The different tones are produced mostly by an artistic expulsion of the air through the anus aided by movements of the buttocks. The lower bowel is so well under his command that he can entirely empty it at pleasure, thus avoiding any disagreeable odor during his performances.

THE REMOVAL OF LEAD FROM THE EAR.

An unusual accident and an ingenious method of relieving it are reported by Dr. Sheild, in the *Lancet* of April 30th. A man while carrying a pot of molten lead down a ladder, fell, some of the material running down the right ear, and on cooling, filling the middle ear with a solid lead plug. After the acute inflammation had passed off, the author laid the patient upon his side and poured liquid mercury into the meatus. This was repeated until the patient had lain in the aggregate sixteen hours with mercury in the ear. At the end of this time enough of the lead had been reduced to an analgam to allow its removal by injecting a stream of water from a syringe. It is suggested that this treatment might be serviceable in cases of impaction of leaden bullets.

OBITUARY. DR. JOSEPH DRAPER.

At the annual meeting of the Connecticut River Valley Medical Association it was voted that the following obituary be sent to the *Boston Medical and Surgical Journal:*

Dr. Joseph Draper was born in Warwick, Mass., February 15, 1834. His early years were spent on a farm, which was very distasteful to him. He commenced the study of his profession with Dr. James Deane, of Greenfield, Mass., afterwards attending lectures in New York, and graduating from Jefferson Medical College in 1858. In October, 1859, he was appointed assistant to Dr. Rockwell, in the Brattleboro Asylum, and remained until 1865. He was afterwards assistant and some of the time acting superintendent at the Insane Asylum in Worcester, Mass. In 1870 he was appointed assistant in the New Jersey Insane Asylum, and remained until 1873, when he returned to Brattleboro; and the growth of this institution is attributable to his zeal.

In 1881 he was given three months' leave of absence by the trustees to study abroad, and in this time he visited many of the institutions of England and Scotland, and learned much from them for the benefit of the Brattleboro Asylum. He was an active member of the State and County Medical Societies, of the Association of Medical Superintendents of American Institutions for the Insane, President of the Psychological Society, a member of the Massachusetts Medical Society, and of the Medico-Legal Society. His contributions to the literature of his profession were very numerous. Among his publications may be mentioned : "Annals of Vermont Asylum for the Insane," covering a period of fifty years of its history ; "Sketch of Dr. James Deane," 1858 ; "Sketch of Dr. W. H. Rockwell," 1858 ; "Sketch of Dr. C. H. Tenney," 1874 ; "The Pathology of Insanity," 1875 ; "The Pathogenesis of Insanity," 1877 ; "Hysteria in Insanity," 1879 ; "Neurasthenia of the Ganglioni Nervous Centres," 1881 ; "Insanity in Great Britain and the Continent of Europe," 1882 ; "The Responsibility of the Insane Outside of Asylums," 1883 ; "Vermont Asylum in the History of Brattleboro," 1880 ; "Insanity in Vermont, 1835–1885," 1885 ; "Obituary of Dr. Sumner Putnam," 1888 ; "The Oath of Hippocrates," 1889 ; "Nervous Exhaustion," 1890 ; "Subjective Delusions," 1890.

Dr. Draper was a prominent member of the Professional Club at Brattleboro, and has lectured before them and in other towns. He was married at Warwick, Mass., to M. J. Putnam in January, 1863, who still survives him.

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[1] Centralbl. f. Bakteriol., x, 25.

THERAPEUTIC NOTES.

Europhen as a Substitute for Iodoform. — Peterson,[1] after trying a large number of the substances which have been recommended as substitutes for iodoform, among them iodol, sozoiodol, aristol and dermatol, with unsatisfactory results, has finally found in europhen a good substitute. He uses it in the same way in which iodoform is used, and for the same cases, and obtains excellent results.

A New Styptic. — Wright [2] makes a solution of fibrin ferment by treating a decolorized clot from ox blood with alcohol and extracting with water. To this is added a one per cent. solution of chloride of lime. This he has found to be not only an active styptic when applied locally, but to promote coagulation when given internally.

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Correspondence.

THE PHYSICAL EXAMINATION OF STATE TROOPS. A CORRECTION.

Boston, May 14, 1892.

Mr. Editor: — I beg to make a correction in my paper issued in the *Boston Medical and Surgical Journal*, May 12, 1892, "Is it Expedient to have a Physical Examination of Men before Enlisting them in State Troops?" On page 469 the statement is made, "but there has been no movement in the medical department towards an examination of enlistments." This I find, while literally true, should be modified, as it does not present the whole truth. Assistant Surgeon, C. M. Green, First Corps Cadets, M. V. M., has courteously called my attention to this misstatement, or unqualified statement. The spirit of what I intended to convey was that no movement in the medical department had been made, as a department, towards an examination of enlistments.

The facts, as presented to me by Assistant Surgeon Green, in an extract from General Orders, No. 15, from the headquarters of the First Corps Cadets, M. V. M., dated August 4, 1887, are as follows:

> "Every candidate for admission to the Corps hereafter must be examined by one of its medical officers, who will, if the candidate is physically qualified to perform the duties of a soldier, give him a certificate to that effect, which certificate will be forwarded to the Committee on Elections with the application to enlist. The Committee will not present to the Corps the name of a candidate lacking such a certificate. By order."

This is the form of the medical officers' certificate:

> "I certify that —— —— has been examined, and is physically qualified to perform the duties of a soldier in the Massachusetts Volunteer Militia. —— ——, *Surgeon*."

Assistant Surgeon Green has forwarded to me a bound copy entitled, "Standing Orders, First Corps Cadets, Massachusetts Volunteer Militia, 1890." Various marked passages in these "Standing Orders" embody the examination of enlistments.

This correction is important, as the above facts accord to the First Corps of Cadets, as an organization, the credit and honor of being the pioneers in this State in the physical examination of recruits before enlistment. I am very glad to say that in the discussion following the reading of this paper at St. Louis I did the First Corps of Cadets the justice of alluding to their requirement of a physical examination of men before enlistment.

Very respectfully yours,
Herbert L. Burrell,
Lieutenant-Colonel and Medical Director,
First Brigade, M. V. M.

METEOROLOGICAL RECORD,

For the week ending May 7, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 1	30.24	47	56	39	37	86	62	W.	S.W.	3	16	O.	R.	.08
M.. 2	29.92	58	67	48	77	96	86	W.	N.E.	10	10	O.	R.	.12
T.. 3	30.15	44	47	42	96	96	96	N.E.	N.E.	8	13	O.	O.	.22
W. 4	30.00	59	74	41	93	45	66	S.W.	W.	3	15	O.	C.	.40
T.. 5	30.18	55	66	50	45	23	34	N.W.	N.W.	17	7	O.	O.	
F.. 6	29.91	53	63	51	43	61	52	N.	W.	10	8	O.	O.	T.
S.. 7	29.83	53	60	46	32	51	42	W.	N.W	14	17	C.	C.	
☞	30.03	53	62	45	64	65	62			9.2	12			.12

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, May 7, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Measles.	Diphtheria and croup.
New York . .	1,515,301	1002	410	21.10	24.90	4.60	4.70	6.10
Chicago . . .	1,099,850	484	213	10.50	18.27	1.47	.63	4.62
Philadelphia .	1,046,964	454	157	13.42	12.32	2.42	1.10	5.94
Brooklyn . .	806,343	393	135	13.25	19.50	3.75	.50	5.50
St. Louis . . .	451,770	166	101	14.40	10.80	2.40	—	3.60
Boston . . .	448,477	226	66	7.04	18.92	2.20	—	3.52
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	—	—	—	—	—	—	—
Cleveland . .	262,000	92	33	15.26	25.07	1.09	2.18	6.54
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	111	36	5.40	19.80	—	—	.90
Milwaukee . .	240,000	78	33	17.92	14.08	2.56	—	8.96
Washington .	230,392	122	36	6.56	13.94	.82	—	3.28
Nashville . .	76,168	35	5	11.44	2.86	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	36,425	19	5	—	26.30	—	—	—
Worcester . .	84,655	35	7	5.72	17.16	—	—	2.86
Lowell . . .	77,696	44	15	18.16	9.08	—	—	—
Fall River . .	74,398	—	—	—	—	—	—	—
Cambridge . .	70,028	33	8	3.03	12.12	3.03	—	—
Lynn	55,727	14	2	—	14.28	—	—	—
Lawrence . .	44,654	28	5	10.71	17.85	7.14	—	—
Springfield . .	44,179	18	8	16.66	27.77	5.55	—	5.55
New Bedford .	40,733	16	8	6.25	12.50	—	—	—
Salem	30,801	9	3	—	33.33	—	—	—
Chelsea . . .	27,909	14	7	—	7.14	—	—	—
Haverhill . .	27,412	10	2	10.00	10.00	—	—	10.00
Taunton . . .	25,445	11	2	9.09	36.36	—	—	—
Gloucester . .	24,651	5	1	20.00	—	—	—	—
Newton . . .	24,379	—	—	—	—	—	—	—
Malden . . .	23,031	9	3	11.11	11.11	—	—	11.11
Fitchburg . .	22,037	8	2	—	12.50	—	—	—
Waltham . .	18,707	8	3	12.50	12.50	—	—	—
Pittsfield . .	17,281	5	3	40.00	—	—	—	40.00
Quincy . . .	16,723	5	2	20.00	—	—	—	—
Northampton .	14,990	—	—	—	—	—	—	—
Newburyport .	13,947	1	0	—	—	—	—	—
Medford . . .	11,079	2	0	—	—	—	—	—
Hyde Park . .	10,193	—	—	—	—	—	—	—
Peabody . . .	10,158	2	0	—	—	—	—	—

Deaths reported 3,459: under five years of age 1,311; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 488, acute lung diseases 650, consumption 405, diphtheria and croup 170, scarlet fever 96, measles 59, diarrhœal diseases 51, typhoid fever 46, whooping-cough 21, cerebro-spinal meningitis 20, erysipelas 16, malarial fever 4, typhus fever 4, small-pox 1.

From diarrhœal diseases New York 21, St. Louis 9, Lowell 5, Brooklyn 4, Philadelphia 3, Chicago, Milwaukee and Nashville 2 each, Boston, Washington and New Bedford 1 each. From typhoid fever Chicago and Philadelphia 8 each, New York 7, St. Louis, Cleveland and Pittsburgh 4 each, Nashville and Lowell 2 each, Brooklyn, Boston, Milwaukee, Washington, Lawrence, Springfield and Waltham 1 each. From whooping-cough New York 10, Chicago and Philadelphia 3 each, Brooklyn

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[1] St. Petersburger Med. Woch., April 4th.

[2] British Medical Journal.

2, Boston, Milwaukee and Pittsburgh 1 each. From cerebrospinal meningitis New York 7, Philadelphia 3, Chicago and Brooklyn 2 each, Cleveland, Washington, Worcester, Taunton, Gloucester and Quincy 1 each. From erysipelas New York 6, Chicago 3, Philadelphia and Brooklyn 2 each, St. Louis, Milwaukee and Lowell 1 each. From malarial fever Brooklyn 3, New York 1. From typhus fever New York 4. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending April 30th, the death-rate was 20.8. Deaths reported 4,057: acute diseases of the respiratory organs (London) 306, measles 242, whooping-cough 154, scarlet fever 41, diarrhœa 36, diphtheria 33, small-pox (London 2, Liverpool 1) 3.

The death-rates ranged from 9.9 in Brighton to 27.5 in Liverpool; Birmingham 24.9, Bradford 22.1, Croydon 10.8, Hull 18.3, Leeds 22.9, Liecester 23.5, London 19.8, Manchester 26.3, Newcastle-on-Tyne 18.4, Nottingham 15.5, Oldham 19.4, Portsmouth 11.8, Sheffield 22.1, Sunderland 24.3, Wolverhampton 21.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 7, 1892, TO MAY 13, 1892.

Leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Department of Texas, is granted Colonel Joseph C. Baily, surgeon, U. S. A.

First-Lieut. William E. Purviance, assistant surgeon, U. S. A., is relieved from duty at Fort Riley, Kansas, and will report in person to the commanding officer, Jefferson Barracks, Mo., for duty at that post.

First-Lieut. Francis A. Winter, assistant surgeon, U. S. A., is relieved from duty at Jefferson Barracks, Mo., and will report in person to the commanding officer, Fort Riley, Kansas, for duty at that post.

Major David L. Huntington, surgeon, U. S. A., is relieved from duty in New York City, to take effect on the final adjournment of the Army Medical Board, and will then proceed to Los Angeles, Cal., and report in person to the Commanding General, Department of Arizona, for duty as medical director of that department, relieving Colonel Joseph R. Smith, surgeon. Colonel Smith, on being relieved by Major Huntington, will proceed to San Francisco, Cal., and report in person to Commanding General, Department of California, for duty as medical director of that department.

First-Lieut. William F. Lippitt, Jr., assistant surgeon, U. S. A., upon being relieved from duty at Fort McPherson, Ga., will report in person to the commanding officer, Camp Eagle Pass, Texas, for duty at that post, relieving First-Lieut. Ogden Rafferty, assistant surgeon, U. S. A. First-Lieut. Ogden Rafferty, on being relieved by First-Lieut. Lippitt, Jr., will report in person to the commanding officer, Alcatraz Island, Cal., for duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 14, 1892.

H. J. Babin and M. C. Drennan, surgeons, ordered to Naval Academy to examine the physical condition of candidates for admission to Naval Academy.

Clement Biddle, passed assistant surgeon, ordered to Marine Rendezvous, Philadelphia, Pa.

H. C. Eckstein, surgeon, detached from Marine Rendezvous, Philadelphia, Pa., and wait orders.

Howard Wells, surgeon, ordered to the training-ship "Portsmouth."

James Stoughton, assistant surgeon, from the "Portsmouth" and to the "Constellation."

E. H. Marsteller, passed assistant surgeon, from Naval Academy and to "Constellation."

James G. Field, assistant surgeon, granted one year's sick leave.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING MAY 7, 1892.

Bailhache, P. H., surgeon Detailed as chairman of Boards for physical examination of candidates for promotion and appointment, Revenue Marine Service. April 26 and May 3, 1892.

Mead, F. W., surgeon. Detailed as chairman of Board for physical examination of candidates for appointment, Revenue Marine Service. May 5, 1892.

Kalloch, P. C., passed assistant surgeon.' To proceed to Providence, R. I., on special duty. April 29, 1892.

Kinyoun, J. J., passed assistant surgeon. Detailed as recorder of Board for physical examination of condidates for appointment, Revenue Marine Service. May 5, 1892.

Stoner, J. B., assistant surgeon. Ordered to examination for promotion. April 20, 1892.

Decker, C. E , assistant surgeon. Detailed as recorder of Boards for physical examination of candidates for promotion and appointment, Revenue Marine Service. April 26 and May 3, 1892.

Gardner, C. H., assistant surgeon. To report to commanding officer, Revenue Steamer "Rush" for duty. April 18, 1892.

PROMOTION.

Wheeler, W. A., surgeon. Commissioned as surgeon by the President. April 20, 1892.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, May 23, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock p. m.

Dr. W. M. Conant: "Two Cases of Hernia: I, Right Inguinal Hernia, Incarcerated and Strangulated, Operation; II, Right Inguinal Hernia in a Woman, Radical Cure."

Dr. J. Homans, 2d: "A Case of Spinal Disease."

G. G. Sears, M.D., *Secretary.*

American Electro-Therapeutic Association. — The second annual meeting of the American Electro-Therapeutic Association will be held in New York, October 4, 5 and 6, 1892, at the New York Academy of Medicine, 17 West 43d Street.

W. J. Morton, M.D., *President.*
H. R. Bigelow, M.D., *Secretary.*

APPOINTMENT.

Mr. Greenleaf R. Tucker, S. B., who has been for the past two years Assistant Professor of Chemistry at the Massachusetts College of Pharmacy was elected on May 2, 1892, to the Professorship of the Department of General Chemistry.

RECENT DEATHS.

Pliny Earle, M.D., M.M.S.S., died in Northampton, May 17th, aged eighty-three years. He graduated from the University of Pennsylvania in 1837, and soon became widely known as an authority in mental disease. In 1864 he became superintendent of the State Hospital for the Insane in Northampton, and remained in that position until 1885. He was a member of many societies both in this country and abroad, and was the author of several monographs on insane hospitals and mental disease.

Lorenzo W. Elder, M.D., died in Hoboken, May 11th, aged seventy-two years. He had been Brigade-surgeon of the State Militia and Mayor of the City, and it was largely through his efforts that the County Board of Health was established.

BOOKS AND PAMPHLETS RECEIVED.

Errors in Ventilation. By William Henry Thayer, M.D., Brooklyn, N. Y.

Transactions of the American Orthopedic Association. Vol. iv. Philadelphia. 1892.

First Decennial Catalogue of the College of Physicians and Surgeons, of Chicago, 1881–91.

Twentieth Annual Report of the Health Department of the City of Boston for the year 1891.

The International Medical Annual and Practitioner's Index for 1892. Edited by P. W. Williams, M.D. New York: E. B. Treat. 1893.

Report of the Commissioner of Education for the year 1888–89. Two volumes. Washington: Government Printing Office. 1891.

Diseases of the Nervous System. By Jerome K. Banduy, M.D., LL.D. Second edition. Philadelphia: J. B. Lippincott Company. 1892.

A Text-book of the Practice of Medicine for the Use of Students and Practitioners. By R. C. M. Page, M.D. New York: Wm. Wood & Co. 1892.

A Text-book of the Eruptive and Continued Fevers. By John William Moore, B.A., M.D., M.Ch., Univ., Dublin. New York: Wm. Wood & Co. 1892.

Rupture of the Sac of an Extra-Uterine Pregnancy through the Fimbriated Extremity without Tearing the Fallopian Tube; Operation; Recovery. By Hunter Robb, M.D., Baltimore, Md. Reprint. 1892.

Lecture.

NEW OUTLOOKS IN THE PROPHYLAXIS AND TREATMENT OF TUBERCULOSIS.

The Middleton-Goldsmith Lecture for 1892.

BY FRANCIS P. KINNICUTT, M.D.,
Physician to St. Luke's Hospital and the Presbyterian Hospital, New York.

(Concluded from No. 20, page 491.)

TREATMENT OF PULMONARY AND LARYNGEAL TUBERCULOSIS BY THE CANTHARIDATES.

In February, 1891, Professor Liebreich, in a paper read before the Berlin Medical Society, announced that he had discovered a new remedy for the treatment of tuberculous disease.

The property of cantharidin, when taken internally, of producing an exudation of serum from the capillaries, not only of the kidneys, but also of the lungs and other organs, unattended with increased arterial tension, hyperæmia or extravasation of blood, when used in sufficiently small doses, forms the basis of his theory.

The irritability of the capillaries, according to Liebreich, varies in different parts of the organism in health; in an abnormal state, such as may be assumed to be their condition at the site of local disease, this irritability is increased. By furthering such irritability by the use of the cantharidates, an exudation of serum occurs which may favorably affect tuberculous tissue in two ways: First, by stimulating cell-activity and nutrition; second, through the germicidal action of the serum upon the bacteria.

His experimental investigations apparently indicate in a measure the correctness of his theory. The remedial effects which have followed the use of the cantharidal preparations, while occasionally striking, especially in the case of laryngeal tuberculosis, fall short of securing for them, it seems to me, a permanent place in the therapeutics of tuberculosis.

Their apparent action is in harmony with one of the possible means of a remedial treatment of tuberculosis. Cell-activity is stimulated and specifically diseased tissues are subjected to the germicidal action of the blood-serum artifically increased at the site of the disease. There is a failure possibly in the degree rather than in the kind of action. The preparations at present employed are the potassium and sodium cantharidates. They are administered hypodermatically at intervals of forty-eight hours or longer, and in doses of $\frac{1}{640}$ to $\frac{1}{320}$ of grain. The latter strength not infrequently caused symptoms of vesical and renal distress. Their use is contra-indicated in the presence of intestinal and renal disease, and in patients with marked hectic.

TREATMENT WITH THE SERUM OF DOG'S BLOOD.

The interesting experimental investigations of Richet and Hericourt, announced during the past year to the French Academy of Sciences,[83] with the serum of dog's blood in the treatment of tuberculosis, are in the line of thought that at present underlies our attempts to cope with the disease. These observers have been able to demonstrate that in rabbits inoculated with a culture of the tubercle bacillus, the evolution of tuberculosis can be arrested by subsequently subjecting the animal to injections of dog's serum. When very virulent cultures are employed, the evolution is only delayed. Injections of a healthy animal with the serum, prevent the development of experimental tuberculosis at a later period. The effective substance has not been identified as yet, but a small dose of the serum is sufficient (half a cubic centimetre per kilo of the rabbit).

The clinical results obtained in tuberculous disease of human beings by this method of treatment, which has been fully tried in the Paris hospitals, would indicate that it also fails rather in the degree than in the kind of its action. It certainly acts as a potent stimulant to cell-activity. Whether it possesses another action is undetermined.

CHLORIDE OF ZINC TREATMENT.

I shall briefly refer to the treatment of tuberculous disease with chloride of zinc injections at the site of the disease, announced to the French Academy of Sciences in July of the past year, by Professor Lannelongue.[84]

It is based essentially on the simple fact that fibrinous induration is to be regarded as the natural curative process in tuberculous lesions. The power of the chloride of zinc to excite such sclerotic processes, when administered in sufficiently small quantity to avoid its more powerful escharotic action, suggested its use in the disease in question. Its action in experimental tuberculosis is thus described by M. Lannelongue and M. Achard. The anatomical elements of the tissues which it penetrates, are destroyed and an enormous proliferation of embryonic cells occurs, not only at the site of the injection, but for some distance around it, with infiltration of the tuberculous tissues with migratory cells to the fullest extent. M. Lannelongue suggests that the latter may destroy the bacilli through the exercise of their phagocytic function. The morbid tissue destroyed by the chloride of zinc is slowly absorbed and disappears; the embryonic cells, on the contrary, organize with great rapidity and form firm fibrous tissue, which exists in appreciable quantity as early as the day following the injection.

Twenty-two patients were subjected to this treatment by M. Lannelongue. The list embraces two cases of pulmonary tuberculosis and twenty of suppurating and non-suppurating tuberculous disease of joints and glands. Excellent results are claimed to have been obtained in a majority of the latter. An opportunity was afforded in a case of more or less fused tuberculous glands for comparing histologically, glands which had been injected and those which had been left without treatment. Excision showed caseous material surrounded by a zone of tuberculous tissue within a fibrous sheath, in each; in the injected glands, however, there was a large amount of dense fibrous tissue and firm adhesion to the investing membrane. A report of the results in the pulmonary cases was reserved until a longer period had elapsed.

While recognizing the possible utility of this method of treatment in tuberculous joint and gland disease, either as a remedial measure or as an adjunct to surgical procedures and suggesting the desirability of more extended investigations in this direction, its application in pulmonary tuberculosis, in my judgment, should be regarded with the greatest reserve. Aside from the difficulty of introducing intra-pulmonary injections in any exact way at the site of the lesion, the extent and complexity of the morbid conditions usually present would seem to preclude the possibility of its usefulness as a method of treatment.

The technique of the method employed by M. Lannelongue is to inject two drops of a ten per cent. solution, in a number of places around the periphery of the diseased part, in cases of tuberculous joints, bones and glands. Suppurating glands are thoroughly irrigated with sterilized water and the injections made under rigid antiseptic precautions. In cases of pulmonary tuberculosis, a solution of one in forty is used for the injections.

THE TREATMENT OF TUBERCULOSIS WITH CREASOTE, GUAIACOL AND CARBONATE OF GUAIACOL.

The literature of the treatment of phthisis pulmonalis with creasote, both by internal administration and by inhalation, is sufficiently familiar to those interested in the subject, to warrant the briefest reference to it.

Discovered by v. Reichenbach in 1830, it quickly secured a reputation in Germany, France, and England as a remedial agent in pulmonary disease. It however gradually fell into disuse, and was only rehabilitated in favor in 1877 through the admirable clinical paper of Bouchard and Gimbert on its beneficial effects in consumption.[35] Influenced by their statements, Beverley Robinson instituted its systematic use in his hospital and private practice in this city, as early as 1878, and valuable papers by him have appeared from time to time since on this subject.

In Germany, a series of publications by Sommerbrodt, Fraentzel, v. Brunn, Guttmann and others, confirmatory of the results obtained by Bouchard and Gimbert, appeared in 1887 and 1888. The literature of the subject at the present time is very voluminous, and it may be said to be exceptionally favorable to the value of creasote in the treatment of pulmonary phthisis.

Varied opinions are held in regard to its mode of action, its most efficient dosage and the best method of administration. The determination of these several points is of scientific interest as well as of practical import.

The efficacy of creasote in hindering or arresting fermentative processes in the digestive tract, so frequently present in phthisical patients and thereby promoting appetite, digestion and nutrition, is very generally admitted. Its ability to favorably affect appetite, and to increase the digestive secretions when given by the mouth, by locally stimulating the gastric and intestinal nerve filaments, is also very probable. Through the promotion of a better nutrition, the beneficial effects claimed for creasote in stimulating the resolution and absorption of the secondary inflammatory exudations in tuberculous lungs, may be explained. By its local action, antiseptic and stimulating, especially when given in the form of inhalations, a favorable influence upon the simple catarrhal processes so commonly present, is conceivable and probable. In turning our attention to any *specific* action which creasote may exercise upon the pathogenic cause of tuberculosis and its specific lesions, the results of experimental investigation properly should be considered.

Guttmann,[36] as the result of test-tube experiments, which he claimed, demonstrated the power of creasote, in solution of 1 to 4000, to greatly inhibit the growth of tubercle bacilli, and in solutions of 1 to 2000, to completely devitalize them, was led to believe that a similar specific action could be effected in the human body by the administration of sufficiently large doses of the drug. One gramme of creasote, according to his calculations, present in the circulation, would suffice for this purpose. The experimental investigations very kindly undertaken for me by Dr. John Ely in the Pathological Laboratory of the College of Physicians and Surgeons, and which will be given in detail later, confirm the correctness of Guttmann's observations on the germicidal power of creasote.

Granting, therefore, the germicidal action of creasote *outside* of the human body, and also the possibility of administering it, without injurious effects in daily doses larger than those demanded by Guttmann's hypothesis, a seemingly fatal objection to the theory of the exercise of a germicidal action *in* the economy, is found in very recent investigations, which indicate that creasote enters at once, in the blood, into chemical combinations with certain contained albuminoids, combinations which are without specific germicidal influence. Moreover it has been wisely said that "man is not a test-tube," and no fact appears to be more clearly proved than that the germicidal action of a drug outside of the body affords little basis for correct conclusions of its therapeutic value. Experiments on animals are necessary to determine these points.

In pursuance of this idea, numerous investigators have attempted to test the anti-bacillary power, as well as other effects of creasote in tuberculosis, by the treatment of animals with large doses of this drug both before and after the production of experimental tuberculous disease. I shall refer only to the very interesting experiments of Trudeau [37] and Cornet.[38]

Trudeau's experiments: Four rabbits were inoculated in the anterior chamber of the eye and in the right chest with a similar amount of pure cultures of tubercle bacilli suspended in water. Two of the rabbits were kept as "controls." Two were treated every other day with subcutaneous injections of five cubic centimetres of a ten per cent. solution of pure creasote in almond oil. The course of the eye tuberculosis in the test animals was daily compared with that in the "controls," and was seen to be entirely uninfluenced by the treatment. Tubercles became visible in the iris from the twelfth to the thirteenth day in both sets of animals. Iritis, cloudiness of the cornea and general secondary inflammatory changes were noted in all the rabbits from the eighteenth to the twenty-first day, and the sight was soon lost. All were killed two months after inoculation, and the lungs of both the test and the control animals presented the lesions of advanced tuberculosis.

Cornet's experiments were as follows: Seven strong guinea-pigs were treated with creasote, introduced into the stomach by means of a tube, in doses equivalent for the body weight of a man to rather more than two grammes daily, for a period varying from one to two months. At the expiration of this interval they, with four control animals, were either inoculated with, or were compelled to inhale, finely atomized pure cultures of tubercle bacilli, the creasote treatment being continued in the test animals. A single test guinea-pig died of pneumonia ten days after inoculation. The remaining six died respectively thirty, thirty-two, thirty-three, forty-three, seventy-seven and eighty-four days after infection. Two of the control animals were killed on the thirty-second and forty-third day after infection, the two remaining died on the sixty-first and eighty-fourth day after inoculation. All the animals, both test and control, presented the characteristic lesions of tuberculosis and very little, if any, appreciable difference in the appearance, the degree or the distribution of these could be detected in the two sets.

Experimental investigations, therefore, show in the most positive manner that creasote, administered even in heroic doses, is incapable either of preventing the development of experimental tuberculosis, or of arresting its progress.

The theory of Bouchard, Gimbert, Jaccoud and others that creasote promotes connective tissue growth, by means of which recovery in tuberculous disease is favored, also is not borne out by experimental studies in animals.

The explanation of any favorable influence of creasote on sclerotic processes which *clinical* observations may indicate, should seemingly be sought in the improved nutrition which obtains through its use rather than by the exercise of any specific action.

Guaiacol, obtained by fractional distillation of beechwood-tar creasote, and constituting sixty to ninety per cent. of the latter, was suggested by Sahli,[39] as early as 1887, as a substitute for creasote in the treatment of tuberculous disease. It represents the active principle of creasote, and may be substituted appropriately for it. As prepared in the various laboratories, it probably is not freed from all impurities.

Owing to this fact, very lately Seifert and Hoelscher[40] have proposed the use of the carbonate of guaiacol. Carbonate of guaiacol possesses the advantages over creasote and guaiacol of being a simple, definite and crystalline substance which can be obtained chemically pure. It is a neutral salt, and is tasteless as well as odorless; it does not produce digestive disturbances; it is indifferent to gastric secretion and decomposes in the intestine into guaiacol and carbonic acid.

Many of the above characteristics of this salt have been demonstrated in its use in St. Luke's Hospital. Seifert and Hoelscher, as the result of experimental studies with guaiacol carbonate, have advanced a new and interesting theory of the mode of action of the creasote preparations in tuberculous disease. The basis of their theory apparently rests on the fact that experiments on dogs show that creasote and guaiacol do not circulate in a free state in the blood, and that they are eliminated by the kidneys in the form of the salts of ethyl sulphuric acid (ætherschwefelsäure). They argue that during absorption, the active principle of creasote allies itself with the albuminoids in the blood and specifically through the agency of the sulphur contained in the albumin molecule. The blood of tuberculous patients contains in addition to normal albumin other albuminoid substances arising from the disease process, that is, the products of the tubercle bacilli. These substances constitute unstable combinations, prone to cause or undergo chemical processes, which act poisonously. The toxic albuminoids engendered by the disease, are chiefly responsible for the fever, night sweats, etc. The guaiacol by allying itself with them, renders them stable and therefore non-toxic. The chemical combinations effected by the guaiacol are without germicidal influence, and the favorable results obtained through the use of the creasote preparations in tuberculous disease, therefore, should be regarded as due in a large measure to their influence in assisting in the elimination of the toxic products of the specific disease process.

Seifert's and Hoelscher's theory in no respect militates against other favorable influences which have been ascribed to the creasote preparations, such as the probable direct stimulation of the appetite and thereby improved nutrition, etc. The observations thus far made in St. Luke's Hospital in the use of guaiacol carbonate lead me to believe that it may be substituted very favorably for both creasote and guaiacol.

INVESTIGATIONS IN ST. LUKE'S HOSPITAL WITH MODIFIED TUBERCULIN, CREASOTE, GUAIACOL AND CARBONATE OF GUAIACOL.

During the past winter sixty-five cases of pulmonary tuberculosis have been under my care continuously in the wards of St. Luke's Hospital. Many of these were cases of very advanced disease, without the possibility of recovery, and the treatment consisted merely in attempts to ameliorate the most distressing symptoms. Nineteen of the remaining cases were selected for treatment, respectively with Hunter's modifications of Koch's tuberculin, with subcutaneous injections of guaiacol and with creasote by the mouth. It was my desire, not so much to test the comparative merits of different methods of treatment, as to corroborate or otherwise, Cheyne's and Hunter's observations, and to determine both the practicability of employing a very large daily dosage of creasote and any advantages this method might possess over its use in smaller quantities. Seven cases of well-marked tuberculosis are embraced in the group treated with Hunter's modfied tuberculin. The details of the histories of these patients and the results of treatment are given in a tabulated form for convenience of study. It will be seen that three cases have been under treatment for three months, the remainder for nearly two months. Physical examination in two of the former cases indicates no appreciable change in the pulmonary lesions during treatment. In the third case, the improvement in the signs of disease and in all other respects has been most marked. Physical examination indicates not only the dryness of the cavity but also its very evident contraction, as well as a diminution in the degree of the contiguous disease process. In the four remaining cases, there has been no improvement in one; in one, improvement has been marked; in one, it has been distinct, though less marked; and in one case an *arrest of the disease*, at least temporarily, has occurred. By improvement is meant a marked diminution in the physical signs of disease.

The seventh case is certainly an example of arrested phthisis. This is of such rare occurrence in pulmonary tuberculosis of this degree, under conditions which commonly prevail in large city hospitals, as to be particularly noteworthy. A very distinct impression has been made on my mind in observing from day to day the cases treated with modified tuberculin, that its stimulation of the nutritive processes is not so marked as its effect upon the specific lesions. Creasote, on the other hand, has seemed to me to possess the former quality in a greater degree. To meet possible criticism, all the above cases have received no other treatment than tuberculin, beyond the administration of cod liver oil and, from time to time, various ferruginous preparations.

The exact mode of preparation of the modifications used is given in a note. The rules of dosage were to give 0.002 gm. for the initial inoculation and to increase by 0.002 gm. daily. The rule also was made *not* to increase the dose, if any elevation of temperature followed inoculation. With the modifications B and CB, appreciable reactions did not occur in these cases. In a single case, treated with CB, a rise of temperature followed an inoculation of 0.008 gm. and an acute catarrhal process was developed at the apex of one lung. At the expiration of the tenth day, defervescence occurred, and no further ill effect has followed. For this reason, modification B has been used in all other cases but one. Trudeau has also adopted, I believe, modification B as the preferable one. Through the absence of all reaction and discomfort attending the use of B all patients treated with it have been able to be continuously about the ward and out of doors. Only the usual, very inexact, method for determining the number of bacilli in the sputum was used. Repeated examinations were made and they were found in all.

The number of cases treated with modified tuberculin, while much too small to permit the expression of a positive opinion of its power to exercise a specific remedial action, is large enough to indicate in the strongest manner the desirability of continued investigations of its *apparently specifically beneficial effects.**

My desire to test the practicability of employing a very large daily dosage of the creasote preparations, and to determine, if possible, any advantage which this method might possess over their use in smaller quantities, has been fulfilled in a measure. Several of the patients selected for this treatment, presented in a well-marked degree many of the symptoms, namely, hectic, sweats, etc., attributed to the toxic influence of the *products* of the bacillus, and were therefore well adapted to test the effect of creasote upon such manifestations.

It will be seen in a study of the tabulated report that seven cases have been treated with subcutaneous injections of guaiacol, rapidly pushed to a daily dosage of one gramme, and five cases with creasote by the mouth, also rapidly increased to *six grammes* daily. In four of the former cases there has been little if any appreciable change in the physical signs of disease. In one of these, however, the general condition has greatly improved and there has been a gain in weight of eight pounds. In one, the weight has decreased by one and three-quarter pounds; in one, there has been a loss of four pounds; in one, the weight has remained stationary. In two of these cases, the daily sputum has slightly increased in amount, in two, it has slightly diminished.

In the three remaining cases, there has been a progressive increase of the pulmonary lesions. No influence upon hectic, when present, has been observed. Night sweats, however, have been affected favorably. In a single case, suffering from chronic diffuse nephritis (confirmed by autopsy), a marked increase in the albuminuria was observed when a daily dosage of one gramme was reached. The treatment was then discontinued and the albuminuria gradually diminished. In no other case, treated either with guaiacol or creasote, has any trace of albumin appeared in the urine, in examinations made every other day. In a single case, when the maximum dose of guaiacol was reached, the urine became dark in color and very similar in appearance to urine containing carbolic-acid products.

Dr. Ely's report on the enumeration of tubercle bacilli in the daily sputum of several patients treated with guaiacol, contains observations of interest and practical import. It indicates the possibility of incorrect conclusions even from the best method at our command for this purpose; also the absence of bacilli from time to time, in the sputum of patients suffering from grave pulmonary tuberculosis.

In Cases II and IV, where there has been no apparent increase in the lesions and the general condition has remained stationary; the number of bacilli has greatly diminished.

In Case VII, in which the area of disease has slightly increased and the general condition has deteriorated, the bacilli have greatly increased in number.

In the cases treated with creasote, there has been no appreciable difference in the physical signs of disease up to the present date, in two. In these, there has been a gain of one pound and a loss of three pounds respectively.

In the three remaining cases there has been a progressive increase of the lesions. The effect of a very large daily dosage of creasote upon hectic and sweats corresponds to that noted in the use of guaiacol. Entire tolerance of six grammes (over one and one-half drachms) of creasote was exhibited by three of the five patients. One complained of slight gastric discomfort when a daily dosage of five grammes was reached, and one patient who had suffered from occasional nausea and vomiting previous to the administration of creasote, believed that these symptoms were increased by it. Several other patients at present in my wards are taking four to six grammes of guaiacol daily, without gastric or intestinal discomfort.

Carbonate of guaiacol has been used, so far as its supply permitted; and aside from the advantage of being tasteless and odorless and only being decomposed by the intestinal secretions, it has seemed to me to very positively stimulate appetite.

The clinical conclusions which I have formed from a careful study of these cases are: that both creasote and guaiacol in certain forms can be given in very large doses with entire tolerance and without injurious effects; that such dosage apparently possesses no advantages over a much smaller one, and that it has no greater effect upon hectic and night sweats; that subcutaneous injections of the drug possess no advantages over administration by the mouth: that whatever beneficial influence creasote may exert in pulmonary tuberculosis can be effected with a comparatively small dosage, and that favorable results can be expected only by its continuous and prolonged employment.*

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* Method of preparation of Hunter's modifications:

"Modification B: One cubic centimetre of tuberculin, five cubic centimetres distilled water, saturation with preferably large crystals of ammonium sulphate for twenty-four hours in the cold, the precipitate filtered off and freed so far as possible from any crystals of ammonium sulphate, placed in dyalizer and dyalized just so long, and no longer, in running water and then in distilled water until all trace of ammonium sulphate has disappeared. Crystals of thymol added to the solution to prevent any putrefactive change; the solution then made up to such bulk that ten cubic centimetres shall correspond to each cubic centimetre of tuberculin employed. (Title B, 10%.)

"Modification CB: Two cubic centimetres of tuberculin dropped into twenty cubic centimetres absolute alcohol; heavy precipitate filtered off in a quarter of an hour, filtrate evaporated over water bath at temperature preferably not exceeding 40° C., and just sufficiently long to drive off all alcohol; residue taken up in twelve cubic centimetres distilled water; placed in dyalizer and dyalized for two hours in running stream of water. Quantity made up to twenty cubic centimeters, including two cubic centimetres of pure glycerine used for preservative purposes. A few crystals of thymol added. (Title CB, 10%.)"

The above modifications were prepared for me in the chemical laboratory of the College of Physicians and Surgeons.

* Creasote was administered, without exception, in the form of what are known as the "Enteric Pills" of a well-known manufacturer. The nature of their protecting envelope I am ignorant of. Personal investigations of the effect of an artificial gastric juice

No. sex, age.	Patient's history and physical examination at beginning of treatment.	Patient's weight, daily sputa, inoculation used, date when begun.	Duration of treatment weight, and sputa, to date.	Physical examination at present date.
1. Male, 42.	Profuse hæmoptysis 5 years ago; pleurisy 3 years ago; night-sweats and cough since, with loss of 40 lbs. in weight. Physical signs: Slight retraction beneath right clavicle. Evidence of cavity in first interspace; also very abundant largish moist râles at this site. Abundant subcrepitation from first space to base. Posteriorly, same side, abundant subcrepitation, with larger râles, over supraspinous fossa. Abundant subcrepitation over whole of scapular region. Patient apyretic.	Jan. 13, 1892; weight, 134 lbs. Sputa, ℥ iv, daily average. "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 141¼ lbs. Sputa, ℥ j¼, daily average. "B." 0.198 gm. to increase by 0.002 gm. daily.	April 25th. — Physical signs: Marked retraction, directly beneath right clavicle. Signs of cavity distinctly less marked, and it is apparently nearly dry. Scanty subcrepitation in second space; below this point, *no* adventitious sounds present. Posteriorly, adventitious sounds *absent* over supraspinous fossa and marked diminution of subcrepitation over scapular region. Patient apyretic; no night-sweats. *Very marked improvement.*
2. Male, 47.	History of 18 months; sputum occasionally tinged with blood; absence of night-sweats. Physical signs: Consolidation without crepitation over first and second right spaces and over supraspinous fossa. Posteriorly, subcrepitation over interscapular region. Left lung, feeble respiratory murmur, with scanty subcrepitation beneath clavicle and over supraspinous fossa. Evening temperature occasionally 100°.	Jan. 14, 1892; weight, 122 lbs. Sputa, ℥ j, daily average. "C. B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 125 lbs. Sputa, ℥ j, daily average. "C. B." 0.092 gm. to increase by 0 002 gm. daily.	April 25th. — Physical signs: Practically the same as on first examination. Evening temperature occasionally 100°. *Condition stationary.*
3 Female 32.	History of cough and occasional hæmorrhage for past 2 years. Physical signs: Dulness, with rather abundant subcrepitation in first right interspace; scanty subcrepitation in second space. Dulness, with moderate subcrepitation posteriorly, over supraspinous fossa and scapular region. Patient apyretic.	Jan. 17, 1892; weight, 105 lbs. Sputa, ℥ j, daily average. "C. B." 0.002 gm. to increase by 0.002 gm. daily.	April 21, 1892; weight, 107 lbs. Sputa, ℥ j¼, daily average. "C. B." 0.176 gm. to increase by 0.002 gm. daily.	April 21st. — Physical signs: Dulness with scanty subcrepitation in first space; absent in second. Dulness with scanty subcrepitation over supraspinous fossa and scapular region. Little appreciable difference from first examination. Patient apyretic. *Condition stationary.*
4. Male, 50.	Cough for past year; gradual loss of flesh and strength. Physical signs: Impairment of resonance over upper half of left chest, anteriorly, with fairly abundant subscrepitation over same. Posteriorly, impairment of resonance over upper half of left chest, with abundant subcrepitation over supraspinous fossa and scanty in areas over scapular region. Patient apyretic.	March 2, 1892; weight, 144 lbs. Sputa, ℥ j, daily average. "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 148½ lbs. Sputa, less than ℥ j, daily average. "B." 0.110 gm. to increase by 0.002 gm. daily.	April 25th. — Physical signs: Little appreciable difference in resonance over upper half of left chest since first examination. Crepitation has almost wholly disappeared anteriorly, and is practically absent posteriorly. Patient apyretic. *Marked improvement.*
5. Male, 32.	Hæmorrhage 5 years ago and another 3 years ago, very profuse. Since latter, unable to work, and has lost 40 lbs. in weight. Treated with tuberculin in Presbyterian Hospital a year ago, and apparently improved temporarily. Physical signs: Diffuse infiltration upper lobes of both lungs, with abundant subcrepitation at apices and scantier over remainder of affected regions. Most marked right apex; occasional night-sweats. Patient apyretic.	March 2, 1892; weight, 123 lbs. Sputa, ℥ j, daily average. "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 119 lbs. Sputa, ℥ j, daily average. "B." 0.078 gm. to increase by 0.002 gm. daily.	April 25th. — Physical signs: No appreciable difference from first examination. Occasional night-sweats. Patient apyretic. *Condition stationary.*
6. Male, 33.	Cough for 3 months; no hæmoptysis, no night-sweats. Physical signs: Impairment of resonance, with loss of vesicular respiration over right infraclavicular region. Abundant subcrepitation in second and third spaces. Similar signs over whole left chest anteriorly; in less degree also over left supraspinous fossa and scapular region. Slight pyrexia; evening temperature, 100°—100·2°.	March 3, 1892, treatment begun March 21st, weight, 132 lbs. Sputa, ℥ ss., daily average. "B." 0.002 gm. to increase by 0.002 gm. daily.	April 25, 1892; weight, 135 lbs. Sputa, none. "B." 0.100 gm. to increase by 0.002 gm. daily.	April 25th. — No appreciable difference in impairment of resonance over affected regions. Subcrepitation scanty at present over right chest, and absent over supraspinous fossa and scapular region, left. Anteriorly, same lung, no appreciable difference from first examination. Patient apyretic since March 18th. *Improvement.*
7. Male, 41.	Cough for 6 months; no hæmoptysis, no night-sweats; gradual loss of flesh. Physical signs: Impairment of resonance, slightly prolonged and high pitched expiration, with abundant subcrepitation in first two spaces, left; scanty, fine crepitation below. Same signs over supraspinous fossa as beneath clavicle; over upper half scapular region, scanty crepitation after cough. Slight pyrexia; occasional evening temperature, 100°.	March 3, 1892; weight, 135 lbs. Sputa, ℥ ss., daily average. "B." 0.002 gm. to increase by 0.002 gm. daily.	April 18, 1892; weight, 135 lbs. Sputa, none. Discharged, through desire and ability to go to work.	April 25th.— Impairment of resonance over first two spaces. Respiration feeble, but expiration *not* prolonged or increased in pitch. *Entire absence of all adventitious sounds* over whole of left chest, anteriorly and posteriorly. Patient continuously apyretic since March 18th. *Disease at present arrested.*

TREATMENT WITH SUBCUTANEOUS INJECTIONS OF GUAIACOL RAPIDLY INCREASED.

No. sex, age.	Patient's history and physical examination at beginning of treatment.	Patient's weight, daily average of sputa (℥), when guaiacol mj, increasing mj daily, was begun ; date.	Duration of treatment, weight, and sputa, to date.	Physical examination at present date.
1. Female 17.	Cough for 10 months ; progressive loss of flesh and strength ; no hæmoptysis ; moderate night-sweats. Physical signs : Excavation at right apex anteriorly, with consolidation below ; posteriorly, same lung, consolidation with numerous large râles and abundant subcrepitation over whole of scapular region, below fine crepitation. Left, anteriorly, moderate consolidation at apex, without crepitation. Advanced laryngeal disease. Marked hectic ; evening temperature, 102°–103°.	Weight, Feb. 27, 1892, 70¼ lbs. Average daily sputa, ℥ ss.—℥ j. Guaiacol, 0.05 gm. daily, to increase 0.05 gm. daily to 1 gm.	March 20, 1892, 71 lbs. Average daily sputa, ℥ j—℥ ij. Guaiacol, 1 gm. reached to-day ; discontinued.	March 20th. — Physical signs : Progressive increase of lesions ; night-sweats. Marked hectic ; evening temperature, 102°—103°.
2. Female 30.	Hæmoptysis 3 years ago ; present history of cough, 3 months ; progressive loss of flesh and strength ; no night-sweats. Physical signs : Dulness, prolonged and high-pitched expiration over left infraclavicular region, with very abundant subcrepitation. Same signs posteriorly over upper half of left lung. Right, similar signs, less in degree, anteriorly and posteriorly over upper half. Slight pyrexia ; evening temperature, 100°.	Weight, Feb. 27, 1892, 91¼ lbs. Average daily sputa, ℥ j. Guaiacol, 0.005 gm. daily to increase 0.05 gm. daily to 1 gm.	April 25, 1892, 91½ lbs. Average daily sputa, ℥ j—℥ ij. Guaiacol, 1 gm. daily for 37 days.	April 25th. — Physical signs : Little appreciable difference from first examination, except subcrepitation now heard over whole left lung posteriorly. No night-sweats. Slight evening temperature.
3. Female 24.	Pleurisy, right side, 3 years ago. Empyema same side 1 year ago, exsection of rib ; cough and frequent hæmoptysis since ; night-sweats. Physical signs : Large antrum in first right space, nearly dry. Moderate consolidation, without crepitation, in second space. Consolidation, apex, same lung, posteriorly, without crepitation. Patient apyretic.	Weight, Feb. 27, 1892, 135 lbs. Average daily sputa, ℥ ij—℥ ss. Guaiacol, 0.05 gm. daily to increase 0.05 gm. daily to 1 gm.	April 25, 1892, 141 lbs. Average daily sputa, 0—℥ ss. Guaiacol, 1 gm. daily for 37 days.	April 25th. — Physical signs : Anteriorly, no appreciable difference from first examination ; posteriorly, moderate subcrepitation at apex and over upper half of scapular region. Patient apyretic ; occasional night-sweats. Marked improvement in *general* condition.
4. Female 44.	Pneumonia 3 years ago ; cough since ; no hæmoptysis ; no night-sweats at present. Physical signs : Consolidation, with fairly abundant subcrepitation at both apices. Subcrepitation also present over upper half right scapular and upper third left scapular regions. Slight pyrexia ; occasional evening temperature, 100.2°.	Weight, Feb. 28, 1892, 91¾ lbs. Average daily sputa, ℥ ss.—℥ j. Guaiacol, 0.005 gm. daily to increase 0.005 gm. daily to 1 gm.	April 25, 1892, 90 lbs. Average daily sputa, ℥ ss. Guaiacol, 1 gm. daily for 37 days.	April 25th. — Physical signs : No appreciable difference from first examination ; no night-sweats. Occasional evening temperature, 100.2°—100.3°.
5. Female 32.	Grippe a year ago ; cough since ; no hæmoptysis ; profuse night-sweats. Physical signs : Areas of infiltration throughout upper lobe, right lung, with abundant subcrepitation. Areas of infiltration upper lobe, left lung, with abundant subcrepitation and evidence of beginning excavation at apex. Hectic ; evening temperature, 101°—102°.	Feb. 28, 1892, 72 lbs. Sputa, ℥ ij—iv, daily average. Guaiacol, 0.05 gm. daily ; increasing 0.05 gm. daily. March 12, 1892, 0.60 gm. Weight, 72 lbs. ; sputa, ℥ ij—iv.	March 15, 1892, guaiacol by mouth, mx ; miv daily average. March 24th, miij daily in pill, not increasing. April 1, 1892, weight, 64 lbs. April 6, 1892, sputa, ℥ iv—v.	April 1st. — Physical signs : Progressive increase of lesions ; moderate sweats. Treatment apparently some effect on sweats, none on fever. Died April 7, 1892.
6. Female 46.	History of 10 months ; a single hæmoptysis ; night-sweats almost continuously. Physical signs : Large antrum, apex left lung, with impaired resonance and abundant subcrepitation to base anteriorly. Posteriorly, areas of subcrepitation to base. Beginning disease at right apex. Hectic ; evening temperature, 101°—102°.	Feb. 28, 1892, 95½ lbs. Sputa, ℥ j—ij, daily average. Guaiacol, 0.05 gm. daily ; increasing 0.05 gm. daily. March 9, 1892, 0.45 gm. Weight, 93¾ lbs. ; sputa, ℥ ij—iij.	Treatment discontinued before maximum dose reached ; no further treatment. March 24, 1892, weight, 96¼ lbs. March 31, sputa ℥ ss.—℥ ij.	March 10th. — Progressive increase of lesions. Treatment apparently some effect on night-sweats, none on fever. Died April 1, 1892.
7. Male, 31.	Typical history since last November ; several hæmoptyses ; no night-sweats. Physical signs : Feeble respiratory murmur, with abundant subcrepitation over whole right lung anteriorly, and upper half of scapular region. Similar signs in slightly less degree over upper lobe left lung, anteriorly and posteriorly. Pyrexia ; evening temperature, 101°—102°.	March 2, 1892, 92 lbs. Sputa, ℥ vij—xjss., daily average. Guaiacol, 0.05 gm. daily ; increasing 0.05 gm. daily. March 21, 1892, 1 gm. for 2 days. Weight, 88½ lbs. ; Sputa, ℥ vij.	March 22, 1891, guaiacol carbonate, gr. vj daily by mouth. April 12, 1892, weight, 86¼ lbs. Sputa, ℥ iij ; treatment stopped. April 19, 1892, guaiacol pill, mvj daily ; increasing, miij. April 25, mxxvij ; weight, 88 lbs. ; sputa, ℥ iij.	April 25th. — Physical signs : Very similar to those of first examination, except subcrepitation heard over whole of left lung anteriorly and posteriorly ; no night-sweats ; pyrexia. Evening temperature, 100°—101°. General condition worse.

Dr. Ely's reports of his investigations on the germicidal action of creasote on the tubercle bacillus outside of the human body, and on the enumeration of bacilli in the daily sputum of patients, treated with guaiacol, are appended.

For valuable assistance rendered me in my investigations, I desire to express my thanks to Drs. John Ely and Robert J. Devlin and to the gentlemen of the House Staff of St. Luke's Hospital, Drs. Hollis, Rogers, Bunce, and Tuttle.

DR. ELY'S REPORT ON THE GERMICIDAL ACTION OF CREASOTE OUTSIDE OF THE HUMAN BODY.

Shortly after the revival of interest in creasote as a therapeutic agent in tuberculosis, the question arose as to the manner in which its beneficial effect was produced. Its general preservative and anti-fermentative properties had long been recognized and made use of in the arts, and the possibility of a similar inhibiting or germicidal action upon the specific germs of tuberculosis at once suggested itself. With a view to the solution of this problem, Guttmann undertook a more definite determination of its germicidal action.

In his experiments nutrient gelatine was impregnated with creasote in proportions varying from 1 : 500 to 1 : 8000. Into this, seventeen different species of bacteria, thirteen of them pathogenic, were inoculated, at the same time similarly inoculated tubes of ordinary nutrient gelatine serving as controls. The inhibiting action of the creasote was found to vary considerably with the different species, but in general a creasote content of 1 : 2000 was found sufficient to prevent growth. The plan of experiment received slight modification in the case of the tubercle bacillus, blood-serum being used as the nutrient medium and the cultures, after inoculation, being placed in the thermostat at a temperature of 37° C. After several weeks, examination showed a meagre growth in the tubes which had contained creasote in the proportion of 1 : 16000; none in the others.

Since these experiments of Guttmann, so far as I am aware, stand quite alone, it has been thought advisable to repeat them in so far as they relate to the tubercle bacillus, but in slightly modified form. Instead of blood-serum, glycerine-bouillon and glycerine-agar have been used as nutrient media, both of which have shown themselves particularly well adapted to the growth of the tubercle bacillus; and an aqueous solution of guaiacol, the principal ingredient of creasote, had been substituted for the alcoholic solution of creasote employed by Guttmann in the preparation of his media.* These media were impregnated with guaiacol in the proportions of 1 : 1000, 1 : 2000, 1 : 3000 and 1 : 4000, and into them were introduced particles of a rapidly growing culture of the tubercle bacillus, other media, not containing guaiacol, being at the same time inoculated as controls. All were then sealed and placed in the thermostat at 37° C. At the end of seven weeks they were examined and the records tabulated below noted. It may be permissible to state here that every slightest indication of growth was carefully searched for and that no record is made except where all the conditions necessary to the growth of tubercle bacilli were observed, so that the entry "No growth" in the tables below means literally what it says.

SERIES A. GLYCERINE-BOUILLON.

Inoculated March 11, 1892; Examined April 29, 1892.

Control. 4 Flasks.	1 : 1000. 2 Flasks.	1 : 2000. 2 Flasks.	1 : 3000. 3 Flasks.	1 : 4000. 2 Flasks.
1. Moderate growth, not spreading much, but heaping.	No growth.	No growth.	No growth.	Apparently slight heaping up, thought to indicate very slow growth.
2. Luxuriant growth, overgrowing whole surface of the bouillon.	No growth.	No growth.	No growth.	Slight heaping, though somewhat questionable.
3. Luxuriant growth, overgrowing whole surface of the bouillon.			No growth.	
4. Moderate growth, heaping.				

SERIES B. GLYCERINE-AGAR.

Inoculated March 11, 1892; Examined April 29, 1892.

Control. 4 Tubes.	1 : 1000. 5 Tubes.	1 : 2000. 5 Tubes.	1 : 3000. 5 Tubes.	1 : 4000 5 Tubes.
1. Very luxuriant growth, heaping and spreading.	No growth.	No growth.	No growth.	No growth.
2. Abundant growth, heaping and spreading.	No growth.	No growth.	No growth.	Very slight heaping and cloudiness at edges as if growing sluggishly.
3. Moderate growth.	No growth.	No growth.	No growth.	Abundant growth.
4. Moderate growth.	No growth.	No growth.	No growth.	Very slight heaping; no apparent spreading.
	No growth.	No growth.	No growth.	Slight heaping and cloudiness at edges as if slowly spreading.

DR. ELY'S REPORT ON THE ENUMERATION OF BACILLI IN THE DAILY SPUTUM OF PATIENTS TREATED WITH CUTANEOUS INJECTIONS OF GUAIACOL.

While fully recognizing the illusive nature of conclusions as to the value of therapeutic agents based upon periodical determinations of the number of tubercle bacilli in the sputum, it has been thought desirable to make such determinations in a number of the cases treated with creasote and guaiacol.

The method employed for this purpose has been that recommended by Nuttall, the details of which are to be found in the *Bulletin of the Johns Hopkins Hospital*, Vol. II, No. 13, May, June, 1891.

Although this method is unquestionably the most accurate thus far proposed, it is nevertheless subject to great error, and the results are liable to be particularly misleading in cases in which the amount of expectoration is large and the number of bacilli small.

Case VII, tabulated on page 518 may be referred to as an example. About eleven ounces of sputum were eliminated daily. This was so viscid that its disintegration necessitated the addition of considerably more than an equal bulk of potash and water, so that the

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upon the envelope showed that it was partially dissolved after one hour.

* Notwithstanding Guttmann's statement to the contrary, it was thought possible that the alcohol necessary for the solution of the creasote might have a disturbing influence upon the experiment.

total amount after dilution came to be 700 cubic centimeters. Since the dropper used delivers about 100 drops to the cubic centimeter, the content of each drop (in this particular case) must be multiplied by 70,000 in estimating the total number of bacilli eliminated in twenty-four hours, and, of course, any error in the determination of the number of bacilli to the drop is similarly multiplied. And when there are only a few bacilli to each drop, all may be overlooked in counting fifty fields, or, on the other hand, a disproportionate number may chance to be seen. Thus, in Case VII, while the majority of the fields contained no bacilli, one had three. A discrepancy of 100,000 or so is a matter of small import when many millions of bacilli are present, but may be very misleading when there are only a few hundred thousand.

RESULTS OF THE DETERMINATION OF THE ACTUAL NUMBER OF TUBERCLE BACILLI IN TWENTY-FOUR HOURS' SPUTUM BY NUTTALL'S METHOD.

Case.	Date.	Quantity of Sputum.	Number of Bacilli.
I.	Feb. 21, 1892.	f ℥ ix.	227,684,401
II.	Feb. 24, 1892.	f ℥ xii.	7,798,791
	Mar. 23, 1892.	f ℥ ix.	4,189,915
	Apr. 6, 1892.	f ℥ i.	1,946,657
	Apr. 29, 1892.	f ℥ iij.	380,828
III.	Feb. 22, 1892.	f ℥ i.	579,792
	Mar. 23, 1892.	f ℥ iij.	About 100 fields carefully gone over without finding any bacillus. Whole drop then examined systematically, and still none found. Stain good.
	Apr. 29, 1892.	f ℥ iv.	6,858,090
IV.	Feb. 26, 1892.	f ℥ vi.	7,707,033
	Mar. 23, 1892.	f ℥ vi.	274,246
	Apr. 6, 1892.	f ℥ iv.	202,149
	Apr. 29, 1892.	f ℥ ij.	270,228
VII.	Mar. 17, 1892.		One hundred fields carefully gone over, no bacillus. Whole drop, no bacillus. Stain good. A second cover of same examined with same result.
	Mar. 28, 1892.	f ℥ x f ℥ vi.	One hundred fields searched as above, no bacillus. Duplicate cover gives same result.
	Apr. 6, 1892.	f ℥ xiss.	1,307,395
	Apr. 29, 1892.	f ℥ xi.	2,915,976

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Original Articles.

PNEUMONIA IN BOSTON DURING THE RECENT EPIDEMIC OF INFLUENZA.[1]

BY GEORGE B. SHATTUCK, M.D.,
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DURING the progress of the epidemic of influenza, with which, I think, we must acknowledge we have been visited this winter, I was impressed with the evident increase in the number of cases of pneumonia entering the City Hospital in my own service and in those of my colleagues, and also with the large number of deaths, especially among old people, as appearing in the daily papers and in the reports of the City Board of Health. Moreover, not a few of the pneumonias, as observed at the City Hospital, exhibited peculiarities or irregularities; they were less frank than usual in their development and in their resolution.

As I had about this time fallen a victim to your President's energy, and promised to occupy part of one of his evenings, it occurred to me I would look up these general points in a general way and give you the results, which might at least derive some interest and possibly some value from a comparison with those of a very recent previous epidemic of influenza, and those of an intervening non-epidemic year, sandwiched between the two.

But upon re-reading the contributions to the exposition of the relations between pneumonia and influenza and the mortality-rate and influenza, I found them more elaborate than I had remembered them to be. I thought, however, it was desirable that any new statements in regard to the past two years should be put in a form comparable with those previously furnished with regard to the previous epidemic. Hence, instead of letting you off with a few simple, and perhaps vague statements, I come before you with some tables, a form of setting forth facts which it has been my duty as an editor to discourage in others. The immediate cause of this unfortunate result is the zeal of your President, as before said; the remote cause is the zeal of my predecessors.

The Clinical Section of the Suffolk District Medical Society held a meeting January 15, 1890, for the discussion of influenza then epidemic in Boston, a discussion which was opened by Dr. F. C. Shattuck and closed by Dr. A. L. Mason;[2] at this meeting the relation of pneumonia to influenza was incidentally considered. The New York Academy of Medicine devoted its meeting April 7, 1890, to the discussion of the relation of pneumonia simply to influenza. Dr. E. G. Janeway occupied himself with New York, but his paper was not published; Dr. Wm. Pepper gave the results for Philadelphia;[3] and Dr. F. C. Shattuck those for Boston.[4]

As our subject was not only the same but dealt with the same locality, it seemed better to follow the general plan of dealing with it adopted by my brother two years ago, and see how far the results would lead to similar conclusions reached by him then or formulated by Dr. Pepper from his figures and observations obtained in Philadelphia. Accordingly where there were tables — and I regret both for your sake and my own that there were so many — I have tabulated the same details for 1890–91, 1891–92, thus giving a comparison of eight years instead of six, and of two epidemic periods instead of one, For, whether or not there was a recurrence of influenza as an epidemic at any earlier period of the year 1891 than December, I think we may accept the months of December, 1890, and January, 1891, as practically free from it. I have tabulated the records of the Boston City and of the Massachusetts General Hospitals, from December 10, 1890, to February 1, 1891, and from December 10, 1891, to February 1, 1892, as a continuation of similar statistics for previous years. As arbitrary dates have to be adopted to represent the epidemic limits, these are, perhaps, as good as any others. It may be that some observers would fix an earlier or a later date for the beginning or the decline of this or of the previous epidemic, but for purposes of comparison, especially in regard to diseases of the respiratory organs, it is, of course, essential to take as nearly as possible the same season of each year.

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[1] Read at the meeting of the Boston Society for Medical Improvement.

[2] Boston Medical and Surgical Journal, vol. cxxii, No. 7, 1890.

[3] Remarks on the Frequency and Character of the Pneumonias of 1890; Medical News, vol. lvii, p. 1, 1890.

[4] The Relation of Pneumonia to Influenza in Boston: New York Medical Journal, vol. li, p. 650, 1890.

Table I.

Deaths from Pneumonia reported at the Boston City Hall for the Months of December and January, 1884–85 *to* 1891–92, *inclusive.*

Months.	1884–85	1885–86	1886–87	1887–88	1888–89	1889–90	1890–91	1891–92
Decemb'r	141	74	113	95	68	105	100	223
January,	103	83	91	183	92	332	139	240
Total,	244	157	204	278	160	437	239	463

Table I shows that the number of deaths returned in Boston as due to pneumonia, December and January, 1891–92, was greatly increased over the previous six non-influenza years; that this increase was about as great for December as for January; that the number of deaths for the two months exceeded that of 1889–90, by 26, though the distribution was different, there being 118 more deaths in December, 1891, and 92 less deaths in January, 1892.

Table II.

Cases of Pneumonia admitted to the Boston City and Massachusetts General Hospitals from December 10*th to February* 1*st, for the Years* 1884-85 *to* 1891-92.

	1884–85	1885–86	1886–87	1887–88	1888–89	1889–90	1890–91	1891–92
Total,	33	26	80	68	40	127	48	101
Deaths,	14	4	12	26	13	38	13	39
Mortality	42+%	15+%	40%	39%	32½%	30%	27%	38%

Table II shows, from the hospital returns, that the mortality, as well as the number of cases, was largely increased, the per cent, being 5½% above the average of the previous six non-influenza years, whereas it was 2½% below the average of those years for the same period 1889–90. It is a curious coincidence that twenty-six fewer cases of pneumonia entered the hospitals, and twenty-six more deaths were reported at City Hall.

Table III shows by weeks that the increase in deaths from pneumonia began earlier and was more rapid this winter than last winter or the winter of the previous epidemic, and the same is true of bronchitis comparing this winter with last winter. The week ending January 2d, was the week of greatest mortality from pneumonia this winter, whereas last winter and the winter before it was a week later. The maximum mortality from bronchitis occurred the same week this winter as last winter, and the number of deaths was, curiously, the same; it was a week later than that for pneumonia. If the early increase in deaths from pneumonia was dependent upon epidemic influenza the epidemic this season should have manifested itself earlier than two years ago. Personally I should have said it developed, if anything, a little later. The editorial column of the *Boston Medical and Surgical Journal*, which I understand rarely errs, under date of December 17, 1891, says: "It seems to be the general impression that epidemic influenza has once more made its appearance in the United States, though as yet it has not assumed a serious aspect. The Boston Board of Health does not officially recognize its presence in this city, but admits the apparent increase of catarrhal troubles and pneumonia during the last month," etc. The views of individual practitioners upon this point would be of value.

Table III.

Deaths from Pneumonia reported at the Boston Board of Health in December and January, 1889, 1890, 1891 *and* 1892, *by Weeks.*
Deaths from Bronchitis December, 1890, 1891, *January*, 1891, 1892.

Date.	Bronchitis.	Pneumonia.	Date.	Bronchitis.	Pneumonia.	Date.	Bronchitis.	Pneumonia.
1889. Week ending Dec. 7,	..	9	1890. Week ending Dec. 6,	11	11	1891. Week ending Dec. 5,	14	26
" 14,	..	13	" 13,	11	26	" 12,	14	41
" 21,	..	17	" 20,	11	22	" 19,	15	31
" 28,	..	36	" 27,	10	24	" 26,	27	57
1890. Week ending Jan. 4,	..	89	1891. Week ending Jan. 3,	16	27	1892. Week ending Jan. 2,	30	85
" 11,	..	117	" 10,	10	38	" 9,	38	79
" 18,	..	93	" 17,	12	31	" 16,	31	74
" 25,	..	38	" 24,	6	25	" 23,	24	55
			" 31,	18	29	" 30,	16	39

Table III *bis.*

Total Tabulated Cases of Pneumonia at the Boston City Hospital and Massachusetts General Hospital.

	City Hospital.	Mass. Hosp.	Total.
Dec. 10, 1890, to Feb. 1, 1891 . .	36	14	50
Deaths	9	4	13
Mortality	25%	28+%	26%
Dec. 10, 1891, to Feb. 1, 1892 . .	87	20	107
Deaths	34	6	40
Mortality	39%%	30%	37%

Looking from another point of view at the returns to the city authorities of the deaths from pneumonia and bronchitis, I find the following: the average of deaths from pneumonia for the month of December in the five years 1884–88, was 104; in December, 1889, the deaths were 160; in December, 1890, 100; and in December, 1891, 223: the average for the five Januarys, 1885–89, was 118.6; in January, 1890, the number was 353; in January, 1891, it was 139; and in January, 1892, 240.

In the same way for bronchitis, the average of five Decembers was 54.8; the number for December, 1889, was only 43; for December, 1890, 49; and for December, 1891, 90. For the five Januarys the average was 53.2; for January, 1890, the number was 89; for January, 1891, 48; and for January, 1892, 109.

Before tabulating the total cases of pneumonia (meaning thereby croupous pneumonia) entered at the two hospitals between December 10 and February 1, 1890–91, 1891–92, I was curious to see the proportion of cases in each. I got the following result shown in Table III *bis.* which includes both croupous and catarrhal or broncho-pneumonias — the number of the latter being small — ten in all for the two years, at both hospitals.

The great increase in the number of cases, as well as in the number and percentage of deaths this winter, comes largely, therefore, from the City Hospital; and there also the proportion of males was larger — sixty-five males to thirty-two females, while at the Massachusetts there were twelve males to eight females.

TABLE IV.

Analysis of all Cases of Lobar Pneumonia admitted to the Boston City and Massachusetts General Hospitals, from Dec. 10, 1889, *to Feb.* 1, 1890, *with Reference to the Precedence of Grippe Symptoms, Localization, Complications, and Termination — Lysis or Crisis, or Death.*

	Preceded by grippe symptoms.	Not preceded by grippe symptoms.	Doubtful.	No history.	Total.
Total, number	55	36	26	10	127
" per cent.	43	29	20	8	100
Single lobe, number	39	17	14	6	76
" " per cent.	71	47	54	60	60
Unilateral, more than one lobe, number.	6	11	5	4	26
per cent.	11	31	19	40	20
Double, number	10	8	7	..	25
" per cent.	18	22	27	..	20
Complicated, number	13	11	14	5	43
" per cent.	24	31	53	50	34
Recovery by crisis, number	15	7	3	..	25
" " per cent.	44	44	21	..	36
Recovery by lysis, number	19	9	11	5	44
" " per cent.	56	56	79	100	64
Death, number	11	14	8	5	38
" per cent.	20	39	30	50	30

December 10, 1891, *to February* 1, 1892.

	Preceded by grippe symptoms.	Not preceded by grippe symptoms.	Doubtful.	No history.	Total.
Total, number	28	61	1	11	101
" per cent.	27	60	1	11	100
Single lobe, number	22	48	1	9	80
" " per cent.	80	80	100	80	80
Unilateral, more than one lobe, number.	2	8	..	1	11
per cent.	7	12	..	10	10
Double, number	4	5	..	1	10
" per cent.	14	8	..	10	10
Complicated, number	6	20	..	6	32
" per cent.	21	33	..	50	33
Death, number	11	21	1	6	39
" per cent.	40	34	100	50	38

Table IV gives an analysis of the cases of pneumonia in the two hospitals — the extent of the process, the complications and the mortality — with reference to influenza antecedents as gathered from the records.

I have not attempted to include recoveries by crisis and lysis, partly because the dividing line is very uncertain, and partly because the charts in many cases had not been entered and were not easily accessible. The results of this analysis differ materially in several important particulars — and especially as to the percentage of pneumonias preceded by influenza-symptoms — from those of a similar analysis of hospital cases in the previous epidemic published in Dr. F. C. Shattuck's paper.

The difference is probably due more to a difference of record-keeping or record-interpretation than to so great an actual difference in facts. Of the total pneumonias only 27 per cent. are recorded as preceded by influenza; 60 per cent. were not entered as preceded by such symptoms, and one per cent. doubtful. This compares with 43 per cent. preceded by such symptoms in the previous epidemic, and only 49 per cent. not preceded or doubtful.

The percentage of complications was about the same for the two epidemics, and the only other marked difference appears in the mortality which has already been alluded to.

TABLE V.

Lobar Pneumonia in Boston City Hospital and Massachusetts General Hospital, December 10, 1889, *to January* 31, 1890.

Age.	Cases.	Male.	Female.	Fatal.
10 and under	2	2	0	0
10 to 20	14	9	5	2 (14% +)
20 to 30	41	28	13	7 (17% +)
30 to 40	31	25	6	10 (32% +)
40 to 50	16	12	4	8 (50%)
50 to 60	13	9	4	7 (54% −)
60 to 70	1	1	0	1
70 to 80	1	0	1	0
Unknown	8	8	0	3
Total	127	94 (74%)	33 (26%)	38 (30%)

December 10, 1891, *to February* 1, 1892.

Age.	Cases.	Male.	Female.	Fatal.
10 and under	1	1	0	0
10 to 20	5	5	0	0
20 to 40	53	36	17	18 (34%)
40 to 60	23	17	6	9 (39% +)
60 +	9	5	4	5 (55½%)
Unknown	9	7	3	7 (80% −)
Total	101	71	30	39 (38% +)

The upper half of this table shows the age and sex of 127 hospital cases. Nearly 75% were males, and the mortality increased with each decade up to the fifth, remaining stationary thence to the seventh.

Table V gives the age and sex of the 101 hospital cases. The percentage of males was rather less than in the previous epidemic, 70+% compared to 74+%, and of females 30% compared to 26%. There were no deaths under twenty years of age, and only five cases, all of which were in males. The mortality increased pretty constantly in the next three periods of twenty years.

TABLE VI.

Fatal Pneumonia and Broncho-pneumonia reported at the Boston City Hall. Comparison between December, 1889, *and January*, 1890, *and the average of the same months during the previous five years, with reference to age.*

Age.	Avge. deaths, Dec., 1884–8.	Deaths, Dec., 1889.	Per ct. of increase.	Avge. deaths, Jan., 1885–9.	Deaths, Jan., 1890.	Per ct. of increase.
10 and under	36.2	37	..	36	56	55
10 to 20	2.6	3	..	4	14	250
20 to 30	8	26	225	8.8	43	388
30 to 40	10	22	120	17	54	218
40 to 50	11.8	28	137	15.6	57	265
50 to 60	11.4	18	58	11.8	50	324
60 to 70	11.2	15	34	13	38	192
70 to 80	9	8	..	10.2	28	175
80 to 90	3.8	3	..	2.2	13	500

Comparison between December, 1891, *and January*, 1892.

Age.	Deaths, Dec., 1891.	Per cent. of increase.	Deaths, Jan., 1892.	Per cent. of increase.
10 and under	60	65	44	22
10 to 20	2	..	0	..
20 to 30	13	62½	22	150
30 to 40	23	130	29	71
40 to 50	22	86	32	105
50 to 60	21	84	26	120
60 to 70	32	186	41	215
70 to 80	28	211	31	204
80 to 90	22	479	14	536
90 to 100	1	..	1	..

Table VI analyzes the deaths from pneumonia and broncho-pneumonia, as reported to the city authorities, with reference to age, and compares the deaths in December and January, 1891–92, with the same months in 1889–90, and the average of the previous five years.

There was an increase in deaths over the average deaths in December for every decade except one (10–20) up to 100, this increase culminating in the decade between 80 and 90 with 479 per cent. In December, 1889, there was no increase under twenty or over seventy, at other ages there was a marked increase over the average, but a less increase for every decade except two, 20–30 and 40–50, than in December, 1891.

In January, 1892, there was a large increase over the average for every decade except one, 10–20 — when there were no deaths — culminating in an increase of 536 per cent. in the decade 80–90, which compares with 500 per cent. increase for the same decade January, 1890; for the earlier decades the increase was smaller for January, 1892, than for January, 1890, but it was larger for the very old, that is the three decades 60–70, 70–80, and 80–90.

The very small number of deaths from pneumonia and bronchitis between the ages of 10 and 20 years in the city returns for any year is very striking.

The city returns, it may be remarked incidentally, show five deaths from bronchitis and pneumonia between the ages of ninety and one hundred in December, 1890–91, and January, 1891–92.

Table VII.

Fatal Bronchitis reported at the Boston City Hall. Comparison between December, 1889, *and January,* 1890, *and the average of the same months during the five previous years, with reference to age.*

Age.	Average deaths, Dec., 1884–8.	Deaths, Dec., 1889.	Average deaths, Jan., 1885–9.	Deaths, Jan., 1890.	Per cent. of increase.
10 and under . .	37.2	23	36.8	29	. . .
10 to 20	0.6	1	0.4	3	650
20 to 30	..	..	0.2	2	900
30 to 40	1	3	1.4	3	114
40 to 50	1.4	..	1.4	5	256
50 to 60	4.8	4	2.4	8	233
60 to 70	6	5	3.4	13	282
70 to 80	2.4	4	5	13	160
80 to 90	1.4	3	2.6	13	400

Comparison between December, 1891, *and January,* 1892.

Age.	Deaths, Dec., 1891.	Per cent. of increase.	Deaths, Jan., 1892.	Per cent. of increase.
10 and under	42	13	0	..
10 to 20	1	83	0	..
20 to 30	2	..	3	1,400
30 to 40	1	0	6	329
40 to 50	6	329	4	186
50 to 60	9	87½	9	275
60 to 70	12	100	13	282
70 to 80	15	525	17	240
80 to 90	3	114	14	438
90 to 100	..	..	1	..

Table VII analyses bronchitis reported to the city, as Table VI did pneumonia, with reference to age. Deaths from bronchitis in December under ten years were increased slightly, in January there were none under twenty years; in December and January, 1889, 1890, under ten years they were less than the average, for all the other decades, except one, for both months there was irregular but considerable increase. The numbers, however, in all three years were too small to be of much value.

Having compared my figures for the present epidemic and the one free year with those published in my brother's paper for the previous epidemic and for the five free years, we will see how the conclusions to which my figures lead, compare with those to which his figures lead him.

He says: "Conclusions can be drawn, but they do not seem to me of such a nature as to throw any really new light on influenza pneumonia." With this statement I fear I must agree. The conclusions are as follows:

"(1) Pneumonia was unusually prevalent in Boston during the height of the influenza epidemic, about the middle third of the visitation." My figures indicate that it was unusually prevalent this winter, too, but reached its culmination a week earlier.

"(2) The statistics of the Pacific Mills indicate that less than a half per cent. of those severely attacked by influenza acquired pneumonia.

"(3) Broncho-pneumonia was rare in the hospitals." I find only six cases in both hospitals this winter.

"(4) The pneumonia mortality rate was probably not increased, perhaps diminished, as compared with that of the five previous years." For this epidemic it was increased eight per cent. over the previous epidemic and five and one-half per cent. as compared with the average of six free years.

"(5) The number of cases of pneumonia not preceded by grippe symptoms was about the same as the number of pneumonias in an average year." The number was apparently greater than the number in an average year.

"(6) Pneumonia followed grippe in so large a number of cases as to show some sort of connection between the affections." In a sufficiently large number of cases.

"(7) In sixty per cent. of the cases a single lobe only was involved." In eighty per cent.

"(8) Two-thirds of the cases terminated by lysis."

"(9) Pneumonia was three times as frequent in males as in females, and the mortality rate increased with each decade." Two and one-third times.

"(10) The most striking increase in the urban deaths from pneumonia was, on the whole, between the ages of twenty and sixty and eighty and ninety. The increase under ten was slight." The increase in the urban deaths from pneumonia was greatest between the ages of sixty and ninety; it was striking, but evenly distributed between twenty and sixty; under twenty it was slight.

"(11) The gross appearances in nine cases examined after death were not specially noteworthy." Autopsies not considered.

Dr. Pepper's estimate from returns made to him by a large number (272) of practitioners in Philadelphia, of the relative proportion of croupous and catarrhal pneumonias, differs greatly from the results afforded by our hospitals. These returns indicate that the catarrhal were almost twice as frequent as the croupous. He further states that Dr. DaCosta and he saw about an equal number of catarrhal and croupous pneumonias in consultation. He notes as a peculiarity of the pneumonias during the epidemic season 1889–90 the large preponderance of cases affecting the right lung, which he estimates was affected twice as often as the left. Of 101 hospital cases in Boston from December 10th to February 1st, this winter, the right lung alone was affected in 57½%, the left alone in 32+%; but I find that of 44 cases for the same period last winter, when there was no epidemic of influenza, in 53% the right alone was affected, the left alone in 33%. Osler reports that in 100 pneumonia autopsies at the Montreal

General Hospital, not made during an influenza epidemic, the right lung was affected in 51%, the left in 32% and both in 17%. Of last winter's hospital cases in Boston 14% were double, and this winter's only 10%.

Table VIII.

Amount of Lung involved and region affected.	Dec. 10, 1890, to Feb. 1, 1891.						Dec. 10, 1891, to Feb. 1, 1892.						Total both years.				
	Total Cases.	Per cent.	Apex.	Delirium	Alcoholic Habits.	Mortality.	Total Cases.	Per cent.	Apex.	Delirium.	Alcoholic Habits.	Mortality.	Total Cases.	Apex.	Delirium.	Alcoholic Habits.	Mortality.
Right lung alone . .	23	53	5	8	12	6	58	57½	16	11	11	23	81	21	19	23	29
Left lung alone . .	15	33	3	4	8	4	33	32½	2	9	5	10	48	5	13	13	14
Double	6	14	2	5	3	3	10	10	0	4	2	6	16	2	9	5	9
Whole of one lung .	2	..	..	2	2	1	11	11	..	6	2	7	13	..	8	4	8
Apex	10	23	..	6	5	5	18	17	..	5	6	9	28	..	11	11	14
Broncho-pneumonia,	4	..	..	0	1	0	6	..	..	0	0	2	10	..	0	1	2

Dec. 10, 1890, to Feb. 1, 1891, 44 cases. Dec. 10, 1891, to Feb. 1, 1892, 101 cases. Both years, 147 cases, including two of doubtful location.

Though not coming strictly under my subject, curiosity and a desire to make use of my figures led me to look into the question of apex pneumonia,— especially as I have for some time been sceptical of the current statement that it is more apt to be accompanied by delirium. In 18 apex pneumonias (17% of the total) of the influenza period, there were 9 deaths, or 50%; but 6, or 33%, were of markedly alcoholic habits, and only 5, or 28%, exhibited delirium. One case, notwithstanding the apex and the alcohol, was not delirious and got well. One case of double apex died two days after entering the hospital, this is not included. Last winter in 10 apex cases (23% of the total), five died, five had alcoholic habits, and six were delirious; that is, one only was delirious without being alcoholic.

In regard to his returns for the 1889–90 epidemic, Pepper says: "There was also an unusual proportion of cases of apex pneumonia where the entire upper lobe was completely consolidated without implication of any other part. As usual in such cases, there seemed to be a special predominance of cerebral symptoms."

Among the complications were inflammations of the ear of various degrees of severity, erysipelas, rheumatism, tuberculosis, empyema, cardiac lesions and pericarditis, melancholia, acute mania, meningitis, alcoholism, cerebral embolism, erythema, etc.

One young woman entered my service at the City Hospital with undoubted influenza. She developed an erythema of the face, then a pneumonia; she then miscarried at the fifth month; she then developed diphtheria; and she subsequently recovered her health perfectly.

I had intended to say something about the vague symptoms and ill-defined physical signs observed in some cases of pneumonia during the influenza, but I have already taken up too much of your time.

I hope some of you will favor us with your personal experiences as practitioners; some I know have seen comparatively little pneumonia this winter and others more than usual.

To sum up briefly, I should incline to the opinion that pneumonia was a sequel rather than a concomitant or complication of influenza. Though I acknowledge that the tables presented do not offer alone sufficient support for this view.

Pepper takes this position in the following words: "The vast majority of pneumonias occurred as a sequel, rather than a complication, and they were clearly traceable to exposure to damp and raw weather while the patient had a relaxed system and while slight pyrexia persisted after the subsidence of the more marked symptoms of his influenza. Experience furnishes many instances of this fact."

Osler, in his "Practice of Medicine," just published, speaks of pneumonia as a *complication*, and the most serious and fatal one of influenza; but at the same time states that there is, as far as his observation goes, nothing special or peculiar in the character of the pneumonia.

Through the courtesy of Drs. Mason and Folsom at the City Hospital and of Drs. F. C. Shattuck and W. W. Gannett at the Massachusetts General Hospital, I have had access to their cases; and I have to thank Dr. A. C. Jelly and my house-officers, Drs. Dudley and Towle and Mr. Edson, for assistance in abstracting the records, and the Boston Board of Health for figures furnished. My use of Dr. F. C. Shattuck's tables speaks for itself. As they were originally published elsewhere, their reproduction here commends itself additionally.

◆

A CASE OF DOUBLE MOVABLE KIDNEY.[1]

BY T. M. ROTCH, M.D.,
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So far as I can learn, the following case of double movable kidney is the first which has been diagnosticated during life, and verified by operation, in America. It is therefore well worthy of especial record.

A. B., twenty-seven years of age, unmarried, entered the City Hospital on May 11, 1891. She had had no children nor miscarriages, and no diseases. The catamenia were regular but scanty. She had been subject to headaches for the last ten years, and during the last three years they had increased in severity and frequency, especially lately. The pain was described as throbbing, and was localized in the frontal and parietal regions. It was sometimes accompanied by nausea and vomiting, which was not believed by the patient to be dependent upon food. An examination of the eyes was negative.

In December, 1890, she says she felt something "shaking in her abdomen when she walked"; and near the end of the same month she experienced a sensation as if something slipped forward into the left inguinal region when she stooped over. In the latter part of January she fell violently upon the ice, in a sitting posture. At this time she noticed a resistant mass in the left inguinal region, and shortly afterward a similar one in the right. She paid but little attention to them, however, until three weeks later, when they became painful. She said they had always been movable. The pain was influenced by position and motion. It was absent when she lay quietly in bed, but returned when she moved. It was most intense when she sat down, and was referred to both inguinal regions, coccyx and back. Walking was more painful than standing. Stooping increased the pain and caused a sensation as if "something were being squeezed." Reaching upwards with her right hand, caused pain in the left side; a similar movement of the left hand caused none. Coughing and laughing were painful. In addition, she complained of a feeling of weight in the abdomen.

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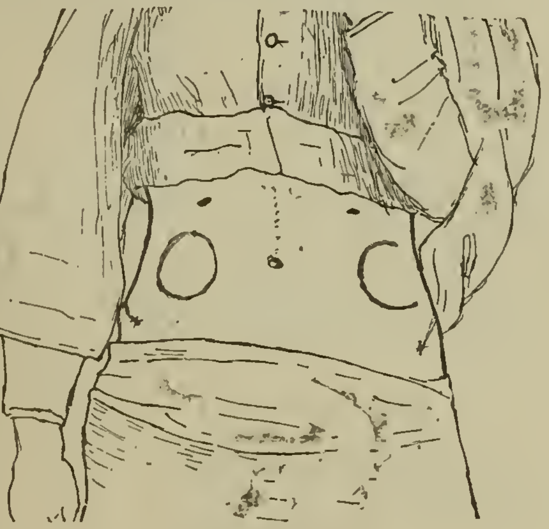
[1] Read before the Boston Society for Medical Improvement, February 22, 1892.

Three or four months ago she was troubled with frequent micturition, accompanied by some pain, and lasting about a month. She has had occasional attacks of palpitation, and dyspnœa on exertion, and dizziness. The bowels were constipated. The patient was of a nervous temperament. Temperature 98.8°, pulse 80, respiration 24. An examination of the urine, on May 12th, showed: color normal, acid reaction, specific gravity 1027, clear, with a floculent sediment, no albumen. Examination of the abdomen revealed in the right lumbar region, a tumor which was firm, oval in shape and apparently three inches by two in size, moderately tender on pressure, easily movable from the crest of right ilium, upwards under the ribs, in the axillary line; from which position it was forced downwards by coughing or deep inspiration. In the left lumbar region a tumor was felt, similar in every respect except that it was larger. Both tumors were more plainly felt when patient lay on her face or side and in the half-prone position. Percussion over the back in both lumbar regions gave resonance when the patient lay on her face.


Before Operation.

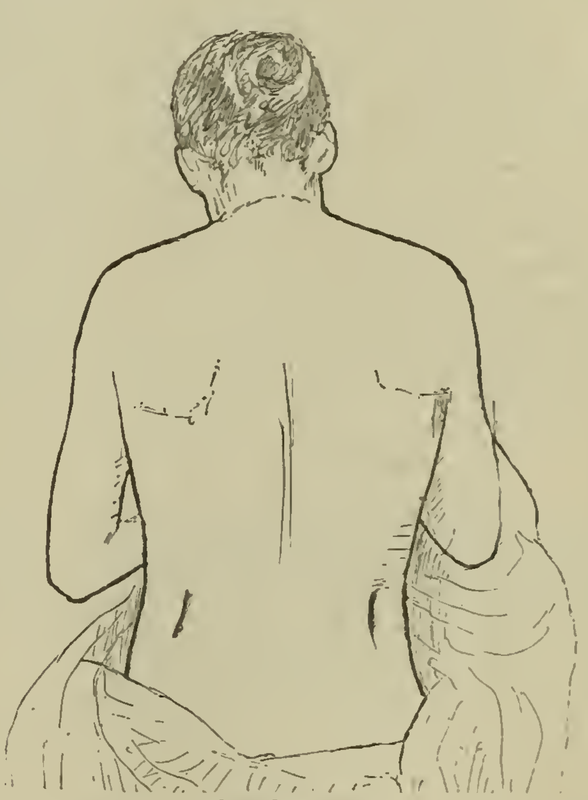
The patient was kept under observation in the ward for some weeks; at times she was confined to the bed, and at others was allowed to get up and go about, doing a little light work. Her general health improved but her symptoms continued.

In addition to other symptoms, the patient complained of much pain in the region of the coccyx, on sitting. An examination showed that it was deflected to one side, and she was transferred to the surgical side of the hospital for operation. This was performed by Dr. Gay on July 7th. The coccyx was removed and the patient made a good recovery. This was followed by a diminution of the pain caused by sitting. Later, various kinds of apparatus were tried to retain the kidneys in position but without success, and it was finally decided to perform the operation of nephrorrhaphy on both kidneys.

The first operation was performed by Dr. Burrell on September 22d. An incision was made in the lumbar region on the left side, at the outer border of, and parallel with, the extensor muscles of the spine; the dissection was carried down to the kidney and silk sutures were passed through the capsule of the kidney and the quadratus lumborum muscle binding them firmly together. The wound was thoroughly irrigated, packed lightly with gauze and dressed antiseptically. The patient made a good recovery.

On November 7th the second operation was performed by Dr. Bradford. An incision four inches long was made in the lumbar region, in the back, over the right kidney; extending from the lower ribs, downwards, at a distance of about six inches from the vertebral spines. The dissection was carried down to the kidney and three sutures were taken through the capsule, at the upper, middle and lower parts; these sutures were carried through the muscular substance to the outer edge of the wound and an antiseptic dressing was applied after thoroughly irrigating.

The patient was discharged December 28th in good general condition and with the wounds healed.


After Operation.

The urine chart kept from September 7th until her discharge from the hospital, showed an average daily amount of about one-half the normal quantity and at times even less.

On February 6th the patient re-entered the hospital on account of a slight discharge occurring from the right side. The examination showed one or two granulating points in the right cicatrix, into one of which a probe entered about one and one-half inches. An incision was made and a silk suture was found at the bottom and removed. A slight swelling on the left cicatrix was also opened, and a silk suture was removed.

On February 22d the patient was discharged with one side entirely healed and the other almost so.

I examined the patient on February 21st and found both kidneys in position. She complained of various nervous aches and pains, but the nausea, sense of weight in the abdomen, and headaches were relieved.

I have prepared a reference list of the cases which have been operated upon, and which is as nearly complete as the literature on the subject can make it. Dr. Landau of Berlin, and Sulzer of Basel, have written excellent papers on this subject, and I am indebted to their tables for many of the cases in my list.

One thousand three hundred and thirty-two cases of movable kidney have been collected; of these 107 occurred in males and 702 in females, that is, 86 per cent. were in females. Six hundred and sixty-eight were of the right kidney, 106 of the left kidney, and 93 of both kidneys, that is, about 77 per cent. were of the right kidney alone. This preponderance of the right over the left in lists of movable kidneys seems to be confined to females, for out of 14 cases occurring in the male sex, where the special kidney was mentioned, the right kidney was affected in six, and the left in eight. A similar list among females showed that in 80 the right was affected, in 15 both, but in only 10 the left alone. Seventy-two cases of movable kidney were first recognized, or the diagnosis confirmed, on the post-mortem table.

Although movable kidney is sometimes congenital, it is not often recognized in children. Phillips reports a doubtful case in a boy of nine years. Heirschsprung reports another case in a child, and Durham mentions a case of misplacement of the left kidney in a fœtus. Sulzer has collected 37 nephrectomies for movable kidney with 10 deaths. His table of nephrorrhaphies for movable kidney is very complete, and contains 80 cases with only two deaths; 45 of these cases were entirely cured; seven were improved. In nine there was no improvement in the symptoms notwithstanding the success of the operation, and in 13 the operation did not succeed in permanently fixing the kidney. Nephrorrhaphy of both kidneys has been performed by Hahn and also by Küster (quoted by Lindner.)

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THE ESSENTIALS TO SUCCESS IN REPAIR OF THE PELVIC FLOOR IN PRIMARY AND SECONDARY OPERATIONS.[1]

BY EDWARD REYNOLDS, M.D.

In this brief paper, I do not propose to touch at all upon the anatomical aspects of laceration of the perineum, except in so far as is incidental and necessary to a proper consideration of the conditions which determine success in its repair; but mean to confine myself mainly to certain aspects of this problem which, though now almost universally accepted by specialists, are as yet insufficiently realized by at least a large proportion of general practitioners. I wish first to enumerate the characteristics which are generally admitted to be essential to a successful suture, and which are common to all successful methods.

It was for a long time believed that laceration of the vaginal outlet was a tear of that supposed supporting structure, the perineal body, in the antero-posterior median plane of the body. It is only within the last few years that another and more satisfactory description has been given.

In 1883, Dr. Emmett, the father of perineorrhaphy, first announced the belief, now generally held, that for mechanical purposes the perineal body is a myth; and that the true reason for the loss of support which follows these tears, is to be found in their destruction of the integrity of the muscles and fascia of the pelvic diaphragm.

In connection with his publication of a belief in this new pathology, he described a new method of introducing the sutures; which was essentially an abandonment of the old idea that the separated tissues were to be brought together from side to side, and an acceptance of the principle that the essential characteristic of all successful methods is the approximation of the torn surfaces from above downward, and from without inward to the median line.

In a recent address, he has stated that the success of his earlier operations was in fact due to their incidental possession of the longitudinal traction, which is now admitted to be the main object of the operation, and he, in common with other gynecologists, now holds that the approximation of the tear from side to side, which is undoubtedly secured by any method of suture, is an incidental and far less necessary matter.

As the tears undoubtedly present themselves under various forms, I wish at this point to exhibit a series of diagrams which were drawn from life for me by one of the house-officers of the Boston Lying-in Hospital, and published in a paper upon the anatomy of the lacerated perineum, which I wrote for the last meeting of the American Gynecological Association.[2]

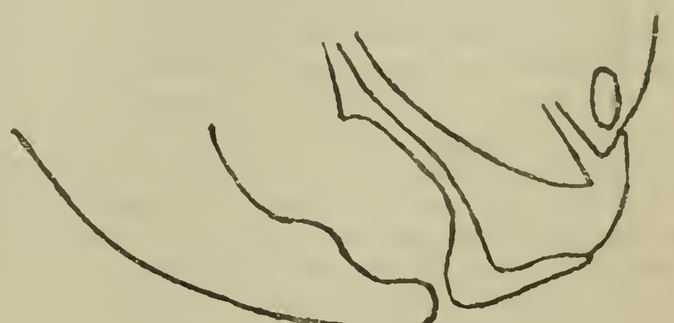

Fig. 1.

These figures illustrate an attempt to classify all the forms of tear which are observed in practice, as modifications of one type form, which is illustrated in the first figure. The paper for which these diagrams were originally made was an attempt to present a theoretical and mechanical proof for the necessity of approximating the tissues from above downward; but for practical purposes, a better demonstration is to be found by a consideration of the results of proper and improper methods of suture. When the sutures are inserted in such a way as to approximate the tissues from side to side, it is a matter of common observation that the result produced is substantially that which I have endeavored to represent by Figure 1, in which the line of union is narrow, and its external surface is almost at right angles to the lower portion of the posterior wall of the vagina. The anterior and posterior vaginal walls are but partially supported by such a result; the formation of the rectocele and cystocele goes on; the skin of the perineum so formed soon stretches and yields, and nothing has been accomplished by the operation.

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[1] Read before the Boston Society for Medical Improvement, February 22, 1892.

[2] Trans. American Gynecological Association, 1891, vol. xvi, p. 308.

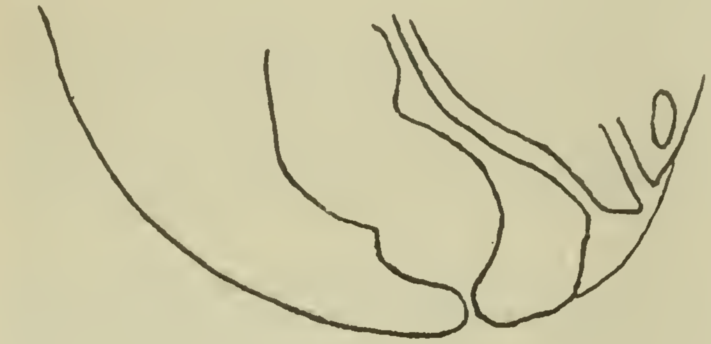

Fig. 2.

When, upon the other hand, the tissues are systematically drawn together from above downward and from below upward, the form of result in well managed cases is that which is diagrammatically represented in Figure 2. The resulting surface of union is broad and deep; the external surface slopes upward and forward to form a genital furrow which is closely similar in shape to that of the normal or unlacerated vulva; the posterior vaginal wall is thickened, and its anterior surface forced forward, until it is brought in contact with the anterior wall, to which it furnishes a firm support.

Such a union results almost invariably in the disappearance of sub-involution of the vagina and the arrest of the prolapse of the vaginal walls. By it the pelvic fasciæ are again put upon the stretch, and converted into a firm occluding curtain for the support of the superimposed viscera; so that it may be said that the essential criterion by which the result of a perineorrhaphy should be judged, is that the fourchette of the new perineum should not only be sufficently close to the lower edge of the symphysis, but should be upon approximately the same level with it, and that the sigmoid curve of the vagina should be fully restored.

If this result is attained, the precise method by which the sutures were introduced is a matter of unimportance; and the choice between the many methods which afford the essential requisite of drawing the tissues together from above downward, is one which depends upon the rapidity and ease with which the stitches can be introduced, rather than upon any other quality. This choice must always depend, to a certain extent, upon the idiosyncrasies of the individual operator; but it must also be regulated, both by the peculiarities of the individual case, and by the time at which the operation is undertaken.

The distorted condition of the tissues immediately after labor renders the more detailed and exact methods difficult of application; and the fact that the tissues at this time have not been distended and altered by the production of rectoceles or cystoceles, renders the adoption of such exact methods unnecessary; while, upon the other hand, the rough and ready approximation which yields excellent results in primary operations, would be entirely insufficient for a successful secondary repair.

For these reasons, I am inclined to advocate a considerable difference in the methods which should be pursued in primary and secondary operations. After a considerable experience in the suture of the perineum immediately after labor by both methods, I have been led to believe that the attempt to approximate the whole surface of the tear with the accuracy which is necessary at a later period, is apt to lead only to distorted results; that is, to the suturing together of parts which were never separated from each other; and that the result is likely to be better if the tissues as a whole are drawn into moderately close approximation, and their exact arrangement against each other left to nature, and thus trusted to the forces of retraction and re-arrangement to which their whole substance is subjected during the few hours which follow delivery. It is, moreover, important that the method selected for use immediately after delivery should be one which permits the operator to act with a minimum of assistance.

The method which I myself pursue, and by which I am accustomed to attain, I think, upon the whole, better results than I formerly secured by more elaborate procedures, is as follows: A large, fully curved needle is threaded with silk or catgut, the second finger of the left hand is introduced into the rectum, and the forefinger of the same hand into the vagina. For a long time I employed the old-fashioned, large, fully curved surgical needle of our fathers, but of late have learned to prefer a delicate Hanks-Peaslee needle, which I will pass about. The needle is then made to penetrate the skin at a point well out towards the left side of the patient's perineum, at least a third of an inch from the edge of the tear, and about opposite the antero-posterior edge of the anus; it is carried upwards and inwards with a wide sweep, entirely buried in the tissues, under the guidance of the first and second fingers of the left hand, until it crosses the median line at the point where the thicker perineal body is beginning to merge in the thin recto-vaginal septum, and is brought downward with the same wide sweep, to emerge exactly opposite to its point of entrance.

A second suture is introduced in the same manner, at the same distance from the lateral edge of the tear, and at a point which is, antero-posteriorly, half-way between the anus and the fourchette; and is carried upward to about the same point in the recto-vaginal septum. A third is introduced in the same manner, and with the same width and height, at a point about opposite, or, if anything, anterior to the situation of the fourchette.

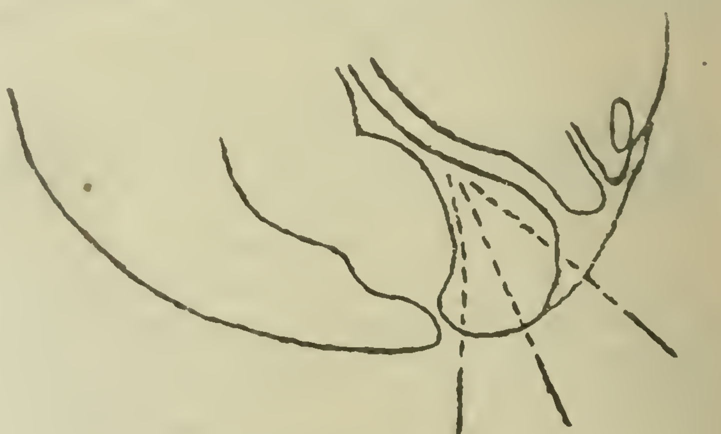

Fig. 3.

The relation of these three sutures to the tissues of the outlet. is shown diagrammatically in median section in Figure 3. When they are drawn together from side to side with moderate firmness, the edges of the tear in the median line are rolled inwards, and disappear upwards out of sight; and on examination with the finger, it will be found that the entroitus is of proper narrowness, and the sigmoid curve of the vagina fully restored.

In spite of the apparent roughness of the approximation, I have been accustomed to see it followed in the primary operation by most excellent, and even artistic-looking, results. In exceptional cases, in which the lateral prolongations of the typical Y-shaped tear extend so far up the vagina as to be necessarily crossed by these stitches, it is well to bring their ends together by a few running sutures, such as are to be described in the secondary operation; but my experience with a number of extremely prolonged tears, in which the approximation was necessarily rendered imperfect by lack of assistance, and with one extraordinarily long unsutured tear which I had the pleasure of seeing with Dr. E. J. Forster in the gynecological wards of the Boston City Hospital, to which she had been referred for the secondary operation, leads me to believe that the upper portion of these wings of the tear are likely to heal equally well without suture, provided that the lower portion is well repaired — a phenomenon which I may say, in passing, I believe can be readily explained upon mechanical and anatomical grounds.

For the secondary operation, there are three methods which are so generally applicable, and so readily and easily performed, as to be worthy of special mention.

First of these is Mr. Tate's flap-splitting operation. This possesses the important advantage that, when it is applied to late and difficult cases, it sacrifices no tissue whatsoever, and secondly, does not increase the difficulties of a second operation, should the first prove unsuccessful. By it the tissues which have been separated from each other, are brought much more nearly into apposition with each other than would at first sight be considered possible. It is valuable for cases in which the amount of tissue at the disposal of the operator is extremely small, and in which it is necessary to utilize cicatricial tissue, the capacity of which for firm union cannot be wholly trusted. In the majority of cases, it has seemed to me less useful than the methods in which the freshened surface is supplied by denudation.

The purse-string method has been highly recommended by many eminent and experienced operators. When this is adopted, an approximately oval surface is denuded, with its long axis transverse to the vagina, and the freshened surface, when made, is encircled by one or more sutures, which follow its contour, and which when drawn together, pucker up its large circular edge to a single point. I have had no experience with this method in perineal plastics, and can offer no opinion of value upon its merits. Upon theoretical grounds, it would seem to sacrifice accuracy to rapidity; yet I have no doubt, upon theoretical grounds again, that it would furnish, at least, fairly good support; and, as was said before, it has been highly recommended.

The third method to which I propose to refer, is that of Dr. Emmett, which is, however, modified by almost every operator, to suit his individual convenience and peculiarities.

For the proper performance of this operation, it is essential that the denuded area should be of exactly the right extent; and it will, perhaps, be well for me to give here a repetition of Dr. Emmett's directions for the determination of this point.

A tenaculum should be introduced into the last caruncula upon each side of the vulva, and these should be drawn upward, forward, and to the median line, by an assistant, while the operator engages another tenaculum in the median line of the posterior wall, at successively higher and higher points, until he reaches the highest point which can be drawn sufficiently far downward to meet the carunculæ, when these are drawn as far up as is possible without leaving the median line. Each of these three points should then be marked by a snip from the scissors, when by bringing together successively each caruncula and the marked point upon the posterior wall, two lateral folds or troughs will be formed, which, when their bottoms are depressed by a probe, will mark the limits of the lateral wings of the denuded surface.

The essential points in the insertion of the stitches, are that the bottom of each of the coaptation sutures should be much nearer to the median line than its points of insertion and emergence: that they should be tied in successive order from without inwards towards the median line, and that the purse-string or supporting suture, which is introduced after the others have been tied, should be passed with a wide sweep, and should pass transversely above the new-formed perineal body.

The modification of this suture which I myself employ in secondary operations, and which I believe to be as accurate as any other, and more rapid than most, is as follows:

The coaptation of the horns of the crescent is secured by a running suture, beginning at the end of the horn, and working inward; but the needle, with the free end of the thread, is carried through the preceding bight after each emergence from the tissues, in order to secure the same accuracy of adaptation which is obtained by uninterrupted sutures. I then insert two purse-string sutures, which are exactly similar to the first and third sutures which I use in the primary operation, with the single exception that they are introduced close to the edge of the tear, and then swept outward as they ascend, in order to minimize their cutting effect upon the external skin; and this I think permissible because the infolding of the median line has here been secured by the internal sutures. In primary operations, I habitually employ silk sutures, though I have uniformly obtained equally good results with catgut. In the secondary operations, I am accustomed to employ catgut for the internal sutures, and stout silver wire for the external or purse-string stitches, using the latter material for these two last stitches, because I wish to feel certain that these, at least, will preserve their integrity until after the bowels have moved; and also because, if they become relaxed by the subsidence of swelling, or by cutting through the tissues, I am accustomed to tighten them up immediately before the bowels move for the first time, and thus prevent the possibility of direct strain upon the newly-united tissues during the performance of this function.

Whichever method may be chosen, I am confident that when the profession as a whole has been sufficiently impressed with the idea that the restoration of the sigmoid curve of the vagina, and of the normal upward inclination of the genital furrow, by traction upon the tissues from above downward, and from below upward, is the only thing essential to success in the restoration of the lacerated pelvic floor, the number of improper and useless operations, which are still constantly brought under the observation of every one interested in gynecology, will be greatly decreased, if not altogether done away with.

Clinical Department.

A CASE OF CEREBELLAR TUMOR, WITH AUTOPSY.

BY MORTON PRINCE, M.D.,
Physician for Nervous Diseases, Boston City Hospital.

The following case is here put on record, as it is desirable that all such cases should be recorded as contributions to symptomatology. It also presents one or two practical points bearing on the question of operation in cases of cerebellar tumor which are of interest.

When first seen by me, a little over a year from the beginning of the symptoms, the patient complained principally of intense headache, and of difficulty in walking, owing to a tendency to tumble. These were the salient symptoms. When first taken ill he suffered from nausea and vomiting, but had had neither for a year. The staggering was characteristic, I thought, of cerebellar ataxia. While there was no paralysis, he walked with great difficulty and caution. It seemed as if he tended to tumble to the left at this time, but this tendency could not be said to be very pronounced (the tumor was in the right lobe).

The headache which came on in paroxysms and was very severe, was located sometimes in the occipital region, sometimes in the frontal and sometimes "all over the head." The pain was described as terrible and accompanied by a bursting feeling.

He could with difficulty stand or walk without support. Although he said he felt generally weak his muscular strength was good.

Examination of the eyes by Dr. Wadsworth showed "a little indistinctness of outline of inner two-thirds of the disks, but nothing which may not be physiological; in other respects normal."

About ten months previously (December 18, 1890) the patient had entered the City Hospital. He stated, and the records substantiate his statement, that his condition at that time was about the same in kind as it was when he was first seen by me, but less severe in degree. His symptoms were vertigo, intense headache, ataxia, increased patellar and elbow reflexes. The records state that he was easily excited to tears, and could not stand with his feet together and eyes closed; that he fell to the *right*. The headaches, which were intense, were controlled by hydro-bromate of caffeine. There was no history of syphilis.

October 7, 1891. I recommended him for admission to the service of Dr. Bolles, with the view of trephining for the relief of the headache if it could not be controlled by medical means. It so happened that relief was obtained by caffeine, so this operation was not required. The question of operation for the removal of the tumor, which was correctly diagnosed and localized as cerebellar, was entertained and discussed at different times. The mental symptoms were quite marked and were suggestive of disease of the frontal lobes. His memory was very poor; he was emotional, easily moved to tears, and rather weak-minded.

His symptoms steadily and somewhat rapidly increased in degree; and to them were added incontinence of bladder and bowels, in consequence of which he required continuous attention.

On November 9th he was discharged to his home, and died three days later.

The autopsy was made by Dr. C. M. Chamberlin, of Lawrence, who has kindly forwarded the specimen to Dr. Fitz and furnished the hospital with a statement of his findings. The right lobe of the cerebellum was occupied by a cyst about the size of a hen's egg, filled with pale limpid serum. The middle lobe was not involved, but might easily have been, and probably was compressed by the growth.

Dr. Whitney who has kindly examined the specimen for me, reports:

"The specimen consisted of the cerebellum with the pons and medulla attached. The under side of the left hemisphere of the cerebellum was occupied by a cyst measuring about six centimetres in its greatest diameter. The cyst was lined with a relatively smooth, firm, yellowish-white membrane, easily separable from the cerebellar substance, which surrounded it on all sides except the inferior. The substance of the cerebellum was compressed. Microscopic examination of the wall of the cyst showed it to be made up of a fibrous tissue rich in small cells and well vascularized, and in the inferior part the vessels were very abundant, forming almost a true telangiectasis. The inner side of the lining of the cyst contained numerous granules of blood pigment. The cyst has advanced so far that absolute proof of its mode of origin cannot be obtained; but it seems probably to be due to a hæmorrhage just beneath the pia mater or in the superificial part of the cerebellar substance."

About seven years previous to the development of his first symptoms the patient, while standing on the top of a moving freight-car, was struck on the back of his head by a bridge. The accident must have been a severe one, for he was knocked unconscious, and remained so probably the greater part of a day and was disabled for some days. His statements varied so at different times regarding the severity of the accident, probably owing to the loss of memory, that more cannot be determined. The question was discussed during his illness, whether or no any close connection between this accident and the final illness was probable. The autopsy would seem to show that a hæmorrhage may have been produced at that time, and may have been the origin of the cyst.

As to the feasibility of operation, although I felt there was the highest probability in favor of a cerebellar tumor, I was unwilling to advise an operation, in consequence of the unfavorable results that have hitherto attended this operation. Had I known it to be a cyst, I certainly should have advised it. Only two successful cases have thus far been reported; one of these was a sub-tentorial hydatid cyst and therefore easily emptied. In the other case the tumor was superficial and fixed to the bone.

An element of uncertainty must always attend attempts to remove a cerebellar tumor, owing to the difficulty of locating the growth within the cerebellum; and unless the growth is superficial or the tumor a cyst, the danger of shock must be great. Inasmuch, however, as such tumors are of themselves necessarily fatal, and as there is often a possibility of the growth being a cyst or superficial, it seems to me to be sound surgery to make an exploratory opening in all cases, with the idea of attempting removal should the conditions be found to be favorable. Considering the frequency with which cysts are found following injuries, it seems to me that such an operation is particularly called for when a previous history of traumatism exists. This, however, should be done before optic neuritis has developed. If the operation had been done in this case it probably would have been successful. Cysts of the lateral lobes, if they can be diagnosed, would seem to be particularly favorable subjects for operation as lesions of these lobes may occur without disturbance of function.

Inasmuch as ataxia is known to accompany tumors of the frontal lobe, a more careful study is needed of the peculiarities of inco-ordination of movement accompanying lesions of different localities. Where optic neuritis is absent and psychic disturbances are present, as in the above case, it may be difficult to distinguish between frontal and cerebellar tumors.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 18, page 446.)

SURGERY OF HYDATID DISEASE.

A. S. Lebrdeff [16] and I. I. Andrief's investigations in 1889 are said to prove that daughter-cysts transplanted in the abdominal cavity (experimentation done with rabbits) will continue to grow and multiply. Dr. Sladnitzky [17] has recently confirmed this, and advocates that on that account the strictest precautions should be taken to prevent the escape of the daughter-cysts into the peritoneal cavity when operating on the parent cyst, since by their multiplication they can cause all the disturbance of the original disease. When it is evident that hydatid cysts of the liver have burst into the peritoneal cavity, abdominal section is indicated, for this same reason at once. Exploratory tapping for diagnosis of abdominal hydatids is to be considered allowable only in certain quite exceptional cases.

THE SURGICAL TREATMENT OF INTRA-PERITONEAL TUBERCULOSIS.

Czerny [18] makes the following report in regard to the curability of this affection. That tubercular inflammations of some membranes may subside, but the process is so often dependent on adjacent foci (glands, uro-genital tract, *et alii*), that other sequelæ must necessarily follow. Pleurisy preceding tubercular bone and joint disease is found (or would be if inquiry was made) of frequent recurrence. When the nucleus of infection is limited and removable, a permanent cure is possible. He reports sixteen cases, comprising operations for ovariotomy, inguinal hernia, enucleation of uterine-myoma, resection of tubercular intestine, extirpation of tubercular mesenteric glands, removal of tubercular peritoneum, etc. There were five cures: (1) miliary tuberculosis of the peritoneum, found during an ovariotomy; (2) miliary tuberculosis of the peritoneum, found during an inguinal herniotomy, reported well at end of four months; (3) a resection of a tuberculous cæcum, well three years later; (4) extirpation of mesenteric gland; (5) tubercular ulceration of cæcum, resection, well fourteen months later. Ten of the fifteen died. The cases are worth careful study. Czerny thinks that for operative purposes there should be a distinction made between the class characterized by firm, tumor-like masses, that is, a dry, adhesive form, and the miliary form accompanied by liquid effusion. The latter type is most favorable for operative results. The former has very little encouragement for the surgeon. The latter, by absorption and thickening, may be transformed into the former, as was observed in one of the reported cases. The surgery of the intestinal and lymph-gland tuberculosis is very difficult, and has been little practised; still he thinks his work justifies farther trial.

THE "SCHWALBE" METHOD OF TREATMENT OF REDUCIBLE HERNIÆ.

Mangoldt,[19] Dresden, has published an interesting review of Steffen's article describing this method. The Schwalbe method consists of the subcutaneous injection of alcohol (twenty to seventy per cent), by means of a Pravaz syringe, with antiseptic precautions, into the ring, as near as possible to the hernial sac; amount two to three grammes; repeated four to fourteen days, according to sensitiveness of patient and amount of reaction; these injections omitted, and recommenced after a pause of eight to fourteen days. Treatment continued till the diffuse thickening and fibrous contraction thus caused has completely closed the ring. The article describes accurately the technique of the method. The duration of the treatment varies from one month to two and a half years or more, according to the age of the patient, the size of the hernia and the diameter of the ring.

Results reported: cured (all varieties) 245 (83.62%); relieved, 19 (6.46%); not cured 29 (9.9%). A "cure" was a hernia, which was relieved so that the patient had worn no appliance for at least six or seven months, and examination by coughing, straining, standing, lying or by invagination of scrotum, was negative. The canal was not always completely closed, but the hernia never recurred, on account of the firm adhesion of the peritoneum around the inner ring. The cases of failure were in fat patients; thin patients with relaxed, flabby tissues, chronic bronchitis and emphysema, very large herniæ; and where the treatment was not continued long enough. Recurrences in ten per cent. of cases due to too short treatment, chronic cough and constipation. There is no fatal case reported. One patient has remained cured fourteen years. Steffen claims to cure four-fifths of his cases. The patient does not, when cured, require a truss or bandage. The younger the patient, or the more recent the hernia, the better the prognosis and the shorter the duration of treatment. The results in patients unconfined, with three to seven days' intervals, give quicker results than daily injections of patients confined to bed. If the hernia is easily retained by bandages or truss, occupation may be continued during treatment. In rare cases the alcohol has caused urticaria, dyspnœa, vertigo, intoxication by vegetarians.

HERNIÆ.

A valuable *résumé* of the literature, chiefly German, of this subject, has been published by Wagner,[20] of Leipzig. The article is too long for more than a very abbreviated report, but some points are of especial interest. In regard to præperitoneal herniæ, the following statistics are reported: Total number of reported cases (inguino-præperitoneal) 58; all but one males; ages ten to seventy-four years. The position of the testis was abnormal on the affected side in a majority of cases. Thirty-three cases were right, 14 left, 11 both right and left. Since Krönlein's cases were published, there have been 30 cases with symptoms. Treatment: two relieved by taxis, 16 by operation; 12 deaths. In very few cases is the condition recognized before operation. Cruro-præperitoneal type: seven cases, all women; four recoveries; three deaths, in spite of operations, since the inner sac was not recognized.

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[16] Medical Chronicle, 1889, p. 215.

[17] St. Petersburgh Inaugural Dissertation, 1891, No. 22, p. 32. Review: Annals of Surgery, 1891, vol. xiv, p. 399.

[18] Beiträge f. Klin. Chir. 1890, Bd. vi, Hft. I.

[19] Schmidt's Jahrb. f. gesamt. Med., 1891, 231, p. 275.

[20] Ibid., 1891, Bd. 230, p. 167.

Diagnosis: History often of importance.

Hernia is usually congenital. There is delayed or incompletely descended testicle. The fact is that symptoms persist after an apparent successful reduction; also that the reduction is difficult, and that the hernia at once recurs in spite of a wide ring, as soon as manipulation is suspended. The tumor is unusually resistant, with pain, marked tenderness and dulness of the adjacent abdominal wall. At times compression of one sac causes increased tension in the other (section of præperitoneal sac followed by fresh gush of fluid).

Differential diagnosis: From internal strangulation of a neighboring loop of intestines, reduction "en bloc," and interstitial (that is, hernia between abdominal muscular planes). In operating, Holder recommends the exposure and opening of the outer sac, then by manipulation, or, if necessary, enlarging the internal ring, the contents is reduced. If this does not render the internal sac attainable, the incision of the abdominal wall must be lengthened till it is exposed. After reduction the sac is excised, after suture of the abdominal ring.

With regard to observation on strangulated herniæ, Koch, Nürnberg, reports that when the sac was excised and the stump secured by suture, but other rings were not closed by suture, in 37½% of his cases (No. 17) recurrence took place. Nussbaum operated only when truss treatment was impractical or inefficient. His radical operation was exposure of the sac, taxis, suture of the neck of the sac, its amputation, after which the amputated sac was sutured into the canal and the pillars reunited. He is reported as having from 20% to 25% of recurrences. Gangrenous herniæ were excised, and an artificial anus established. He claims that the Schwalbe method (alcoholic injection) can be favorably combined with the open method, and the firm callus about the sac can be produced in a simple manner by use of the Pacquelin cautery.

Wolter reports 387 radical operations from the Hamburg hospital (72 deaths). The technique was as follows: 95 cases highest possible ligation of sac and its extirpation, pillars of ring sutured; 17 cases sac ligated, excised, pillars not sutured; 15 of these cases were femoral; 15 cases pillars sutured, but probably sac also included; in three cases only was the canal opened by incision; 11 cases modified operations; in 24 cases technique not described; in 53 cases the omentum was partly removed; in no case was the testes removed. Results: 58 cases where examination was made at considerable interval after operation, 15 recurrences; a still later investigation showed 41 definite cures. With Schède, he considers the firmest possible union of the pillars by suture of great importance, and that the excision of the sac is of secondary importance. This view is contrary to that held by many successful operators. He also claims that the use of a truss after operation is no impediment to a permanent cure. He claims never to have seen pressure atrophy, or relaxation of the peritoneum from it, and quotes Schède as recommending it, except where silver-rim sutures were used.

PRIMARY RESECTION OF INTESTINE FOR GANGRENOUS HERNIA.

Hab's[21] (Magdeburg) report of 200 herniotomies is a valuable one, and well worth a perusal. One point of especial value is his contribution to the statistics of immediate resection of a gangrenous intestine when operating for hernia. In sixteen cases the intestine was resected and sutured; nine cases died and seven recovered, a much larger percentage of recoveries than is usually recorded.

HERNIA WITH INTESTINAL GANGRENE.

The question of immediate resection and suture of the gangrenous gut under these conditions is again attracting attention, and cases are accumulating where primary resection has been successful, although the majority of opinion is still in favor of treating such conditions extra-peritoneally, or by forming an artificial anus to be subsequently closed if the patient is rescued from immediate death. Two procedures have been proposed as a substitute for either of these alternatives. The first is indicated in cases where the gangrenous spot is small, and consists of folding in the affected area and suturing the intestine over it in the same way as an intestinal wound would be treated, then, if sloughing takes place, the necrotic mass is cast off into the interior of the bowel. When this method is used, the intestine is immediately replaced in the abdomen and the inguinal wound closed. The other expedient is from Helferich,[22] of Greifswald, who proposes to form an anastomotic opening by so uniting the intestines above and below the gangrenous area. The latter portion is then treated outside the abdomen, and is isolated from fæcal circulation, the anastomotic opening being in the abdominal cavity. This opening he makes only four centimetres long. This he claims is a short operation. Later, if the strangulating intestine regains its vitality, it can be returned to the abdomen, after freeing it from the adhesions about the abdominal wound. If it becomes gangrenous, it can be resected without opening the peritoneum, and the resected ends readily closed. Helferich reports two cases illustrative of this method. One was successful. One died from collapse, but it was found that the anastomosis was complete when examined post-mortem. He claims that the method is indicated where the condition of the strangulated intestine is doubtful and gangrene threatened, rather than in cases where actual gangrene exists.

Poulsen, on the other hand, has collected 23 cases of primary resection of the intestine with immediate suture,[23] with five deaths: which is a good showing if the cases were not selected ones. These operations were done from 1884 to 1888, inclusive. His opinion is that many of the fatal cases are not published. He himself at present treats these cases of gangrenous intestine by washing out the peritoneal cavity, extirpating the gangrenous sac, disinfecting its site, drawing out the gangrenous loop till healthy intestine is reached, suturing this in place in the abdominal wound, dressing with iodoform gauze, and later (one to two days) removing loop with Paquelin cautery. The artificial anus is subsequently closed.

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[21] Deutsche Ztsch. f. Chir., 1891, xxxii.
[22] Centbl. f. Chir., 1890, Beilage, No. 25.
[23] Hospitals Tidende, R. 3, Bd. 7, pp. 349, 373.

An interesting discussion of the treatment of gangrenous herniæ by the Surgical Section of the Suffolk District Medical Society, recently published,[24] deserves a careful perusal by those interested in this subject.

THE SYMPTOMS OF INCARCERATED OBTURATOR HERNIA.

Krönlein [25] describes these as resembling those of ileus, that is, intestinal obstruction, together with pain in the thigh radiating from Poupart's ligament to the knee, excessive tenderness over the corresponding pectineal area, and still more marked behind the adductors in the direction of the foramen ovale. The motion of the hip is painful, and in one case there was some swelling of the leg and slight prominence of the pectineal region.

GASTRIC MYOMA.

Kunze reports a case of the removal of a subserous leiomyoma [26] by Rupprecht, in Dresden. The tumor was nearly equal to a fist in size, and was situated in the anterior wall near the cardiac orifice. Its removal necessitated an extensive resection of the anterior wall of the stomach, which was accurately closed by suture. The abdomen was closed. Death on the fifteenth day. Post-mortem examination disclosed a firmly closed gastric wound, without any trace of peritonitis. Cause of death, embolic pneumonia.

(*To be continued.*)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, February 22, 1892, the President, Dr. Frederick I. Knight, in the chair.

Dr. Edward Reynolds read a paper on

THE ESSENTIALS TO SUCCESS IN REPAIR OF THE PELVIC FLOOR IN PRIMARY AND SECONDARY OPERATIONS.[1]

Dr. Baker: I have listened with a great deal of interest to Dr. Reynolds's paper, because I think in the first place it shows the importance in recent tears of taking deep suture, which I am sure has not been fully recognized by the profession as a whole.

The importance, then, of the deep suture, which alone can give, as Dr. Reynolds has insisted upon, this sigmoid curve to the vagina, which in its turn gives firmness, strength and support to the anterior rectal wall as well as to the posterior vaginal wall. It seems to me that in the recent tears of the perineum, so far as my experience has gone, that the important things to secure success are mainly two: first, the absolute cleanliness of the parts; and, second, with all due respect to Dr. Reynolds, the most perfect approximation of the parts. I should, I think, go a little further than Dr. Reynolds did in regard to this matter of approximation, for the reason that I believe the more nearly we approximate the parts the more nearly we simulate nature, and although this may be a little difficult on account of the ragged ends and swelling, yet still with care, and particularly if we use the suture which he lays stress upon in another way, that is, a suture which as that swelling subsides can be tightened again, I think that we have gained a very important point in regard to the success in recent cases. I have been in the habit of practising and advising in the recent tears the use of deep sutures of silver wire, for, after twenty-four or forty-eight hours, when the swelling begins to subside, you can get another twist on them and thus keep the parts in perfect apposition.

Another thing I should criticise a little, and yet I know it is not the custom or habit of most operators, is the importance in any operation on the perineum, be it recent or secondary, of keeping the fingers out of the rectum. I am more and more convinced of the importance of thorough cleanliness at the time of the operation; and although we may wash out the rectum, still we cannot always control the fæces that are coming down into that lower rectum, and I think we shall all the more insure a perfect result if we observe the aforesaid rule during operations on the perineum.

I am very much pleased and impressed with the way in which Dr. Reynolds has presented the importance of this subject; and although I think that many operators nowadays are looking with a great deal of interest at the more rapid method of operating by the flap-splitting which has received the name of Tait's operation, why I am not altogether sure, because I remember two surgeons of this city who were operating by flap-splitting on the perineum years and years ago, almost before I had heard the name of Tait. Dr. Beach was, I know, doing virtually the same thing Tait is doing, and Dr. Warren was splitting from above downwards, so that I do not think we need to go further than to term it a flap-splitting operation. I have been disappointed in that operation for the reason that it did not seem to accomplish all I desired in cases in which I have used it. In the series of cases in which I tried it, and I gave it a fair trial, not getting the good results I had expected, I felt desirous of being sure that I was getting all the advantage that could be obtained from it and therefore I asked one of Mr. Tait's pupils to operate on some cases with his method, which he did and the results were not, it seemed to me, entirely satisfactory. I think that in recent tears if we can observe thorough cleanliness and a good approximation of the parts it matters comparatively little what the other steps of the operation are.

I cannot altogether agree with the unimportance of the tears in the upper part of the vagina; although I know they tend to heal readily, yet still I think there is a great tendency to the formation of more cicatrical tissue if left to nature than if the parts are cleansed and sutures taken.

I think that Dr. Reynolds's diagrams also show exceedingly well the inadvisability of practising any one way of doing an operation on any great number of cases. As we are called to perform more and more operations we shall see that one way of operating on

[1] See page 525 of the Journal.

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[24] Boston Medical and Surgical Journal, 1892, vol. cxxvi, 207.
[25] Bruns. Beitr. z. Klin. Chir., 1890, Bd. vi, Hft. 1.
[26] Arch. f. Klin. Chir., 1890, xl, 3, p. 753.

a tear that has occurred on one way is the best, and another way is better for another case. Supposing this tear or separation of the fascial attachment has occurred on one side of the perineum, what is the use of going on and denuding as we would a perineum where both sides have been sundered. In such a case I should say we should do virtually a one-sided operation. I think the diagrams show that we should vary very much our operations, methods of denuding and closing the wounds.

Dr. Chadwick: Dr. Reynolds's study of this lesion has made him so familiar with the subject and his language is so clear that he does not leave much to be said. In the primary operation I think there is no question that he is right about the direction in which the sutures should be put. There are one or two little practical points which are perhaps well to mention. With regard to the finger in the rectum, the distance between the rectal wall and the vagina is so slight that to my mind it is absolutely essential that the finger should be in the rectum when you introduce the needle. It would be more serious to have the needle go through the rectal wall and make a fistula than to run the risk of infection. Of course you should disinfect the finger every time you withdraw it from the rectum.

The point to which those sutures converge at the top is a point where there are no very solid tissues. When they are tightened they pull away from that point, especially in a recent operation when the parts are œdematous and torn, and it seems to me well to put the suture through the vaginal wall to get a *point d'appuis* to hold the upper angle of the suture. Another point would be that the sutures should be made very deep, and go behind the torn surface deeply into the muscular tissue of the perineum in order to hold. The superficial tissues are ready to slough and very friable.

With regard to the secondary operation I have operated after Tait's method and with very satisfactory results. I think the operation should be restricted to that class of cases where there is no great prolapse of the posterior vaginal wall. It takes no account of the prolapse of the wall, and I have seen in some of the early cases I did the posterior wall roll out over my approximated surface out of the vaginal outlet after I had got a perfectly good union; in other words, I think that if the vaginal wall is prolapsed and rolled out and been distended it must be excised to a certain extent to reduce the calibre of the vagina and prevent subsequent rolling out. In the class of cases where there is no great prolapse of the walls it seems to me that this operation gives as good results as you can get.

Dr. Reynolds: As regards the use of the finger in the rectum, I personally think it is unwise to put the finger in the rectum for any but the primary operation. In that I am in the habit of putting the second finger into the rectum; I leave the thumb and first finger outside, never take that middle finger out until the three sutures are in, and then disinfect the finger at once and tie. In a rapid, rough operation like that I think that by this procedure you gain the advantages of the use of the finger without its disadvantages.

As regards the primary operation I should like, if there is time, to state briefly on what I founded my statement that I thought a comparatively rough and ready approximation was the better. I agree with Dr. Baker that the essential part of the whole operation is to get accurate apposition, but I disagree in that I think that a comparatively rough gathering of the tissues together in such a way that the surfaces can slide slightly on each other leads to better and more exact apposition in cases operated on immediately after labor, than any careful suture I have been able to adopt. For some years in the cases that I have sutured in the wards of the Lying-in Hospital, where I have the best of light, two house-officers, and half-a-dozen nurses to assist me, I have done the perineum as I would do in the secondary operation, inserting the sutures as I would in the secondary operation with every attempt to make the approximation exact, and I confess my results have not been as good as in private practice where I have had no assistance and have adopted the rough method. I think that is because the tears are almost never symmetrically alike on both sides. They are differently stretched on the two sides by labor, they are differently bruised and paralyzed, the muscles immediately after the tear retract in differing degrees; and I believe that when you attempt an exact approximation you generally secure an inexact one, that is, you draw together tissues which were never separated from each other; but if you take all the muscular and fascial tissues near the tear into a wide sweeping suture, and bring them together *en masse*, I think that as the tissues restore themselves after labor the ensuing retraction of the muscles will bring them more closely into an exact apposition than can be done by art.

As regards the criticism that you cannot use one operation for so many forms of laceration, that certainly is very true. I did not think there would be time to go into all the forms, but in all of them I think that putting in at least two broad supporting sutures that will act as a splint and take the levator ani muscle off from the denuded point is a good point to remember. The fibres of the levator ani act obliquely from behind forwards and from above downwards, and during defecation the function of these fibres is to draw up the anal orifice as the fæces come down, so we can see how the new line of union running in a direction perpendicular to them must not only be drawn upon from before backwards but also from below upwards by their action, and it seems to me that the two sutures I have mentioned are important and yield good results.

Dr. Geo. B. Shattuck read a paper on

PNEUMONIA IN BOSTON DURING THE RECENT EPIDEMIC OF INFLUENZA.[2]

Dr. F. Minot: In my experience with influenza during the last two winters, I observed that a certain proportion of cases were considered by the attending physician as pneumonia, although they had none of the physical signs of that disease; that is, no chill, no dulness, no characteristic expectoration, and no bronchial respiration. In fact the typical signs of pneumonia were absent. In those cases there were signs of œdema of the lungs, often to a very great extent, but without the dulness, and those cases would sometimes improve temporarily under the effect of nitroglycerine to a remarkable degree, although most of them were fatal in the end. I cannot help thinking therefore that the statistics which are not based upon hospital returns are not altogether safe as a criterion for estimating the proportion of cases complicated with croupous pneumonia. In the hospital returns of course there can be no doubt, but among general practitioners a certain proportion of cases of œdema of the lung is confounded with pneumonia.

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[2] See page 518 of the Journal.

Dr. Cutler: I have had very little experience with pneumonia in my own practice this year. I have seen a number of cases in consultation and they were peculiar in that the onset of the disease was rather slow and the course was protracted. I think that it is my observation that rather more cases of quite young children had pneumonia than I had ever seen before. In fact until within a year or two I do not think I have ever seen a case of pneumonia in a very young child. This winter I have seen several. Also the temperature chart has been peculiar, and instead of following out the usual course has been very much more irregular. As far as the prostration is concerned I should say that perhaps that was a little more marked than one sees it usually in ordinary cases. I have had no experience in the hospital cases, and only a limited one in private practice.

Dr. Mason: My experience has been the same as Dr. Shattuck's at the City Hospital and relating to the same cases largely. It is only by the presentation of such carefully-prepared tables that we can form an accurate opinion of these accompaniments of influenza, or the extent to which influenza directly or indirectly causes increase in the death-rate of Boston from pneumonia and bronchitis. It seems to me difficult to allot the exact proportion of cases that may be accompaniments of influenza and those which are sequelæ as they would follow any exhausting disease. I have found it very difficult with hospital patients, particularly, to find out whether they had a definite history of a previous attack of influenza or not, coming into the hospital very ill, with no friends perhaps who could speak for them, but I have been inclined myself, both this year and two years ago, to regard pneumonia as a necessary and fatal accompaniment of epidemic influenza rather than as a sequel. That I think was the view taken in earlier epidemics by Graves, Watson, and other distinguished physicians in the former part of this century, and certainly there are patients who, after a day or two of preliminary symptoms, are stricken down by an acute attack of lobar pneumonia. To be sure the same thing happens in non-epidemic seasons so that it is a very difficult matter to decide by figures, but if we had not influenza with us I think it is quite certain we should not have pneumonia at least to anything like the same extent.

In regard to the apex pneumonia I suppose the delirium was more common in children than in adults. A child with any form of pneumonia is apt to be delirious.

The complications which were most fatal in pneumonia were empyema, alcoholism and Bright's disease. I have seen cases at the City Hospital in which the empyema developed before the process of resolution had fairly begun. Two years ago I think there were about a dozen such cases which entered the medical wards, all of which fortunately became convalescent from the pneumonia and the empyemas were drained successfully.

Dr. Goss: My experience was necessarily limited. It seemed to me that in this epidemic there were much more frequent troubles with the respiratory organs than two years ago. There were a great many more cases of bronchitis and pneumonia, and my opinion is that these affections were accompaniments or complications rather than sequelæ; often the pneumonia being insidious in its approach perhaps and not as frank as in the ordinary croupous pneumonias which we see at other times.

Dr. J. H. McCollom: It is an interesting fact, bearing on the subject of pneumonia after influenza, that at the Suffolk County Jail during the first epidemic, in which there were 125 cases, in no instance did pneumonia supervene. During the second epidemic of this disease, in which there were 80 cases, there was a like freedom from pneumonia. The explanation of this immunity from pneumonia is, without doubt, due to the fact that as soon as the first symptoms of influenza appeared the patients were confined to their cells and remained there until they were well.

I think that the influence of influenza on the death-rate of Boston is not fully appreciated. During 1891 the percentage of deaths from this disease to the total mortality was twenty-nine one hundredths of one per cent., while that of scarlet fever, one of the most prevalent of diseases, was only sixty-one one hundredths.

There is a striking statement in the report of the State Board of Health of two years ago, that directly or indirectly the first epidemic of influenza caused more deaths in Massachusetts than the great epidemic of small-pox in 1872 and 1873. Referring again to pneumonia at the jail, Dr. McCollom stated that there were very few cases at any time, that the physical condition of the prisoners was such that they would be extremely susceptible to an attack of pneumonia.

Dr. Ayer: I think that papers like this one ought to be encouraged, since they are so valuable.

In regard to pneumonia, I have seen very little of it in the last epidemic. In the first epidemic it seemed to me that the neuro-muscular symptoms were more marked than the respiratory, and much more so than the gastric. Perhaps the doctor would not agree with me in regard to there being a relapse in the last year, but I do feel as if I had seen symptoms very marked and constant of subacute character, beginning February and March and lasting through the spring, and a second relapse about the last of December. The symptoms I saw last spring were decidedly neuro-muscular in character and respiratory too. This year the respiratory symptoms were far more prominent in every way. Except in regard to the pneumonia, the respiratory symptoms were confined largely to the upper air-passages, laryngitis, serious sore throats, pressure about the chest, and all those symptoms, partly, perhaps, connected with the nervous system.

Dr. J. S. Greene: As to the matter of concomitant *versus* sequelæ, two of the hardest cases I have had commenced as a sharp attack of pleurisy, and developed pneumonia simultaneously with influenza.

Dr. Geo. B. Shattuck: I was very much interested in hearing what Dr. McCollom had to say. I think it is a fair contribution to the question raised. There are certainly other people who are quite as hygienically situated as our friends in the jail, and who still get pneumonia after influenza or with influenza because, I should say, they did not take care of themselves.

In regard to apex pneumonia I fancy that children are always liable to delirium, cerebral excitement, with all pneumonias as with all acute febrile attacks.

With reference to the question as to whether pneumonia is a sequel or a complication or concomitant I do not wish to dogmatize about it. I simply think it is a fair question for speculation and I am rather inclined to the former view. I did not intend to say that there had been no recurrence of epidemic influenza during the year 1891 before December; but that I thought we might consider that the months of December, 1890, and January, 1891, had been free from it in this neighborhood. I did not wish to express an opinion in regard to the spring months.

Dr. Gay showed

A COLLECTION OF CALCULI RECENTLY REMOVED FROM A BLADDER BY LITHOTOMY.

The man, aged sixty-nine, had been disabled from business for five years. In the earlier period of his illness he was repeatedly sounded for stone, at one time it being done under ether, but nothing was found till recently. The stones are hard, smooth and of a light fawn color. Fourteen were shown varying in size up to an inch and a quarter in diameter. Two ounces were crushed and removed by Bigelow's method. There being no apparent limit to the number in the bladder, lateral lithotomy was done, and the remainder removed. The entire amount weighed five and a half ounces. He died of uræmia and exhaustion in a week.

Dr. Rotch reported

A CASE OF DOUBLE MOVABLE KIDNEY.[8]

Dr. Minot: I should like to know the interval between the operation and the last time the patient was examined, and whether the kidneys were in place.

Dr. Rotch: The operation was done in June last. I examined her yesterday. The kidneys were in place.

Dr. Minot: I think what is needed is a table, if possible, containing the results for a considerable length of time afterwards. My impression is that Guttner speaks of several cases where the operation had succeeded, but after a time the former condition returned,— I refer to the operation of sewing the kidney. I think Guttner gives several instances of that condition in children under twelve years of age. The great proportion of cases on the right side in women is generally ascribed to the pressure of the corset and it would seem as if that was the most probable cause. The kidney slipping out from its capsule and getting beneath the liver, its relations to the liver are entirely changed, and the pressure of the corset forces it down and aids in the displacement; and even before the kidney has moved from its bed, the pressure upon the liver from the corset would tend to force it in a measure out from its capsule

Resolutions on the death of Dr. Henry I. Bowditch were presented and passed.

Recent Literature.

A Practical Treatise on Fractures and Dislocations. By Frank H. Hamilton, A.B., A.M., M.D., LL.D. Eighth edition, 850 pages, 507 illustrations. Revised and edited by Stephen Smith, A.M., M.D. Philadelphia: Lea Bros. & Co. 1891.

The work of Dr. Hamilton is so well known that a description is almost unnecessary. Its numerous editions are convincing proof, if any is needed, of its value and popularity. It is pre-eminently the authority on fractions and dislocations, and universally quoted as such. In the new edition it has lost none of its former worth. The additions it has received by its recent revision make it a work thoroughly in accordance with modern practice, theoretically, mechanically, aseptically. Its new editor has discarded matter now irrelevant, and separated clinical data from the abstract portion of the work by different type, so that it may be readily distinguished. Modern ideas and new facts have been introduced when indicated. The list of illustrations shows marked change and improvement, for one hundred and five new ones have been added to increase the efficiency of this valuable means of imparting information respecting methods and details.

The original arrangement of this volume, as regards classification, has been retained unchanged: Part I (498 pages) being devoted to the discussion of fractures, while Part II (347 pages) treats of dislocations.

Part I opens with a description of fractures in general, and treats of their character, etiology, clinical history, diagnosis, repair, prognosis, treatment, complications, and possible sequelæ. It is an interesting and very instructive chapter, and would be more so had more information been given under "Repair of Broken Bones," respecting *rate* of union. "Treatment" is well discussed; and "Delayed or Non-Union" attracts especial interest.

Specific fractures are next treated. They are classified anatomically. All possible fractures of individual bones with their causes, symptoms, diagnosis, treatment and complications are satisfactorily considered. As above, the only addition possible would be more specific facts with regard to the time required for union. Such data are of great importance when the duration of treatment is in question; and there is such a difference of surgical opinion at present on this point, especially with reference to these lesions affecting the lower extremity, that such data would seem indicated. How soon it is safe to omit apparatus, and similar considerations are of great importance in actual practice, and have not apparently received the amount of attention given to many other portions of the work.

Part II, describing dislocations, has an arrangement analogous to Part I. Like it, little can be said except in commendation. The article entitled "Dislocation of the Head of the Radius Downward (by elongation)" is a good example of the manner in which the editor has performed his task. This lesion is frequently unrecognized in practice and unmentioned in surgical literature, even in works on dislocations. Here an entire section is devoted to it, which lacks completeness only in that the writer has paid more attention to the French literature of this subject than to the valuable English and American articles of the past five years.

The task of writing a complete treatise on a subject of such magnitude is no easy one. Dr. Smith has aimed to make the present volume a correct exponent of our knowledge of this department of surgery. In examining this volume one is at once struck with the evidence of the vast amount of labor its compilation and reconstruction must have necessitated. The more one reads the more one is impressed with its completeness. The subject is one of great importance, the different lesions very numerous, the generalization of statistics and clinical data difficult and laborious, the mass of material at the disposal of such a writer enormous. Yet the work has been accomplished; and has been done clearly, concisely, excellently well.

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[8] See page 522 of the Journal.

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THE INFLUENCE OF EMOTIONS IN THE PRODUCTION OF ORGANIC DISEASE.

Whether organic diseases of the heart may result from mental causes is more doubtful than that arterial disease may so originate. Much has been written of late on the influence of emotions in the development of arterio-sclerosis in general and of arterio-sclerosis of the heart in particular. This morbid condition has been referred to increased arterial tension, and one of the causes of this high tension is mental emotion. The condition of a person under intense emotion is that of vascular spasm; "the face is pale and covered with sweat, the extremities are cold, the pulse is small, weak and miserable, an indescribable anguish constricts the heart, whose beatings, precipitate and tumultuous at first, may be suspended in a state of syncope." That there is spasm of the arterioles here has been proved by the application of Mosso's plethysmograph to similar cases.

"Let us suppose," then, says Huchard, "that the emotions are repeated, are perpetuated, as is the case with many politicians, financiers, or others involved in business schemes, who lead restless, anxious, worried lives, and then you will understand why it is that their arterial system, in a state of permanent hypertension must in the long run be doomed to the lesions of arterio-sclerosis."[1]

Dr. Clifford Allbut mentions the case of a young man whose pulse-tracing during twelve months of domestic anxiety showed, in comparison with that before and after, a marked and persistent increase of tension (Lys).

The dependence of angina pectoris upon degenerative vascular changes in the heart-muscles has been shown by recent writers, as Lauder Brunton and Huchard; the latter, especially, in his brilliant work on "Diseases of the Heart," calls attention to the influence of mental disturbance in producing increased tension and arterial degenerations. Other results of atheroma, such as aneurism and cerebral hæmorrhage can be shown logically to follow emotional causes sufficiently intense and sufficiently prolonged. Dr. Graham Lys in recent numbers of the *London Lancet* (April 23–30, 1882), has considered the subject in its relation to other morbid states; such as Graves' disease, dyspepsia, jaundice, diabetes, renal cirrhosis, chorea, cancer, etc.

With regard to Graves' disease, he affirms that assuming, as we are bound to do, "that an antecedent mental state may fairly be held responsible for the subsequent morbid developments there will be difficulty in refraining from the belief that the exophthalmos and goitre are in some way referable to the palpitation." "Slight thyroid enlargement is comparatively so common in girls who suffer only from intermittent palpitation that there is little difficulty in referring it to this cause, and the exophthalmos is the least constant and least developed of the three."

"It can hardly be contested," he says, "that in every case of this disease a morbid mental state of constant character precedes its development; the prominent features of that mental state are depression with extreme irritability."

There can be no question that indigestion follows mental disturbance; the latter, if prolonged, may entail severe and even incurable dyspepsia. Dr. Lys thinks that this may be due to an arrest of the secretion of gastric juice. Hutchinson has dwelt on the influence of emotion in some of the secretions, and has instanced cases of persistent dry mouth following some mental shock. Beaumont directly observed the arrest of the gastric secretions by anger and other severe emotions. Probably, also, movements of the stomach may be inhibited by emotion; irritability or sluggishness of the bowels is often referable to mental disturbance according to its kind; the latter disorder reaches its climax in the extreme constipation of melancholia.

Many instances are on record of simple jaundice following mental emotion; the question how this can happen, has thus far not been explained. Dr. Lys does not venture any explanation, but supposes that the jaundice must be due "to some influence on the hepatic cells, which, while leaving them competent in some degree to complete the formation of bile-pigment, interferes with the excretion of it." He alludes to the fact that acute yellow atrophy of the liver often follows immediately mental shock, and runs its course rapidly.

Diabetes, mellitus and insipidus, is acknowledged by all authors to follow as a direct result of mental anxiety or shock. Fagge quotes from Herman Weber the case of a gentleman who became diabetic on two separate occasions, at an interval of nine years, under the pressure of intense anxiety from impending commercial ruin, recovering, on each occasion at a turn in his circumstances. Dr. Lys thinks that cases of diabetes mellitus are rare without some history of mental disturbance, more or less striking, immediately preceding the attack. Diabetes insipidus is a much rarer disease, but mental shock and emotion are mentioned among its causes. The pathology of both forms is readily referable to vaso-motor dilatation from mental disturbance.

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[1] Huchard : Maladies du Cœur et des vaisséaux, Paris, 1889.

Dr. Lys refers to the fact that granular kidney has, from time to time, been attributed to mental anxiety. Dr. Clifford Allbut has asserted as an undoubted clinical fact that renal cirrhosis is often caused by prolonged mental anxiety; he suggests that the change might be such derangement of the nutrition of the kidney as occurs in the liver in diabetes. Dr. George Johnson, writing afterwards, says that the explanation of this view is that mental anxiety is a cause of dyspepsia, and functional albuminuria often depends upon the excretion of some abnormal products of imperfect digestion; and this has been mistaken for organic Bright's disease. The question whether granular kidney and arterio-capillary fibrosis may not be themselves, primarily, like the cardiac hypertrophy and arteritis deformans associated with them, the result of increased tension, is one which Dr. Lys thinks may still be reasonably entertained.

As for chorea, its pathology seems to be as inexplicable as that of any disease known. There can be no doubt that it is often due to fright, equally irresistible is the evidence which attributes it in some cases to irritation. Dr. Lys thinks that many diseases, as rheumatoid arthritis and phthisis, depend on mental trouble only as one means of failure of general health. Other paroxysmal affections, such as asthma and migraine, undoubtedly often own mental shock as the exciting cause of individual attacks. As for purpura, we can readily credit that increased tension due to mental cause, might be the determining agent in producing hæmorrhage. The frequent dependence of amenorrhœa and menorrhagia on mental causes is well known. Alopecia and canities as a result of fright and anxiety are no fiction of the poets.

Dr. Lys asks finally, What is the relation of malignant disease to emotional causes? He feels the want of positive facts here, he can only refer to the conclusions which many who have had the largest experience with disease have arrived at. "Too often," says Sir James Paget, "cancer quickly follows deep anxiety, deferred hope, disappointment." Dr. Murchison says: "I have been surprised at the frequency with which patients suffering from primary cancer of the liver have traced the commencement of their ill-health to protracted grief or anxiety. The cases have been far too numerous to be accounted for on the supposition that the mental distress and the cancer have been mere coincidences." He quotes Drs. Snow and Erichsen to the same purport.

"It might be thought," says Dr. Lys, "that all the mental trouble did was to lower the general health; but cancer is not observed with anything like the same frequency when the general health is lowered from other causes — such as want. Many cases might be quoted in which the development of cancer has followed mental trouble in a singularly striking way; but no individual instance can go far in carrying conviction; it is rather the fact that the association is so very constant that carries weight."

MEDICAL NOTES.

Typhoid Fever in Chicago. — The number of deaths from typhoid fever in Chicago was high during the past winter, but the rate has gradually decreased since then. There were ninety deaths from this cause during the second week in January, whereas the total for the month of April was only fifty-six.

American Pediatric Society. — At the recent meeting of this Society the following officers were elected for the ensuing year: President, A. D. Blackader, M.D., Montreal; First Vice-President, J. M. Keating, M.D., Colorado Springs; Second Vice-President, C. W. Earle, M.D., Chicago, Ill.; Secretary, S. S. Adams, M.D., Washington, D. C.; Recorder, William P. Watson, M.D., Jersey City; Treasurer, C. W. Townsend, M.D., Boston; Member of Council. T. M. Rotch, M.D., Boston.

Precautions Taken to Prevent Epidemics. — Since the recent outbreak of typhus fever in New York, the health authorities of New York and Boston have coöperated in keeping track, as far as possible, of recently-arrived immigrants. All immigrants arriving in New York, who give Boston as their destination, are entered upon a list which is sent to the Boston Board of Health. This Board is usually able to find these persons and to keep them under observation for some time, so that in case of the appearance of any infectious disease they may be quickly isolated and other necessary precautions taken.

An Anti-homœopathic Prize Essay. — Dr. G. M. Gould, of Philadelphia, offers a prize of $100 for the best essay showing "The Ridiculous Pretensions of Modern Homœopathic Practice." An essay should not contain over 15,000 words, and in simplicity and directness should be adapted to the commonest lay understanding. Papers should be sent Dr. Gould on or before January 1, 1893, type-written, without the name of the author, but accompanied by a sealed letter, giving the author's name with motto or *nom-de-plume*. The essays will be given to a competent committee, and when their decision is reached the sealed letters of the authors will be opened, and the prize sent the winner. The essay will then be cheaply but well printed in large quantities, and supplied physicians at the cost of printing.

New Jersey Law Regulating Midwifery. — A law has been passed in New Jersey that every person practising midwifery shall possess a certificate from the State Board of Medical Examiners. All now practising are allowed to obtain a certificate without examination, others must pass such examination as the board shall require. The board may refuse or revoke certificates for improper conduct or for failure to report births or puerperal fever. No person may advertise as a midwife without a certificate, but any one may give gratuitous service in case of emergency. Legally qualified physicians are not obliged to take out a midwife certificate.

An Official Dose Table. — At a recent meeting of the Académie de Médecine in Paris, Dr. Peltier proposed that the Academy issue a yearly table of the maximum doses of dangerous drugs for different ages, and that a law be advocated that no physician who keeps within the limits of the doses in the list shall be prosecuted for poisoning. If, on the other hand, a dose is prescribed larger than the maximum of the official list, the prescriber does so at his own risk.

Poisoning of a Race Horse. — Much sensation has been caused in the racing world in England by the announcement that Orme, a famous thoroughbred colt belonging to the Duke of Westminster, has been poisoned. A large reward was offered by his owner for any information that would lead to the detection of the poisoner. The *Lancet*, after reviewing the symptoms, arrives at the conclusion that they do not warrant a belief that the horse was suffering from anything which could not be attributed to natural causes.

Glanders in Great Britain. — It appears that the number of cases of glanders in horses has diminished during the past two years. All cases should now be reported under the contagious disease (animals) act; the annual reports issued by the government show that in 1891, 1,357 outbreaks were reported; in 1890 only 937; while in the previous year there were over 2,000 cases in London alone. Glanders is very much less prevalent than formerly. In the pre-railway days, when horses were so extensively employed in road traffic of all kinds, it was a veritable plague, and there were few stables in which it did not exist. Horses suffering from it were regularly worked, and in the cavalry and artillery corps it was extremely rife. It occasioned great losses in horse establishments, and there can scarcely be a doubt that many people also died from it, though its nature in them was not suspected.

NEW ENGLAND.

Massachusetts Medical Benevolent Society. — The Legislature has empowered this society to hold real and personal property up to $150,000 in value.

The Need of an Isolation Hospital in Lynn has been noticed during the past few weeks in connection with three or four cases of scarlet fever which have occurred in non-residents of the city.

Bequests. — By the will of the late Dr. Pliny Earle of Northampton, the city will receive $50,000 to be devoted to the Forbes Library, and the town of Leicester $6,000 for the erection of a library.

The Harvard Medical School Association will be glad to send to graduates of the Medical Department of Harvard University, in any part of the world the catalogue of its members, to which we referred last week. All graduates of the School are eligible to membership in the Association, the object of which is to unite all alumni and to advance the interests of the School and of medicine. The entrance fee and the annual assessment are merely nominal.

NEW YORK.

A Colored Medical Student. — Dr. William T. Merchant, a colored physician from West Virginia, came on to New York early in April to enter the Post-Graduate Medical School, but, on account of his color, it is said, he was not admitted; and after waiting for a number of weeks he sought the advice of Colonel Robert Ingersoll, who was authorized to take the case into the courts, if necessary. Colonel Ingersoll wrote a letter to Dr. Roosa, the President of the college, and the Faculty have now decided to admit Dr. Merchant.

Political Medical Appointments. — At the same time that Dr. Janeway resigned his professorship at Bellevue Hospital Medical College, he gave up his position as attending physician to Bellevue Hospital and consulting physician to the Board of Health. It is stated that his reason for this action was on account of his dissatisfaction at the partisan course, as he believes, of the Board of Health, in discharging without proper cause Colonel Prentise, for many years Counsel to the Board, and Dr. Ewing, the Sanitary Superintendent. As Bellevue College, as well as Bellevue Hospital, is to a considerable extent under the control of the municipal authorities, he desired to free himself from all connection with the latter. Dr. H. M. Silver has been appointed Demonstrator of Anatomy at Bellevue in the place of Dr. Briggs, promoted to the professorship of Materia Medica and Therapeutics.

Miscellany.

THE ABUSE OF COCAINE.

Norman,[1] in a paper in the *Journal of Mental Science*, on the subject of the cocoaine habit, comes to the conclusion that this drug is more insiduous than morphine. It fastens upon its victims more readily and its hold is at least as tight. It is treacherous, and easily produces break-down both in the moral and intellectual spheres. It is intensely toxic, bringing about destructive tissue change after a comparatively short period of abuse. In the last respect it differs from alcohol and morphine which may be long indulged in, in considerable quantities, without giving rise to serious structural change. In chronic cocaine poisoning marasmus appears early and develops with extreme rapidity; convulsions are not uncommon; and chronic poisoning in animals produces degeneration of the cells of the medulla and spinal cord, also in the nerve cells of the heart ganglia and in the liver cells. The great danger of cocaine lies in the fact that it is the most agreeable and alluring of all narcotics. It produces little or no headache and nausea, and a pleasant effect is produced with a comparatively small dose; but toxic symptoms are rapidly developed, and within three months of the commencement of the habit, there may be marked indications of degeneration.

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[1] Lancet, May 7.

METHYLENE-BLUE IN MALARIA.

In the Journal of March 3d, we referred to some experiments made by Dr. Thayer at the Johns Hopkins Hospital in which apparently striking results were obtained in malaria by the use of methylene-blue. Further trials of this drug have shown that it cannot be considered a substitute for quinine. Dr. Thayer's conclusions are as follows:[1]

Methylene-blue has a definite action against malarial fever, accomplishing its end by destroying the specific organism; but it is materially less efficacious than quinine, failing to accomplish its purpose in many cases where quinine acts satisfactorily.

The action appears to be rapid, the chills disappearing or the temperature, in the remittent cases, falling to normal during the first four or five days; but later, however, if a sufficient number of organisms have resisted the drug, they appear to develop again directly under its influence, causing a return of the symptoms.

Methylene-blue seems to have no advantages over quinine which would warrant its further use.

LEPROSY IN MINNESOTA.

Dr. Chr. Gronvald, in a short communication embodying the report of the committee on leprosy of the Minnesota State Board of Health, summarizes the results of that Board in the study and care of leprosy in the State. The disease exists in the State among the Scandinavians from infected localities.

There are medical correspondents everywhere in the State, who report all suspected cases to the State Board of Health, which then makes particular inquiries through its standing committee on leprosy, composed, since 1872, of the author and the Secretary of the Board. In 1891 there are eighteen lepers known to live in Minnesota, of whom ten had the anæsthetic and eight the tubercular form of the disease. All known lepers are registered and kept under observation, and all suspected cases carefully looked into. The history of these cases has been very thoroughly studied. No further isolation than the use of their own beds and utensils is required, and this their own good sense and that of their relatives, as a rule, secures. The State Board of Health and the local boards have abundant power to enforce the strictest isolation, if found needful; but there has not been any occasion for the use of such power, as the disease is limited to the immigrants, and has never appeared in the descendants of lepers, nor in any one born in the State. It is under constant and careful observation, and has been for the last eighteen years under the care of the State Board of Health.

Dr. G. A. Hansen, of Bergen, who in 1888 went to the Northwestern States to study leprosy among the Scandinavian immigrants, reported that of about 160 lepers who had immigrated into Wisconsin, Iowa and Minnesota, thirteen were known to be alive; and with perhaps a few exceptions, all the others were dead. Of all the descendants of lepers, and this includes the great-grandchildren of some, not a single one became leprous.

JOHN AMORY JEFFRIES.
RESOLUTIONS OF THE BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

The members of the Boston Medico-Psychological Society recognize, in the death of Dr. John Amory Jeffries, the loss of a valued associate and friend.

Bringing to the study of medicine a mind already trained in biological research, in the few years of his professional life he had made actual additions to medical knowledge, and, with the opportunities that were opening before him, he gave promise of much greater achievements. Medicine has lost one of its zealous and scientific students.

Although neurology was only one of the studies in which he was interested, he had already done work worthy to be compared with his investigations in bacteriology and ornithology. His last work was done for our Society, and we would express not only our personal loss but the loss which the medical profession has sustained by his untimely death.

In expressing our own sorrow at the death of one whose attainments were so high, whose promise was so great, whose zeal was so ardent, and whose friendship was so sincere, the Society would extend its sympathy to his family.

THERAPEUTIC NOTES.

Antipyrin and the Bacillus of Diphtheria:—Vianna[1] reports a series of experiments of antipyrin upon the Klebs-Löffler bacillus. In the proportion of two and one-half per cent., it prevents their development, and in five per cent. it kills them in twenty-four hours. As well as hindering the growth of the micro-organism, the author believes that it destroys the toxic properties of their products.

Hiccough and the Phrenic Nerve. — Leloir[2] reports excellent results in the treatment of hiccough by pressure over the left phrenic nerve. This is not a new method, but in the opinion of the author has not received proper attention. Digital pressure is made as long as is necessary in the interval between the heads of the sterno-cleido-mastoid muscle of the left side.

Hydrochloric Acid for Vomiting. — Alkiewicz[3] recommends small and frequent doses of hydrochloric acid, well diluted, for the treatment of vomiting due to various causes.

Lactic Acid as a Prophylactic of Gout. — Berenger-Ferand[4] describes this method which has recently attracted attention in France. The patient is given half a drachm of lactic acid a day for three or four weeks. It is taken in one dose in the morning. At the end of this time it is stopped for ten days, and then taken again in the same manner. This is continued for several months or even years.

The Anæsthetic Properties of Cocaine. — Bignon[5] calls attention to the fact that cocaine, in slightly acid solutions, loses much of its anæsthetic property, but this is entirely restored by neutralizing the acid. The maximum intensity of cocaine as an anæsthetic occurs when the alkaloid is suspended in a slightly alkaline solution. This may be accomplished by the use of carbonate of sodium, but this must be added at the time when it is used, otherwise the cocaine in suspension will collect at the bottom of the bottle and cannot easily be suspended again.

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[1] Johns Hopkins Hospital Bulletin, May.

[1] Bulletin Médical, March 30th.
[2] Acad. des Sciences.
[3] Nowiny Lekarskie.
[4] Bull. Gén. de Thérap., December 30th.
[5] Bull. Gén. Thérap., 1891, 170.

Influence of Purgatives on Bile. — Lowenstein [6] finds that aloes, rhubarb, cathartic acid, jalap, gamboge and podophyllotoxin do not increase the secretion of bile if given in large doses. Absence of bile in the intestine lessens the purgative effects of the last three drugs, and increases the effects of aloes and rhubarb.

To Measure the Capacity of the Stomach. — Forlanini [7] measures the capacity of the stomach by passing a sound and distending the organ with air introduced at a known pressure, about seven centimetres of water. The air is then withdrawn and its volume measured. By this method the result of treatment can be definitely ascertained.

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Correspondence.

VIRGINIA MEDICAL LAW.

We have received the following letter from the Secretary of the Medical Examining Board of Virginia, in regard to our note on the Virginia Medical Law which we corrected in the issue of May 12th :

Mr. Editor : — A quack from your city was recently prosecuted by the Medical Examining Board of Virginia, in the Hustings Court of this city, for practising without complying with the "law regulating the practice of medicine and surgery in Virginia."

The case was decided against the Board upon the ground that the law was *defective* in that it failed to make *specific* provision for the registration of certificates of non-residents. The Court distinctly affirmed the constitutionality of the law in a letter to the President of the Board, setting forth the basis and scope of the decision. I quote the letter (Judge S. B. Wills) above alluded to, bearing date of 14th April, 1892.

"(1) I decided that the Legislature of the State has a right to pass laws regulating the practice of medicine in this State. Such a law comes clearly within the police power of the States.

"(2) That the Legislature has a right to require non-residents to comply with the terms upon which it allows citizens of our own State to practice (129 U. S., Dent *v.* West Virginia).

"(3) That the Legislature, not having provided a place where the non-resident physician may record the certificate required by law as a prerequisite to obtaining a license for practising medicine, etc., has imposed upon him a condition which it is impossible for him to perform, and therefore, discriminates against him — such a condition amounting, in fact, to prohibition."

Such is the basis of this decision, and it cannot possibly apply in any other jurisdiction than that of the city of Richmond.

Some of the ablest lawyers of Virginia state that they believe the decision would be reversed by the higher courts.

This decision only applies to transients, and the law remains in full force with the single exception.

Very truly yours.
Jacob Michaux, M.D.,
Secretary of Board of Medical Examiners of Virginia.

A MEDICAL DIRECTORY HUMBUG.

Boston, May 23, 1892.

Mr. Editor : — A man is now going about this city ostensibly delivering some sort of a medical "Directory," and presenting an order blank for the same, bearing the ostensible signature of the physician. Attached to the same blank is the professional or visiting card of the physician called upon.

Careful examination of the slip shows that the price to be paid was two dollars, while this sum has been obliterated and in one corner of the slip the cost is $2.50 or $3.00. The sum to be collected has therefore been "raised" to this degree.

Yours truly, B.

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DANTE REPORTS A CASE.

Boston, May 21, 1892.

Mr. Editor : — Baudouin's case of the man with the remarkable anus, cited in the Journal of May 19, is not without a precedent, albeit a bad one. In the "Divine Comedy" we read of Barbariccia, leader of a band of demons :

> "Egli avea del cul fatto trombetta. . . .
> Nè gia con si diversa cennamella
> Cavalier vidi muover, nè pedoni,
> Nè nave a segno di terra o di stella."

> "He had made a trumpet of his rump. . . .
> But never yet with bagpipe so uncouth
> Did I see horsemen move, nor infantry,
> Nor ship by any sign of land or star."

K.

RECORD OF MORTALITY

For the Week ending Saturday, May 14, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,515,301	897	356	14.74	24.97	2.86	1.98	3.52
Chicago . . .	1,099,850	456	172	17.38	14.52	2.20	.88	6.82
Philadelphia .	1,046,964	443	140	8.97	10.81	4.60	1.61	4.07
Brooklyn . .	806,343	—	—	—	—	—	—	—
St. Louis . . .	451,770	178	95	7.28	15.68	2.24	.56	3.36
Boston . . .	448,477	210	65	11.52	16.32	3.36	.48	5.28
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	98	27	8.16	19.38	2.04	—	6.12
Cleveland . .	262,000	90	31	11.11	22.22	—	4.44	2.22
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	99	44	26.26	19.19	1.01	5.05	8.08
Milwaukee . .	240,000	97	47	16.38	11.33	3.09	1.03	7.21
Washington .	230,392	85	24	17.55	9.36	1.17	4.68	5.85
Nashville . .	76,168	23	6	17.40	8.70	—	17.40	—
Portland . . .	36,425	20	3	5.00	10.00	—	—	5.00
Worcester . .	84,655	25	11	24.00	12.00	4.00	4.00	—
Lowell . . .	77,696	31	12	25.84	12.92	—	16.15	6.46
Fall River . .	74,398	26	17	3.85	19.25	3.85	—	—
Cambridge . .	70,028	24	4	20.80	12.48	—	8.32	4.16
Lynn	55,727	24	4	20.80	12.48	—	8.32	—
Lawrence . .	44,654	26	8	11.55	7.70	3.85	3.85	3.85
Springfield . .	44,179	14	3	21.42	7.14	—	—	7.14
New Bedford .	40,733	16	5	6.25	6.25	—	—	—
Salem	30,801	5	1	—	—	—	—	—
Chelsea . . .	27,909	15	0	—	20.00	—	—	—
Haverhill . .	27,412	9	2	—	11.11	—	—	—
Brockton . .	27,294	5	1	20.00	20.00	—	—	20.00
Taunton . . .	25,445	3	1	66.66	—	33.33	33.33	—
Gloucester . .	24,651	7	2	14.28	42.84	14.28	—	—
Malden . . .	23,031	7	3	14.28	—	—	—	—
Fitchburg . .	22,037	2	0	—	—	—	—	—
Waltham . .	18,707	6	2	—	16.66	—	—	—
Pittsfield . .	17,281	3	1	—	33.33	—	—	—
Quincy . . .	16,723	4	2	50.00	—	—	—	50.00
Northampton .	14,990	4	2	25.00	—	—	—	25.00
Newburyport .	13,947	11	3	18.18	18.18	9.09	—	9.09
Medford . . .	11,079	5	0	20.00	—	—	20.00	—
Everett . . .	11,068	2	0	50.00	—	—	—	—
Hyde Park . .	10,193	4	0	—	—	—	—	—
Peabody . . .	10,158	4	0	—	—	—	—	—

Deaths reported 2,968: under five years of age 1,094; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 433, acute lung diseases 517, consumption 343, diphtheria and croup 143, scarlet fever 80, diarrhœal diseases 60, measles 45, typhoid fever 44, cerebro-spinal meningitis 19, whooping-cough 15, puerperal fever 12, erysipelas 8, malarial fever 5, small-pox 2.

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[6] Bull. Gén. Thérap., November 15, 1891.
[7] Rif. Med., October 24, 1891.

From measles New York 36, Chicago 5, Milwaukee 2, Cleveland and Pittsburgh 1 each. From typhoid fever Chicago 16, Pittsburgh 11, Philadelphia 8, New York, Boston and Washington 2 each, St. Louis, Lowell and Cambridge 1 each. From cerebro-spinal meningitis New York 7, Worcester 4, Lynn 3, Washington 2, Chicago, Boston, and Cleveland, 1 each. From whooping-cough New York 7, Chicago, Philadelphia and Milwaukee 2 each, New Bedford and Malden 1 each. From erysipelas New York 2, Chicago, St. Louis, Boston, Cleveland, Milwaukee and Washington 1 each. From small-pox New York 2.

In the twenty-eight greater towns of England and Wales with an estimated population of 10,188,449, for the week ending May 7th, the death-rate was 19.7. Deaths reported 3,841: acute diseases of the respiratory organs (London) 297, measles 237, whooping-cough 152, diphtheria 43, scarlet fever 42, diarrhœa 41, fever 25.

The death-rates ranged from 14.3 in Halifax to 28.3 in Sunderland; Birmingham 19.0, Bradford 18.5, Croydon 17.2, Leeds 19.2, Liverpool 24.2, London 18.9, Manchester 18.4, Nottingham 16.0, Portsmouth 19.5, Sheffield 22.8, West Ham 17.3, Wolverhampton 18.7.

METEOROLOGICAL RECORD,

For the week ending May 14, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 8	30.04	50	60	40	53	49	51	N.W.	N.W.	20	8	F.	F.	
M.. 9	30.20	54	57	50	71	51	61	N.E.	W.	14	12	C.	C.	
T..10	30.14	52	58	47	46	53	50	N.E.	S.	9	12	C.	O.	
W. 11	29.66	52	57	46	78	97	87	S.E.	N.W.	9	8	O.	O.	.49
T..12	29.88	50	52	47	80	77	78	N.	S.E.	7	8	O.	R.	.01
F..13	30.19	50	54	47	87	69	78	N.	S.E.	5	7	O.	C.	.05
S..11	30.36	58	67	49	61	75	68	S.W.	S.	7	12	F.	F.	
☞	30.06	52	58	46	68	67	68			10	8			.08

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 14, 1892, TO MAY 20, 1892.

A board of medical officers to consist of Lieut.-Col. William H. Forwood, surgeon; Major Joseph R. Gibson, surgeon; Captain Henry S. Turrill, assistant surgeon, is appointed to meet at West Point, New York, June 1, 1892, or as soon thereafter as practicable for the physical examination of the cadets of the graduating class at the U. S. Military Academy and such other cadets of the academy and candidates for admission thereto as may be ordered before it.

The leave of absence granted Major James P. Kimball, surgeon, U. S. A., is extended one month.

Leave of absence for two months to take effect June 25, 1892, or as soon thereafter as his services can be spared, is granted First-Lieut. Henry A. Shaw, assistant surgeon, U. S. A.

William N. Suter, assistant surgeon, U. S. A., to be assistant surgeon, with the rank of Captain, May 16, 1892, after five years' service in accordance with the Act of June 23, 1874.

First-Lieut. Theodore F. DeWitt, assistant surgeon, U. S. A., resigned May 16, 1892.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 21, 1892.

S. W. Horwitz, medical director (retired), granted six months' leave to go abroad.

P. A. Lovering, surgeon, detached from U. S. S. "Philadelphia" and granted two months' leave of absence.

R. P. Crandall, passed assistant surgeon, detached from the Naval Laboratory, Brooklyn, N. Y., and to the U. S. S. "Philadelphia."

E. S. Bogert, Jr., assistant surgeon, detached from C. S. S. "Blake" and to the Naval Laboratory, Brooklyn, N. Y.

J. A. Guthrie, assistant surgeon, detached from Port Royal Station, S. C., and to C. S. S. "Blake."

H. C. Eckstein, surgeon, granted leave of absence for six months.

MASSACHUSETTS MEDICAL SOCIETY.

One Hundred and Eleventh Anniversary.

Meetings will be held in the building of the Massachusetts Charitable Mechanic Association, on Huntington Avenue, Boston.

Tuesday, June 7, 1892.

Section in Medicine, 2 p. m. — "The Relations of Bacteria to Influenza," by Dr. Henry Jackson, of Boston. "Pneumonia in the Recent Epidemics," by Dr. W. E. Fay, of Boston. "The Nervous and Mental Sequelæ of Influenza," by Dr. P. C. Knapp, of Boston. "A Revision of the Medical Nomenclature Employed in the Vital Statistics of Massachusetts," by Dr. S. W. Abbott, of Wakefield. Drs. R. H. Fitz, C. F. Folsom, A L. Mason, J. H. McCollom, J. J. Minot, F. C. Shattuck, G. B. Shattuck, will take part in the discussions.

Section in Surgery, 2 p. m. — "Bacteriological and Clinical Investigations into the new Antiseptic Dermatol," by Dr. A. K. Stone, of Boston. "The Diagnosis and Treatment of Pott's Fracture of the Ankle," by Dr. L. A. Stimson, of New York City. Discussion by Dr. H. L. Burrell and others. "Acute Intestinal Obstruction: The Symptoms and Diagnosis," by Dr. F. C. Shattuck; "The Surgical Aspects," by Drs. John Homans, J. C. Warren, G. W. Gay, M. H. Richardson, J. C. Irish, A. T. Cabot.

Section in Obstetrics and Gynecology, 2 p. m. — "Résumé of 100 Cases at the Knowles Maternity, Worcester," by Dr. G. O. Ward, of Worcester. "Alexander's Operation," by Dr. W. M. Conant, of Boston. "Hydatidiform Moles," by Dr. G. A. Craigen, of Boston. "The Treatment of Inflammatory Diseases of the Fallopian Tubes, with Cases," by Dr. Edward Reynolds, of Boston.

The Shattuck Lecture, 8 p. m., by J. F. Alleyne Adams, M.D., of Pittsfield.

Wednesday, June 8, 1892.

At 9 a. m. — "The General Practitioner as a Gynecologist," by Dr. W. H. Pierce, of Bernardston. "An Outbreak of Trichinosis in Colerain," by Dr. F .H. Drew, of Shelbourne Falls. "The Treatment of Compound Fractures by Modern Methods, with a demonstration of 'putting up' adapted to private practice," by Drs. H. L. Burrell and E. W. Dwight, of Boston.

The Annual Discourse, 12 m., by Frank W. Draper, M.D., of Boston.

RHODE ISLAND MEDICAL SOCIETY ANNUAL MEETING.

The eighty-first annual meeting of the Rhode Island Medical Society will be held in Tillinghast's Assembly Rooms, 235 Westminster Street, Providence, on Thursday, June 2, 1892, at 10 o'clock, a. m. The Annual Address by the President, Dr. William H. Palmer, at 12.30. The annual dinner will be served in the adjacent hall, The Trocadero, following adjournment. Dinner tickets can be obtained of the Treasurer, Dr. George L. Collins. W. R. White, M D., *Recording Secretary*.

REDUCED RATE TO DETROIT.

The Boston and Albany Railroad will make rate of fare and one-third on the certificate plan from all coupon ticket stations to Detroit and return on account of the meeting of the American Medical Association. Tickets giving purchasers the benefit of reduction may be purchased June 3d to 7th inclusive. The rate per berth in sleeping car from Boston to Detroit is $4.50. For sleeping-car reservations and full information in relation to train service, etc , address J L White, City Passenger Agent, 232, Washington Street, or A. S. Hanson, General Passenger Agent, Boston, Mass.

RECENT DEATHS.

John Messenger, M.D., died in New York, on May 19th, at the age of seventy-three. He was born in Vermont and graduated from the College of Physicians and Surgeons, New York, in 1852.

Myron N. Babcock, M.D., of Saratoga Springs, N. Y., died May 21st, aged seventy-three.

Alvin Jenkins, M.D., M.M.S.S., died in Great Falls, N. H., May 3, 1892, aged seventy-nine.

Wilhelm Braune, M.D., Professor of Anatomy in the University of Leipsic, died April 29th.

Original Articles.

SOME OF THE RECENT ADVANCES IN BACTERIOLOGY.[1]

BY H. C. ERNST, M.D.,
Assistant Professor of Bacteriology, Harvard Medical School.

The amount of time that has been devoted to the solution of the various problems presented by our increasing knowledge of the micro-organisms is easily accounted for by a glance at what the development of this knowledge seems to promise. In the first place, the theories that are the result of the work already done, furnish, what appears to many to be, the first rational explanation of what the infectious diseases are, how they are propagated, and suggest many ways by which they can be combated.

Theory, inference, and experiment all show with apparent conclusiveness that the micro-organisms are concerned in the production of many, if not all, of the infectious diseases. To deny such a conclusion at the present time, is to deny the power of the logical sequence of events to prove a case, and such a denial is nowhere, I believe, seriously attempted by any with sufficient training to speak with authority.

In searching for an explanation as to how the bacteria accomplish the results that are daily seen to be the result of their growth, these are the methods usually accepted; (1) By mechanical action; that is to say, the growth of the invading organisms to such an extent, and with such rapidity, as to block up or cut off the natural channels of communication with the affected part. Such an effect may be seen in many of the preparations from parts attacked by the bacillus of anthrax. (2) By such vigorous growth and strength of attractive power as to appropriate to themselves, and take away from the tissue-cells, the nutrition intended for the latter; as a result, producing a destruction of the tissue-cells by the process called necrosis. This effect is seen as the finish of the change in tuberculosis. (3) By the production, either directly, or by the combination of the elements remaining after the bacteria have taken what may be necessary for their development, of new basic compounds that play an exceedingly important part in the production of the harmful effects of disease, or, as is becoming more evident every day, in guarding the system from further invasion and protecting it from a future attack of the same disease.

It cannot be said that we have yet come to understand the action of these new compounds; but certainly a beginning has been made, and it is to some of these beginnings and the results that seem to be promised that I wish to call attention.

The general knowledge already obtained has taught an almost inestimable amount of important fact to the scientific mind, and has put preventive medicine upon a sound basis that has not belonged to it before. It may almost be said that if the knowledge we already have might be universally and intelligently applied, the problem of stamping out infectious disease would be solved; but such an application is impossible for many reasons, and it probably never will be so. It is not possible so to appeal to the average mind, that the isolation and strict treatment of a dear friend, even suffering from an acknowledged infectious disease, will be allowed or bearable, and it is necessary, therefore, to search for something more.

This further advance has been in the minds of all those connected with the later methods of experimentation, and lies in the direction of attempts to prevent the appearance of the symptoms of an infectious disease after exposure to its virus or the arrest and cure of those symptoms after they have made their appearance.

Such attempts have, of course, been made from the time when medicine began, but have met with the smallest amount of success, so far as the use of drugs, as the term is commonly used, is concerned. The first efforts, with a knowledge of the bacteria and their action as a basis, were those in which the attempt was made to secure the attenuation of the virus of the disease, and then applying this modified virus in an attack against the full disease. The idea underlying this is the substitution of a disease of a milder type for that of the full strength, the attack of the milder form being supposed to protect the system against the more virulent. This effort had been successfully carried out for years in the common vaccination against small-pox, in which case a disease of a similar type (cow-pox) is substituted for the far more fatal and disfiguring one of small-pox. Nature furnished the milder form of the disease, and the virulent as well, and accident showed the proper method of combining them; in the series of experiments of which I now speak, Nature also furnished the virulent disease, but it has been sought to *create* a milder type that would afford protection against the stronger.

Such attempts have been carried on with much enthusiasm, and with, at least, partial success in such diseases as anthrax (called malignant pustule in man) and rabies. They represent the direction in which the efforts of Pasteur and his followers were earliest turned; and the success obtained, together with the facts revealed in regard to disease, urges their continuance. They have not thus far, however, seemed to define any general principle upon which further work may be based, nor do their results seem to serve for a foundation for reasoning, except in regard to the individual case that the experiments cover.

The further development of our knowledge has led to experiments in a different direction; and, as a result of these, came the application of Koch's remedy, tuberculin, the work with which made so much excitement during the last year. This material is obtained from a different source, and illustrates a different principle from any of the preceding. It is the product of growth — not of the bacilli themselves — and consists essentially of the nutrient material in which the bacteria have grown, freed by filtration from the bacteria, but containing all the new elements that have resulted from their growth. The unfortunate necessity for a premature trial of this material has clouded the results and prejudiced the judgment of many observers so that its true value is not yet by any means worked out.

So far as actual cure of the disease against which it is directed, little has been accomplished by its use; which is not surprising when we remember that, as used, it was in its crudest form and made up of many ingredients the nature of which is but just becoming recognized. There are many points in regard to it still to be worked out; the hurtful ingredients are to be separated, and the healing agency, if present, to be isolated and tried, before this method of reaching the end in view is to be thrown aside as useless. As it is, there seems to be strong reason to feel that it may serve as a valuable aid to diagnosis in the early stages of the disease, especially in cattle,[2] as a recent writer points out after a complete review of all the reported experiments in this particular direction; and it certainly appears from the more recent records that a certain amount of definite good has been accomplished in the actual treatment of tuberculosis with it.

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[1] Read before the Boston Society of Natural History.

The employment of this material illustrates the second method by means of which it has been sought to secure curative effects in infectious disease; that is, by the application of the products of bacterial growth in the laboratory, to the destruction of the organisms that produced them, or at least to the arrest of the development of these organisms.

But certain facts shown by experiment several years ago, and constantly developed since that time, have put inquiries upon a new track, one which forms the third branch of the inquiry, and that seems to promise much as the result of its intelligent following out.

It is upon these facts that the newer theories in regard to immunity depend, and it is to the application of what is learned in forming these theories to the treatment of disease that especial interest lies.

It is a long time since the theory that immunity might be due to the presence of a deterrent substance in the blood entered the minds of scientific men, — this substance being something that would prevent the growth of the invading bacteria,— but it has been an exceedingly difficult matter to secure evidence upon such an important point. The first experimental researches were negative (Grawitz and Gamaleia); but, in 1884, Grohmann showed that fresh serum exerted an attenuating influence upon the bacilli of symptomatic anthrax; Fodor found that fresh blood destroyed them; while Nuttall established the fact that organic fluids (like serum, aqueous humor, pericardial fluid), really possessed the power of destroying bacteria, and that this germicidal action was taken away by raising these fluids to a temperature of above 50°C. Buchner showed that this power rested solely in the serum, and that the breaking up or mixing in of the blood-corpuscles masked or diminished its activity. He also showed that repeated freezing divided the serum into layers of which the lowest was the most active against bacteria; that this power of the serum is destroyed if diluted with distilled water or if it be dialyzed against it. After Buchner, the most important work has been done by Ogata and Iasuhara, and Behring and Kitasato in showing the great influence of the fluid portions of the animal tissues in the acquisition of immunity. According to the work of these authors, immunity is due to the action of albuminoid substances, called by Hankin, defensive proteids, which have the power of destroying pathogenic bacteria, of attenuating them, and of destroying their toxic products.

It is necessary that one should have a clear idea of these defensive proteids to understand what extreme importance is to be attached to their discovery and the prosecution of researches upon them.

First, in regard to "germicidal proteids." Certain animals have in their blood and the other fluids of the body substances endowed with a very considerable germicidal action; and an example that has been better studied than some others is found in the blood of the white rat. These animals are refractory to inoculation with anthrax, and the reason for this immunity to so virulent a disease has been found (Behring), to exist in the fact that the animal's blood-serum destroys the bacterium. By comparative tests, it was shown that two and a half cubic centimetres of rat's serum would have the same germicidal action as would the same quantity of corrosive sublimate in the strength of 1 to 1,000, or of carbolic acid 1 to 50. To appreciate this, it is necessary to consider another quality, the toxic action of these materials upon the animals; when it appears that the sublimate and carbolic acid will kill the animal in a dose five to seven times smaller than is necessary to secure their germicidal action and cannot therefore be thought of for internal antisepsis, whilst the germicidal proteid is present in quantity sufficient for its perfect activity in the serum of the perfectly healthy white rat. This is the most striking and valuable property of these defensive proteids, — that they are the least toxic of all germicides known, leading up to the far more important fact that it seems possible to employ them in active measures for the treatment and cure of infectious disease.

Many points are still to be made out; for instance such an apparent contradiction as that the serum's germicidal power does not in all cases correspond with the natural immunity of the animal that furnishes the serum, but thus far investigation has only served to show that these apparent discrepancies can be easily explained.

The second class of these proteids is made up of the "attenuating" varieties, the existence of which was first suggested by the fact that the bacteria of symptomatic anthrax were attenuated in virulence when injected into animals refractory to the disease, at the same time that their vitality was not interfered with. It is to the work of Ogata and Iasuhara that we owe the first experimental determination that this attenuating property lay in the serum of the animals experimented upon, and not elsewhere. Such an attenuating action upon bacteria would explain very naturally the immunity of the animals in whose blood it was found; and the authors by further experiment showed that this property remained to the serum *after* its removal from the body of the animal in which it was formed, and could be made to serve as a retarding influence, and even as a curative agent, in animals inoculated with true anthrax.

The existence of these attenuating proteids has been confirmed by other observers in the case of anthrax and in other diseases, and the establishment of the facts would be exceedingly important if this were all; but further research has shown the existence of a third class of these proteids. We know now, not only that there are germicidal and attenuating, but also "antitoxic proteids"; and their discovery is the most important of all. The former classes act directly upon the bacteria themselves, — either by actually destroying them or by so limiting their development in the animal body that their growth becomes a matter of slight moment as affecting the health of the individual attacked.

The first announcement of results in this direction was made by Behring and Kitasato, in 1890, at the time of the excitement in regard to tuberculin, and was so overshadowed by this excitement that their true importance was but tardily recognized. They had found that the blood of rabbits protected against tetanus had the power of destroying the toxic alkaloid of tetanus, tetanin, in the lifetime of the animal attacked, and that by the application of this fact it was not only possible to protect an animal against an inoculation of the tetanus bacilli, but also to *cure* it after this inoculation and the appearance of the symptoms of the disease.

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[2] See Eber's article, Cent. f. Bact., 1892, p. 263.

The importance of such results, especially as they have been repeated and confirmed by independent observers, can hardly be overestimated. They mean an absolute revolution in our ideas, and a possibility of reaching the long-sought goal, — the successful treatment of diseases that have heretofore compelled the attendant to stand helpless before their progress.

Almost in the same week with the announcements of Behring and Kitasato with reference to tetanus, came those of Frænkel and Brieger upon diphtheria. Tizzoni and Cattari have completely confirmed the work upon tetanus; and, if later reports can be trusted, the method of cure has been successfully applied in man in six cases of tetanus (lock-jaw) that there is no reason to suppose would have terminated otherwise than fatally, as such cases almost invariably do.

Similar results have been obtained in animals in the case of some of the suppurative bacteria,— in anthrax, in swine-erysipelas; and the variety and extent to which experiment must go in the elucidation of the points brought up by these new facts is almost unlimited. At the same time, there is more reason than ever to feel that investigation is upon the right track, and that finally the promise that now looks so fair, will be fulfilled, and that there will be means secured at last for the successful combating of the effects of the most virulent of the diseases of modern times. For, as will be readily seen, we have at last caught sight of materials, effective for the destruction of the bacteria or their toxic products, that at the same time will leave the animal tissues unharmed after their application. Thus far, we have been able to employ for such a purpose, only materials that were in themselves destructive to the vital organism, and the remedy when effectively employed has been worse than the disease.

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THE THIRD YEAR OF THE INFLUENZA EPIDEMIC.[2]

BY J. B. AYER, M.D.

I FEEL that no apology is needed for presenting the often-discussed subject of influenza believing that every contribution of facts *made at the time*, which a discussion brings out may be of value to us and to future students of the epidemic.

We are grateful to Dr. Rush for his description of the epidemic as he saw it in Philadelphia a century ago; and we regret that his contemporaries did not write out their experiences for our benefit.

Dr. Rush stated that epidemic influenza visited Philadelphia in the autumn of 1789 and lasted six weeks. It relapsed in April, 1790, but less severely, and remained till the early part of June. It finally disappeared the following winter in the form of a mild relapse.

Now, a century later, it had been predicted by the profession as well as the laity that a reappearance of epidemic influenza in this — the third year — would not be a serious matter. On the contrary, however, its course has been severe, and it has proved disastrous in many of our homes.

Influenza, in this neighborhood, became epidemic about December 20, 1889, lasting more than seven weeks. It relapsed about January 1, 1891, and continued till the early part of June. The present relapse began early in December, 1891. Since the middle of February there have been very few new cases, but yet in March, there was still sufficient evidence of its presence in our midst.

The mortality statements of the city of Boston show that the first attack was most fatal between December 28, 1889, and January 18, 1890; the second attack was most dangerous to life in May, 1891; the third attack (the present relapse) showed the greatest number of deaths between December 6, 1891, and January 30, 1892.

The disease has not been entirely absent from our midst (in all probability), since December, 1889, although for successive months sporadic cases only have been present.

What have been the characteristics of the different attacks?

In past epidemics of influenza, the symptoms have been dissimilar. Dr. Rush, in his account, says: "It was remarkable that those who had the disease chiefly in the breast last year, complain now chiefly of their heads; while those whose heads were affected formerly, now complain of their breasts."

The epidemic, as we have seen it, has shown a diversity in the relative importance of the neuro-muscular, respiratory and gastric symptoms in the different attacks.

The first attack was pandemic and acute. The analysis made by Dr. Clouston showing that 97 per cent. suffered from neuro-muscular symptoms, 77 per cent. from respiratory symptoms, and 55 per cent. from alimentary symptoms was perhaps applicable to cases in this vicinity; the neuro-muscular symptoms being the most prominent and causing most suffering.

The second attack, which came in the form of a relapse a year ago, did not attack the whole community at once, but occupied more time in seeking out its victims. There was perhaps no alteration in the proportion of the three classes of symptoms, for the neuro-muscular type was still the prominent one, but its symptoms were less acute and more prolonged. The depression of the nervous system and the accompanying and subsequent exhaustion were the marked features at this time. Neurasthenia, with depression of spirits, apprehensiveness and mental instability stood out in such broad relief in cases noticed last spring that many German authors described influenza as a *Nervenkrankung.*

The present attack (second relapse), which started at the beginning of the third year, has been marked by increased importance of the respiratory symptoms. My notes of patients who have recently undergone a second or third attack show a decided change in type. It seems to me that the respiratory symptoms are now relatively more prominent than neuro-muscular symptoms have been in the past.

We will briefly consider the symptoms of the present attack:

(1) *Neuro-Muscular Symptoms.* — Very few patients have suffered from influenza this year without being conscious of muscular and neuralgic pain. Migraine, sciatica, lumbago, and pleurodynia have been com-

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[1] Read before the Boston Society for Medical Observation, March 7, 1892.

mon; delirium, meningitis, and a tendency to the psychoses have not been entirely absent, but, on the whole, the nerve symptoms have not been sufficiently severe to impress the observer with the theory that influenza now is essentially a "nerve disease."

There has been less depression of spirits and less worry. The apprehensiveness I have seen this year has not been an unmixed evil, as it has caused patients to take proper care of themselves, and to follow implicitly the physician's advice regarding confinement to the house.

Irregularity of the heart's action of nervous origin has, perhaps, been more prominent this season, and also spasmodic cough, which will be mentioned later.

Again, this year, I have noticed a tendency to persistent localized pain from very slight accidents.

(2) *Respiratory Symptoms.* — We feel that catarrhal irritation of the upper air passages has been the most prevalent form, although from the middle of December to the end of January it seemed almost impossible among the elderly and debilitated to keep the catarrhal trouble from extending to the lungs, and there were at that time numerous cases of acute bronchitis and pneumonia, dangerous from the outset.

The symptoms in the majority of cases, however, has been those of laryngitis, tonsillitis and bronchial catarrh. I have seen less extension of catarrhal symptoms to the middle ear or to the nasal fossæ. Hoarseness of several days' duration, the feeling that there is a "lump in the throat" causing slight dyspnœa, and a harsh, hacking, spasmodic cough have been the causes of frequent complaint.

As with this cough one rarely finds important signs in the chest on physical examination, it is necessary to consider these symptoms as partly catarrhal and partly nervous in character. I saw a marked case of neuro-respiratory symptoms early in the present relapse, where there was "constriction of the chest" coming on suddenly, and often waking the patient out of a sound sleep with dyspnœa and spasmodic cough.

(3) *Alimentary Symptoms.* — In looking over my cases I have been surprised to find how little prominence has been shown by gastro-intestinal symptoms of late. In very few cases was vomiting present at the outset, and with only one patient was gastric irritability the most prominent symptom throughout the attack, and here I suspected the existence of organic disease of the stomach. In several cases, however, there was bilious vomiting during some portion of the attack.

Intestinal diarrhœa was noted in a few cases only, and in none was it an important symptom.

I feel that the relative importance of symptoms connected with the digestive canal has been much diminished of late.

Immunity. — There seems to be no rule as to the susceptibility to repeated attacks. The majority of the members of this community have not suffered from three distinct attacks of epidemic influenza, and a goodly number have never been affected.

Susceptibility of Age and Sex. — Elderly people, although they have suffered more severely from the effects of this year's epidemic, may not necessarily have been attacked in larger proportion than in preceding years. In a home for aged people in this city all the inmates, twenty-one in number, were attacked last spring, thirteen of them severely, but all but three escaped this year's attack.

Foreign writers have stated, that a larger proportion of children have suffered from influenza during the present season. It does not seem to me that this has been the case in this neighborhood, although sixteen deaths from influenza under the age of five years have been reported during the last three months in this city.

It has also been stated, that a much larger proportion of women has been attacked during the present relapse, and the mortality-rates of the city would seem to confirm this statement. I think I have seen a like number of cases in both sexes.

Ruhemann, in Berlin, makes the statement that those whose occupations obliged them to be in the open air — soldiers, letter-carriers, policemen, firemen and doctors — were more susceptible the first year; but that now a much larger proportion of those with indoor occupations (especially women), are affected.

Febrile Disturbances. — Probably few cases of late have been ushered in by a well-marked chill, but chilly sensations lasting several days have been frequently noted. High temperatures at the outset have not been common except with acute lung trouble. A temperature of 106.2° was noted in one case at the very outset, which proved fatal in thirteen hours, from pulmonary congestion. In most cases of late, the thermometer has been principally valuable in indicating the new phases in the progress of the case.

Suddenness. — Unlike the epidemic attack of two years ago it has been rare for severe symptoms to appear at the onset. We have seen very few patients suddenly *struck down* by the epidemic. Convulsions have been rare at the outset.

Eruptions. — Probably there has been less erythema, erysipelas, and herpes zoster than in previous attacks. Authors have referred to the puzzling difficulty in making an early diagnosis between some cases of influenza and scarlet fever. I saw recently a very irritable child suffering from influenza with severe throat symptoms, where there was at times a suspicious redness of the skin, which, however, was found to disappear when the child could be examined in sleep.

Chronic Cases of Influenzal Origin have not necessarily been unfavorably influenced by the recent relapse. — I can mention, in proof, a severe case of neurasthenia and sciatica, of over two years' standing, where the greatest gain has been made during the past season.

I see frequently a patient who has suffered severely with muscular and articular rheumatism since he was taken down with influenza December 25, 1889, but who has improved more rapidly during the past winter than in any time during the past two years.

A patient with albuminuria following painful influenza of the neuro-muscular type has been under my observation twenty-two months. His debility and prostration have left him, and he is able to work, as a jig-sawer, his full time daily; but the urine still contains a trace of albumin and a few casts and occasionally a decided trace of sugar. He has no symptoms of kidney disease, and during the past winter has been as well and as strong as ever.

These three patients were all of middle age and were not attacked by the recent relapse of influenza.

Recurrence and Persistence of Symptoms. — There has been a marked tendency to recurrence, and we have never felt certain that the disease has taken its farewell of the patient. There has been so much exhaustion that progress, when uninterrupted, has been very slow — especially in elderly and feeble patients. Many patients have sent for their physician merely to ask, "Why don't I improve more rapidly?" but the delay in recovery does not seem to depress them so much it as did last year, and they are not unhappy, when they are told they must be content, with a slight gain from week to week.

Prognosis, like everything else connected with influenza, has been uncertain. Many of my cases have turned out unexpectedly well, the danger which seemed imminent from threatening cardiac failures and intense prostration having generally been overrated.

In Regard to Treatment, I wish to say but one word — in favor of oxygen in the acute pulmonary affections of the asthmatic type.

OPERATIVE TREATMENT FOR THE RELIEF OF CHRONIC SUPPURATIVE AFFECTIONS OF THE MIDDLE EAR: REPORT OF THREE CASES.[1]

BY FREDERICK L. JACK, M.D.,
Assistant Aural Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

Chronic suppurative inflammation of the attic of the tympanic cavity may justly be considered a serious trouble. Especially is this true if the disease begins during childhood and continues for a long period. In many instances caries of one or more of the ossicles, is present, with or without disease of the bony walls of the attic, and the small space in the cavity is crowded with granulation-tissue or polypoid growths, causing defective drainage and consequently retention of septic matter. Exacerbations are in many cases frequent, and at these times the possibility of extension of the middle ear inflammation to the meninges of the brain or mastoid antrum in a constant source of danger. In the majority of instances the hearing power is practically gone, but a point of far greater importance is the danger to life itself. Indeed, a fatal termination is to be expected in a considerable number of these cases. In the light of what has been demonstrated within a few years, and realizing the possible effect of neglecting or ineffectually treating such a trouble, does it not seem somewhat surprising that the disease is allowed to progress unchecked when surgical interference has proved very successful in the majority of instances? The result of the operation has been either rapid cure or at least such improvement as to make the disease amenable to after-treatment.

I desire, therefore, to call attention to what has been done in aural surgery towards the relief of this class of almost hopeless cases. I believe it to be of general interest, for the rule of procedure is the common-sense surgical one of removing diseased bone or whatever obstruction is found to free drainage.

As far back as 1877, Dr. Kessel, of Jena, published the report of a case in which he removed the drum membrane, malleus, incus and stapes.[2] He cited this case to show that the ossicles could be removed without danger. As to the pathology of the affection, Professor S. Moos, of Heidelberg, is of the opinion that the hammer is most frequently affected, and that often before caries can attack the anvil, it is exfoliated, being loosely held in place by the adjoining ossicles and tissues. The stapes is most rarely affected. He further states that he has never observed or seen described a case of primary caries of these bones; that the mucous membrane must first be diseased before caries can attack the ossicles.[3]

On July 20, 1886, Dr. Samuel Sexton, of New York, in a paper read before the annual meeting of the American Otological Society, described "A New Operation for the Radical Cure of Chronic Purulent Inflammation of the Middle Ear Tract." Previous to that, a paper written by Dr. Schwartze, in 1885[4] gives a *résumé* of the literature of operations on the transmitting mechanism of the ear. Since that time the application of this line of surgery has developed very rapidly.

I have endeavored to summarize the results in the few recorded cases since Schwartze's paper in 1885; and I add the report of three cases operated upon by myself for chronic suppuration of the middle ear.

In 1887 Dr. Sexton reported nineteen cases of this disease, with results as follows: In five cases a cure took place in less than one month; in two cases, in two months; in two cases, in three months; in one case, in six months. In five cases, still under observation, there was slight improvement; in three cases[5] still under observation, there was no improvement; in one case the treatment was not continued. He does not mention in any case the duration of the otorrhœa, except in a general way, that it had long continued. The malleus alone was removed in six cases and the malleus and incus in ten. He estimated that the hearing power was increased from 75 to 100 per cent. in the cases cured.

Dr. Burnett, of Philadelphia, before the American Otological Society last July, reported a case of seven years' duration in which he excised the drum membrane and malleus. In thirteen days the discharge from the ear ceased. Three months from the time of the operation a cicatricial membrane was found over the promontory. No discharge. Hearing increased from nothing to whispered words at fifteen feet.

In my search for information as to the frequency of purulent inflammation of the superior portion of the tympanic cavity, I found, in a paper by Dr. Alexander Randall, of Philadelphia, "Notes on the Shrapnell Perforation,"[6] a total of 120 cases among ten thousand patients — somewhat small number. If, however, to this number is added those cases with perforation of the drum membrane, my impression is that the number would be largely increased.

From 1885 to 1890 inclusive, there were treated at the Massachusetts Charitable Eye and Ear Infirmary for chronic purulent middle ear disease 3,795 cases out of 21,818 patients applying for treatment. Among 8,337 of all cases seen in the last two years, from 1889 to 1890 inclusive, there were noted 1,020 patients with chronic purulent trouble, and of these 94 cases of perforation of the flaccid membrane, — almost 10 in every 100 cases. This is practically the same ratio per thousand for all ear patients as that reported by Dr. Randall, and illustrates the relative frequency of this affection in suppurative middle ear disease.

Although without statistics to substantiate any figures, my memory leads me to believe that in a large proportion of the cases of suppuration, under my observation, the disease was confined to the attic or superior portion of the tympanic cavity. Most of the writers on this subject have advised the removal of the drum membrane together with the diseased ossicles. As the membrane forms a natural protector of the tympanic cavity I am impressed with the importance of exposing as little as possible of the mucous membrane to the effect of cold or what by chance may find its way into the ear. The cicatricial tissue closing the opening has been shown to form in many instances a vibrating surface capable of transmitting its movements to the stapes. Where the incus remains, its long process, through contact with this tissue, increases the hearing power, and in a measure also protects the delicate mucous membrane beyond. In my limited experience with this operation, but somewhat wider observation of the work accomplished by others, I have failed to find any evil effects which could be attributed to the operation, whereas the results obtained, both as regards effecting a cure and improving the power of hearing, have been extremely favorable. I believe that in all these cases every effort had been previously made in the way of both vigorous and mild treatment. I wish, however, in no way to be understood as advocating operative interference even when rough bone is demonstrated until the usual treatment has been thoroughly tried.

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[1] Read before the Boston Society of Medical Observation, March 7, 1892.

[2] Archiv. f. Ohrenheilk, vol. xlii.

[3] Archives of Otol., March, 1885.

[4] Deutsche Chirurgie, Stuttgart.

[5] In two of these cases suppurative inflammation seemed to continue in one because of caries of the acute, and in the other in consequence of the retention of the incus which could not be found.

[6] American Otological Society, 1890.

I might say in regard to the instruments necessary for the operation, that a series of triangular-shaped knives, bent at various angles, seemed sufficient for most of the tissues necessary to be separated. A case of Schwartze's curettes enables the walls of the attic to be cleared of granulation-tissue, great care being necessary in case of caries not to enter too far, the anatomy of the parts to be kept clearly in mind all the time. The ear must be perfectly illuminated, during the operation. In addition, a small pair of ear forceps for removing the completely excised ossicles is especially to be recommended, as it is more easily directed by the hand and less likely to do harm by undue force. A small olive-tipped probe is very necessary in determining the location and extent of the disease. A small hook is also useful in finding any adhesions which may remain after the operation. They should all be separated before attempts are made to remove the ossicles. All antiseptic precautions were carefully observed. Cocaine has proved a valuable aid in clearing from bleeding the very small field of operation. For the steps in the operation there is little I can add to the description given by Dr. Kessel[7] or by Dr. Sexton.[8]

The house records of the following three cases occurring at the infirmary during my service for Drs. Green and Blake briefly illustrate what has been said:

Case I. Mrs. M. F., forty-two years old. Has had a chronic, purulent discharge from the right ear for forty years, during which time it has never wholly ceased, considerable tinnitus. No pain, advised to enter the house for operation. Examination of the patient showed a slight discharge from the ear. Large perforation of the membrana tympani. Head of malleus rough to the probe and adherent to the promontory.

September 10, 1891. Patient was etherized and the malleus freed from all its attachments, which were very firm and dense around the head of the bone and handle, and then removed with forceps. The ear was thoroughly syringed with a corrosive sublimate solution (1 to 2,000), and tightly sealed with absorbent cotton and a collodion dressing applied. Examination of the malleus revealed caries of head and short process. Most of the manubrium had sloughed away.

September 14th. There had been no pain since the operation. Dressing removed for the first time. The ear was found absolutely free from all discharge. Evening temperature 99° for three nights, normal the rest of the time.

September 16th. Ear perfectly dry. Meatus kept closed with antiseptic cotton.

December 5th. At the end of nearly three months, middle ear found dry and the mucous membrane white in color. Hearing greatly improved for conversation. $W = \frac{20}{70}$. No tinnitus.

Case II. Miss L. V., about fourteen years old. On November 11th she entered the out-patient department for the relief of an otitis media suppurativa of the left ear, which had lasted for several years. Malleus was carious and had a large polypus growing from the handle. Bone very loosely held in place and partly destroyed by necrosis. Under ether, the malleus and polypus were removed with the snare and a few granulations in the upper part of the middle ear cavity were curetted. The meatus was then closed with cotton after being syringed with a corrosive sublimate solution (1 to 3,000). Evening temperature 100°.

November 12th. Considerable foul-smelling discharge from the ear. The patient was unable to bear the removal of the granulations so they were touched once a day with perchloride of iron. Syringed with a 1 to 5,000 solution twice a day, and followed with instillations of resorcin and alcohol. Temperature 99°.

November 16th. Amount of discharge much less. Referred to out-patient department; since that time nothing has been seen of her.

Case III. Miss L. C. B., thirteen years of age. Had been troubled with chronic purulent discharge from the left ear for ten years; at times annoyed with dizziness. Examination showed patient in poor general condition and anæmic; large destruction of the posterior segment of the drum membrane; malleus firmly adherent to the promontory; and the probe revealed a small spot of necrosis on the anterior edge of the handle of the hammer. Granulations were found covering an area of diseased bone on the inner wall of the middle ear cavity posterior quadrant.

October 1st. The patient was etherized, and an operation of half an hour performed. Malleus removed after some considerable difficulty, due to thick bands of tissue around the head of the bone. The granulations on the inner wall were curetted. Collodion dressing applied.

October 2d. Rallied from the ether well. Complained of some headache and slight pain in the ear. Temperature 99.8°.

October 3d. Dressing removed, and middle ear found filled with foul pus. Syringed three times daily, and powdered with iodoform. Evening temperature 99.5°.

October 5th. Discharge less. Slight headache and no pain in the ear. Temperature normal.

October 12th. Amount of discharge is very small. Ear wiped dry, and powdered once in two days.

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[7] Archiv. f. Ohrenheilk, vol. xiii.

[8] Transactions of the American Otological Society, 1886.

October 17th. Ear perfectly dry in the superior portion. After omitting treatment for ten days, slight moisture only over spot of necrosis in lower portion of the tympanic cavity. No change in hearing.

January 2, 1892. Ear without discharge. No complaint of dizziness. Hearing the same as before the operation.

In Case III healing was delayed by the condition of the bone concealed by the granulations on the inner wall of the tympanic cavity, although curetted as thoroughly as possible. All discharge disappeared from the attic in a few days after the operation. In contrast to this case is the one reported first, in which, in spite of the long continuance of the suppuration, the ear healed almost immediately after removal of the carious malleus. I think the two cases illustrate the two classes into which suppurative processes in the middle ear may be divided, considered from the point of time necessary for recovery after the operation. First, I would class as simple cases those in which necrotic bone is confined to one or more of the ossicles, the bony walls of the middle ear cavity being perfectly free from such a disease; second, as complicated, those cases in which some part of the bony wall, together with the ossicula, is diseased. The most speedy cure may be very naturally expected after operation in the first variety of cases, for the simple reason that everything interfering with recovery is removed. Experience has shown that the ears heal almost at once without subsequent treatment being necessary. In the second class of cases healing is necessarily delayed, depending largely upon the seat of the diseased bone in the tympanum.

Removal of the ossicles and the membrana tympani will not cure every case of chronic otorrhœa; but I am certain that many may be cured and the rest relieved by operation. Of the cases mentioned in this paper (twenty-three in all), twelve were cured in three months or less time; one in six months; five cases were improved; three cases were not improved and two passed from observation. As every variety of local treatment in most of the cases had previously been faithfully tried, it seems to me that the results of the operation have been most satisfactory, and that from the cases reported we may draw the following valuable conclusions:

(1) The removal of the drum membrane and ossicles is attended with little annoyance to the patient, proof of which is sufficient to warrant the performance of the operation as the only means of cure in many cases.

(2) The operation often produces marked improvement of the hearing.

(3) Satisfactory results may be expected towards the relief of tinnitus and vertigo.

(4) The results of the operation seem to be permanent.

Although not the chief purpose of this paper, I am tempted at this point to speak of operations on nonsuppurating ears. The possibility of hearing well without the membrana tympani, malleus and incus has been successfully demonstrated in a number of cases; and this suggests what operative procedure may be expected to do in some cases of deafness due to hypertrophic catarrh of the middle ear without fixation of the stapes. The distressing symptom of tinnitus has been relieved by the same operation. It has also been done with success in certain cases of disturbance of equilibrium from pressure transmitted through the middle ear. There are a few cases recorded in which the hearing has been in good part restored by removal of the membrana tympani and one or more of the ossicula. The successful operations have, however, been as yet too few to enable us to establish a rule.

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A CASE OF EMPYEMA WITH RECURRENCE AFTER APPARENT RECOVERY.[1]

BY S. H. AYER, M.D.

Early in the morning of January 4, 1890, I was called to see Mrs. P., when I obtained the following record. The patient was twenty-five years old, married, and had a good family history. Had had scarlet fever when a child. About nine o'clock in the evening of December 31st she was seized with the grippe. The following day symptoms of miscarriage began to show themselves, she being six months pregnant. The patient finally miscarried at eleven o'clock in the evening. She was attended by a homœopathic physician. Patient remained comfortable until the morning of January 3d, at which time she was seized with extremely sharp cutting pains throughout left chest accompanied by much dyspnœa. The pain continued throughout the day and night, and as the physician in charge gave nothing that seemed to afford any relief, the husband decided to change doctors, and I was accordingly summoned.

It was 4.30 A. M. when I arrived at the house. The patient was apparently suffering intensely, and was in a very much exhausted condition. Pulse 120, temperature 101.4°, respiration 40. A hurried physical examination of the chest showed flatness with bronchial respiration in lower half of left back. A quarter of a grain of morphine was given by the mouth, and a poultice of mustard and flaxseed applied to whole left side, back and front.

At 8.30 A. M. I returned, and found that the patient had been dozing since six o'clock. Morphine, one-eighth of a grain, had been given twice during my absence. Lochia scant, whiskey and digitalis were ordered. Pulse 128. At 5 P. M. the pulse remained the same, respiration 32. Patient was very drowsy, and pupils were somewhat contracted. There had been no pain to speak of during the day. Numerous fine moist râles were heard in the lower half of left axillary region.

January 5th. Pulse 112, temperature 100.8°, respiration 36. Pain in side was gone. Took nourishment well through the night. The cough and expectoration were very slight, the latter being thick and tenacious. The tongue was moist and had a thin whitish coat. Patient complained of pain and tenderness in hypogastric region, the knees being drawn up. At 5 P. M., pulse 126, temperature 102.4°, respiration 36. There was marked tenderness over the uterus and also in both iliac regions. Vaginal examination found the passage hot, os somewhat open, moving of uterus painful. Lochia somewhat scant and slightly offensive. Iodoform was applied to vaginal outlet and the pain was controlled by morphine.

January 6th. Pulse 124, temperature 101.8°, respiration 28. Patient feeling much better. Abdomnal pain and tenderness very much less. At 5.45 P. M., pulse 126, temperature 102.4°, respiration 37.

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[1] Read before the Boston Society of Medical Observation, March 7, 1892.

January 7th. At 9 A. M., pulse 100, temperature 100.2°, respiration 36. Patient was apparently much improved. Whiskey was reduced. The abdomen, however, was still somewhat tender, and poultices were accordingly kept on.

January 8th. At 12 M., pulse 98, temperature 100.6°, respiration 40. Some diarrhœa, right cheek quite flushed, abdomen still tender. A partial physical examination of chest revealed dulness, merging into flatness below a point located in third left interspace in axillary line. Respiration absent over this area. The heart sounds were heard loudest at a point directly below the sternum. The back was not examined.

January 9th. At 12 M., pulse 96, temperature 100.8°, respiration 30. The tongue was clean, and there was apparently no abdominal tenderness. In the third right intercostal space, about one inch from edge of sternum was heard a to-and-fro friction sound, synchronous with the heart beat. With the patient lying on her right side percussion showed flatness in left back up to spine of scapula, with moderate bronchophony but no vocal fremitus. Percussion over left infra-clavicular region was tympanitic.

January 10th. At 12 M., pulse 96, temperature 99.2°, respiration, 34. From this time to January 16th condition of patient remained about the same, the respirations keeping up from 30 to 36, pulse from 96 to 108, and temperature 97.2° to 100°. Tincture of iodine was applied to chest and back on left side, and on January 17th the patient was removed to St. Elizabeth's Hospital. The physical examination at this time was as follows: Position of patient prone, percussion over left front was tympanitic down to third interspace, at which point and below it in mammary line, was flatness and absence of respiratory murmur. Respiration was diminished above third space on left side. Percussion over whole of left back was flat. Respiratory murmur and vocal fremitus were absent. Apex beat of heart was heard loudest in median line of body just below ensiform cartilage. The patient was given liquid diet, and tincture of digitalis and citrate of potash were administered.

January 19th, Dr. George E. Thompson saw the case with me, in consultation, agreeing with me in the justifiability of aspirating. A hollow needle, one millimetre in diameter, was accordingly passed into the sixth interspace just back of the axillary line, and one ounce of laudable pus withdrawn. There was no shock and very little discomfort from the operation.

The following day Dr. Kingman saw the case with me. In order to allow the patient to escape, if possible, the making of a permanent opening into the chest, two trocars were introduced, the latter being one of the largest size. Poor success followed this procedure, only a few drops of pus working through into the aspirating bottle with the larger, and practically none with the smaller. There was considerable pain associated with the passing of these trocars, but, nevertheless, the patient was quite comfortable the next day. The temperature then began to rise slightly, reaching 102.4° on the evening of the 21st. The to-and-fro sound in the third right interspace remained.

January 24th. The examination of the urine being negative, save a moderate diminution of the chlorides, the patient was etherized and the following operation performed, Dr. Kingman assisting. A hollow needle was first passed into the chest, through the sixth left interspace at a point directly behind the posterior axillary fold. Pus showing itself again through the needle, and, using the latter as a guide, a permanent opening was made into the chest. Fully two quarts of pus were evacuated, containing numerous large pus clots the size of one's thumb, thereby accounting for the poor results obtained on passing the trocars four days before. A double rubber drainage-tube three-sixteenths of an inch in diameter, was inserted, and the cavity washed out with a solution of chlorinated soda (1 to 20). A dressing of iodoform gauze, rubber tissue carbolized gauze and cotton batting was applied.

The following day percussion was tympanitic over the whole left front, but the heart sounds had apparently not changed their locality. The after-treatment, though finally satisfactory, was not entirely smooth sailing. Several times the cavity was found not to be draining sufficiently, and on removing the tubes, large pus clots would be found drawn into same, completely obstructing the outflow of any fluid behind them. In spite of these drawbacks there was steady improvement. Respiration increased over the left chest, being heard on February 4th down to the nipple. Numerous friction rubs were also heard in left infra-clavicular region, as also in mammary and axillary regions. The apex beat was heard loudest just to left of sternum. The respiratory murmur was heard in left back down to a point one inch above the lower angle of the scapula. The chest was washed out daily with chlorinated soda solution, and the cavity measured from time to time.

The case proceeded well; the capacity of the cavity gradually diminished; the discharge lessened in amount, becoming on February 28th mostly of a serous character, at which time one tube was removed. I should have remarked that the solution of chlorinated soda had been followed by one of compound tincture of iodine (1 to 7) since February 18th. March 7th, the cavity held thirteen drachms. Six days later the second tube was removed, the cavity measuring three and three-quarters inches in depth. A soft rubber tube, four inches long was inserted, and drawn out about three-eighths of an inch daily, it being removed permanently March 21st. The sinus apparently healed nicely, and the patient left the hospital on April 1st, there being simply a small granulating surface the size of a silver three-cent piece, over the site of the external incision.

The patient's health remained excellent throughout the months of April, May and part of June. So good in fact, that in May she went to work at dressmaking for three weeks.

On the evening of June 28th, she came into my office with the statement that for the past six days she had not been feeling well. Malaise was really the only symptom I could obtain. The pulse was quickened, and the temperature was 102.4°. The tongue had a thick, whitish coat. There were absolutely no symptoms referable to the chest.

The following morning at eleven o'clock I saw the patient at her home. The temperature was 101.4°. There were no rose spots, no abdominal tenderness nor gurgling. The spleen could not be felt. A careful physical examination of the chest showed nothing further than the signs of an apparent recovery from empyema, there being, as I have said, no symptoms referable to the chest. Seeing the case every day soon convinced me that I was not dealing with a case of typhoid fever. The tongue continued coated, and the fever was more or less present, being, however, much higher in the afternoon.

On July 10th and 12th, at noon, the temperature was normal, but at 4 P. M., on the latter date, it registered 100.8°. By leaving my thermometer the temperature was taken twice daily, showing a normal temperature in the morning, and from 101.8° to 102.4° in the afternoon.

July 18th, diarrhœa appeared, which I would here remark lasted without intermission until November 25th, the number, but not the character, of the dejections being controlled by morphine.

July 20th, vomiting began, taking place every night about 9.30 o'clock. So regularly did this make its appearance, that the possibility of there being a malarial element in the case was quite seriously considered, and quinine administered at 9 and 2 o'clock in the day without effect.

July 24th. As the vomiting did not appear to abate, and as the surroundings were such that the patient could not receive the proper care, she was sent to the Boston City Hospital.

When the patient went out of my care no chest symptoms had been discovered by me. I had not, however, listened to her chest for several days. On referring to the records of the City Hospital, through the kindness of the visiting physician, Dr. Folsom, I found that copious fine crepitant râles were heard in the right back, with occasional friction rubs, this being, please notice, on the side opposite to the one on which was the empyema.

August 20, was a note, saying that there was "some cough and expectoration the past few days." The patient was up and about most of the time, and went out doors in pleasant weather. The evening temperature kept up, and on August 25th she was discharged relieved, the final note being, "Condition in lungs about the same. General condition no better. Diagnosis, phthisis."

On August 28th, I examined her at home, and found no signs of moisture in the lungs, with the exception of a few fine râles in the region of the right nipple, the old empyema signs remaining the same as before. Her general appearance, however, was bad; her expectoration greenish and thick; weight 100 pounds; pulse 120; in fine, she did look phthisical. So, thinking that there probably were some signs, which did not show themselves to my stethoscope, I prescribed creasote, whiskey and Fellows' Hypophosphites, and sent her to Melrose Highlands, where she had friends.

She returned to Boston on September 14th, but I did not see her until the 16th. She had not improved during her absence, and had developed a new symptom, namely, continual pain and soreness in left back below angle of scapula, and also in right axillary region. The pain was sufficiently severe to keep her awake nights, she being unable to get into a comfortable position. The cough had also increased, in fact, she said she coughed almost all the time, raising a rather thin, greenish fluid, a pint being raised in about two hours the previous night. Much dyspnœa on the slightest exertion. Pulse 128, temperature 101.6°.

It was at this point that I blame myself for not having discovered the true condition of things. My only excuse is, that considering the case from all sides, I had finally decided the case to be one of rapid phthisis, notwithstanding the negativeness of the physical signs. My physical examination at this time, though probably biased by the diagnosis at which I had arrived, was somewhat interesting. It was as follows: marked dulness at right infra-clavicular region, with numerous medium, moist râles. Cracked-pot resonance over this area, but no signs of cavity on auscultation. No metallic tinkling. No râles nor adventitious sounds heard elsewhere. The same treatment was continued with the addition of a Beverley-Robinson inhaler, creasote being used. The pain in left back disappeared in a couple of days, expectoration diminished, and in a week she was feeling quite a little better, so much so, that she decided to return to Melrose, which she did September 24th. I should have stated that at this time there was marked clubbing of the finger-nails, and also night sweats and diarrhœa.

I heard from her occasionally through her husband. On October 1st, he left word at the house, I being away at the time, that a swelling had appeared in the left side in front just below the nipple. About two weeks later he told me personally the same thing. Her condition generally remained about the same. Toward the latter part of October she was seen by a Melrose physician, who pronounced the swelling to be a surface abscess, and ordered a poultice. The following day he lanced the abscess, there being a profuse discharge of pus. Coincident with the opening of this abscess the cough stopped, and the patient's appetite, which had been poor, began to improve. In a short time the discharge began to be extremely foul, and although the patient's condition was very much improved, at the same time she was suffering from œdema of the ankles and legs, night sweats and dyspnœa.

Three weeks after the opening of the abscess, November 17th, the patient again entered the St. Elizabeth's Hospital, at which time the following conditions were found: patient much emaciated, œdema of ankles, diarrhœa. Examination of right lung was negative with the exception of a few sibilant râles in mammary region. Respiration absent over whole left front and back, with the exception of much diminished respiration in infra-clavicular region. The skin over an area the size of a silver dollar in left sixth interspace in mammary line was bluish in color, there being an opening in the centre of same about one-third of an inch in diameter. The opening was discharging a stinking, watery, purulent fluid.

November 19th, at 5 P. M., temperature 102.2; pulse 120.

November 20th, at 11.30 A. M., there being no albumen in the urine, the patient being etherized, the following operation was performed, Drs. Kingman and Conant assisting. An incision about three inches long was made through the centre of the before-mentioned discoloration parallel to the ribs. Upon inserting the little finger it passed directly into a depression in the sixth interspace in mammary line. Artery forceps were first pushed through the opening followed by an uterine dilator, and about a quart of pus evacuated.

The cavity was then washed with a solution of corrosive sublimate (1 to 3,000). The tissue over the seventh rib was then dissected down to the seventh interspace and an inch of the seventh rib removed with bone forceps. The cavity, which was deeper than the index finger, was curetted with a dull curette and washed out again with a solution of corrosive sublimate (1 to 10,000). Fully a half-teacupful of masses of lymph was washed out of the cavity. A double drainage-tube was inserted and the side dressed as before. The patient did uninterruptedly well. Coincident with the operation the diarrhœa stopped, it having been present continually since the preceding July. November 23d, the œdema of the ankles also disappeared.

Measurement of the cavity from time to time showed a gradual diminution in the capacity of the same as follows: November 24th, five ounces; November 30th, three and one-half ounces; December 4th, three ounces; December 9th, two and one-half ounces; December 14th, two ounces.

On December 16th the probe passed in five inches, the cavity holding one and one-quarter ounces. The weight was 110 pounds.

On December 23d the discharge was quite purulent. The temperature, however, remained normal, and the patient was up and around the ward, doing considerable sewing.

On January 12th, although the patient's general condition remained excellent, nevertheless, the discharge was apparently increasing. A probe at this time passed in four inches.

On January 15th, having decided that further operative interference was necessary to insure the complete healing of the opening, the patient was accordingly etherized by Dr. Ross, and the old incision of November reopened, Dr. Conant assisting. About one inch of the fifth and sixth ribs were resected, the direction of the opening being outward and upward toward the axilla. Examination by the finger showed a cavity extending upward and backward toward median line of body about four inches in length. A double drainage-tube was again inserted, and the side dressed the same as before. The following day the patient was very uncomfortable, she being very restless and aching all over. The temperature registered 103.4°.

On January 18th she was quite herself again, as far as her feelings were concerned. A considerable amount of pus came away in the washings, but the capacity of the cavity steadily diminished at the rate of about a drachm a day, so that on January 29th the cavity held but two drachms, the character of the discharge being much more serous.

On February 2d, the tubes were removed altogether and the cavity filled with a mixture of iodoform and vaseline, twenty-four grains to the ounce.

On February 9th, nothing but the line of the incision remained unhealed, and on the following day she was discharged well.

Up to the present time the patient's health has been excellent, there being no symptoms whatever of any return of the disease.

Snakes in India. — Sir Joseph Fayrer, in a lecture recently delivered at the Victoria Institute on the venomous snakes of India, reports that upwards of 20,000 human beings and some 3,000 cattle are annually killed by these reptiles in that country. The Government of India is offering rewards for their destruction, as was shown by a return that 578,415 snakes were caught and killed at a cost of 19,004 rupees in the year 1890.

Clinical Department.

PLACENTA PRÆVIA AND URÆMIA IN THE SAME PATIENT.[1]

BY CHARLES W. TOWNSEND, M.D.

Mrs. C., thirty-two years of age, was first seen by me late in the evening of December 19, 1891. She had been married one year, during the first four months of which she had aborted twice. At the time of my visit she was six and a half months pregnant, and had begun to have pains and flowing at four that afternoon. I found she had lost considerable blood, several napkins and a small blanket being more or less soaked; but I also observed her œdematous face and extremities, which were very pale and bloodless.

On questioning the nurse, it was discovered that the œdema had appeared in the last two days, that a severe headache began that same morning, and that her vision became blurred, the sight in the left eye being very defective. Nothing abnormal had been observed about the appearance or quantity of the urine. The os uteri was rigid, admitting only one finger. The placenta could not be felt, although from the amount of hæmorrhage which still continued, I believed that the placenta was partially detached from a low position. There was not enough urine in the bladder to flow out through a catheter, but the small amount that was caught in the end of the catheter was found to be of a smoky color and loaded with albumen. Labor-pains were present, but slight and irregular.

In the presence of the ante-partum hæmorrhage, it was decided to dilate and deliver, the existence of uræmia and threatened eclampsia making this course more urgent. Dr. T. F. Sherman kindly saw the case with me, and agreed with me in the diagnosis and treatment.

After full anæsthesia with ether, manual dilatation was begun at midnight, completed in an hour and three-quarters, with Dr. Sherman's help. The placenta was found partially detached close to the edge of the os on the left side, and there was considerable hæmorrhage at the completion of the dilatation. A dead six-and-a-half-months fœtus, was easily turned and delivered.

The patient was given one-sixth of a grain of pilocarpine and drachm of brandy subcutaneously, and was surrounded with hot-water bottles and warmly covered. She began to sweat freely in twenty minutes, and came out of the ether well.

She was rational and comfortable that morning six hours later, and free from headache although the vision remained blurred. Her pulse was 120, temperature 100°. Ten hours from the catheterization before labor, the water, only four drachms in all, was again drawn, and found to be smoky, containing over one per cent. of albumen, and a sediment of much free blood, and numerous epithelial, blood, hyaline and fatty casts of large and small diameters.

She was again made to perspire freely with pilocarpine, and was given cream-of-tarter water to drink, in addition to milk diet. The bowels were moved freely, four watery dejections being obtained by the use of Epsom salts.

The kidneys from that time began to act, and in the next twenty-four hours she passed two and one-half quarts of urine, containing but a trace of albumen.

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[1] Read before the Obstetrical Society of Boston, March 12, 1892.

Two days later the urine had increased to four quarts in the twenty-four hours, the œdema had disappeared, she had had no more headaches, and her convalescence was fully established. The albumen gradually diminished, and in five weeks after confinement none was to be found in the urine.

My excuse for reporting this case is the fact that two such grave obstetrical emergencies as uræmia and placenta prævia were met with in the same patient. It is reasonable to suppose that the free hæmorrhage from the placenta prævia prevented the onset, in this case, of eclampsia.

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PLACENTA PRÆVIA COMPLICATED WITH URÆMIA AND IMPENDING ECLAMPSIA.[1]

BY CHARLES M. GREEN, M.D.

The following case was seen in consultation with Drs. Martin and Chandler of Medford: to Dr. Chandler I am indebted for the notes of the case.

The patient was an American woman, thirty-nine years old, in the tenth lunar month of her first pregnancy. She was first seen by Dr. Chandler for Dr. Martin April 24, 1891, when he found her suffering slight pains and flowing quite freely. Examination revealed a placenta prævia, and the os uteri undilated. A vaginal tampon was introduced, and morphia given, after which pain and hæmorrhage ceased. It was learned at this time that the patient had always had more or less stomach trouble, and that for five or six months it had been worse. For a month she had had a good deal of headache, and frequent attacks of nausea and vomiting. The urine was found to be scanty, of low specific gravity, and containing one-half per cent. of albumen and numerous casts: there was moderate œdema of the feet and legs.

Next day the tampon was removed and a douche given: there was no more hæmorrhage; but nausea was constant and vomiting frequent. It was obvious to Dr. Chandler that immediate obstetric interference was urgently indicated; but circumstances prevented, and Basham's mixture was prescribed. No improvement followed, and on April 28th and 29th not more than ten ounces of urine were passed in twenty-four hours. Pilocarpine one-sixth of a grain, repeated in half an hour, did not start perspiration.

April 30th, flowing began again and was controlled as before with tampon and morphia. May 1st I saw the patient in consultation, and found complete placenta prævia, but no present hæmorrhage: the os was slightly dilated. This condition was in itself an indication for immediate delivery: the grave symptoms of uræmia and impending eclampsia made active interference doubly urgent. Ether was given, the os uteri was dilated manually, and a living child was delivered by internal podalic version: the infant, though asphyxiated, premature and poorly developed at birth, has thus far survived.

Next day, there was no more vomiting, and the patient was passing more urine. The following day, the patient passed a good amount of urine, took plenty of nourishment and suffered no nausea. One month after delivery, the urine was found free from albumen and casts.

Placenta prævia is a rare complication of pregnancy and labor, occurring perhaps once in a thousand cases: it occurs six times as often in multigravidæ as in those pregnant for the first time.

Eclampsia occurs about twice as often as placenta prævia and is most frequently seen in primigravidæ, especially in elderly primigravidæ. The combination in the same patient of these two most serious complications of pregnancy is of sufficient rarity to make all such cases worthy of record.

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TRICHINOSIS: REPORT OF CASES.

BY C. W. MACDONALD, M.D., BOSTON.

For the past twenty years there is no authentic account of cases of trichinæ poisoning in Boston. For a longer period there have been no fatal cases of it. Its comparative infrequency yet fatal tendencies, are, I think, sufficient inducements to note well and publicly the insidious nature of the dread visitor. With this objective view I propose to report my experience lately with a few cases in my neighborhood.

About the last of March a patient came to my office complaining of some purging with abdominal pains. Having no other serious symptoms, I concluded that the trouble was caused by some indigestible irritant and prescribed accordingly. Two days later I was called to his boarding-house to see the proprietor, who was in bed and seriously ill. His symptoms were somewhat similar to those of patient No. 1, but much more exaggerated, and, in addition, he had a temperature of 102° F., bulging of eyes, headache, and "pains all over his body."

Being assured of no unusual diet in the household, and, consequently ignorant of the true nature of the disease, I treated the matter symptomatically and expectantly, and left with typhoidal thoughts agitating my mind. Next day my second patient's sufferings were intensified; temperature 104.5°. Still I postponed my diagnosis, and gave ten grains of quinine every three or four hours and all the brandy the patient could take. Next morning my anxiety was considerably removed by finding my patient with a temperature of 102°, and his other symptoms very much ameliorated.

And now, with the invasion of other members and friends of the family, to the number of fifteen, came the solution of what thus far had proved a mystery. About ten days previously, the family larder had been reënforced by the addition of a partially smoked ham. A neighboring family was also similarly supplied, and sandwiches, of the raw pork from both hams, had been more or less freely partaken of. Every one who had eaten of them, was, in about forty-eight hours, similarly affected. Some more seriously than others, the degree of affliction not at all in proportion to the quantity eaten. One visitor at my patient's house, who had eaten two sandwiches, died in about ten days, despite the best medical attendance.

Now, to return to my patient No. 2, whom we left with a temperature of 102°, upon quinine and brandy. He made an uninterrupted recovery. His was the most severe and the most typical form of trichinæ infection of all my cases. At the present writing, though past the seventh week, the usual time of active trichinæ symptoms, all the affected are still troubled with some diarrhœa and muscular pains, but they have resumed their respective avocations, and get on tolerably well with liberal libations of brandy and occasional doses of quinine.

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[1] Read before the Obstetrical Society of Boston, March 12, 1892.

In connection with this report, I may add, that the microscopical examination of the infected pork revealed numerous and active swarms of trichinæ.

Trichinosis, fortunately a rare disease, occupies but a small space in medical literature. Whilst the parasites are generating in the intestinal tract, some measure of treatment with the hope of either their elimination or annihilation is offered, but its efficiency, in either case, remains an open question. When the trichinæ reaches its coveted home in the muscular tissue within its encysted walls, it, thus far, bids defiance to any adversary that may pursue. That quinine and alcoholic stimulants in large quantities, should, apparently at least, arrest a serious case of trichinosis, in one instance, does not establish a principle, but the coincidence, to my mind, is too striking to be forgotten. Besides their stimulating effects, may they not have some specific properties?

In a recapitulation of the subject, the following facts may be gleaned:

(1) Necessity of thorough cooking of pork before eating.

(2) Necessity of a true history in disorders simulating typhoid fever or diarrhœal troubles.

(3) Speedy microscopical examinations of suspected pork.

(4) Tonics and alcoholic stimulants.

(5) Imprudence of a sudden or premature arrest of alvine evacuations.

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Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

TREATMENT OF CROUPOUS PNEUMONIA IN CHILDREN.[1]

THE generally accepted opinion as to the element of danger in pneumonia is the tendency to cardiac exhaustion or heart-failure. In order to guard against this danger, it is of the highest importance to understand how such a condition is brought about. An excellent paper by Dr. A. H. Smith called attention to the important part played by the engorged condition of the diseased lung in producing cardiac exhaustion. It was shown that the right heart and not the heart as a whole was the main source of exhaustion, and that it was far safer to watch the pulmonary second sound of the heart than the pulse, as a danger signal of this condition. In Dr. Dessan's paper, from which this is taken, we have an inquiry based upon this hint. Owing to the obstructed circulation in the engorged lung, the blood-vessels of which are in a state of permanent dilatation, the right heart becomes overcrowded. In the systemic circulation the aterioles are contracted. The left heart has therefore to work more powerfully which forces more blood into the venous circulation, but the right heart, owing to the obstruction in the lungs cannot readily empty itself before it is filled by the return flow from the veins. Dilation of the right ventricle follows.

If such a condition is the probable interpretation of the tendency to heart-failure in croupous pneumonia, the treatment, so far as the circulation goes, should attempt to relieve the right heart by increasing the capacity of the systemic system and lessen the rapidity of the heart's action.

Since croupous pneumonia, especially in children, tends to recovery, our efforts should be directed to assisting nature. As a means of dilating the superficial blood-vessels and producing diaphoresis simple remedies such as the spirits of mindererus, or the solution of acetate of ammonium, or sweet spirits of nitre are serviceable. Sponging the entire body with water at 116° F., or the warm bath at 95° F., is also recommended. This sponging and bath are given for the purpose of dilating the cutaneous vessels and inducing diaphoresis and should be so conducted as to accomplish these ends, and with them the use of friction to the skin may be advantageously employed. It has been observed that hot sponging reduces temperature better than the ordinary antipyretics. To give the venous circulation still more relief the blood from it may also be diverted to the liver, a reservoir capable of holding a large amount of this fluid. Furthermore the increase in the blood supply to the liver will stimulate its functions, among which is to be noted the destruction of poisonous products in the blood, and this is suggested as a point of much practical importance. To bring about this flow of blood to the liver small doses of calomel in triturates of one-tenth of a grain each are given every hour for six doses, on the first day and thereafter every three or four hours daily, according to its effect upon the bowels. The diuretic action of small doses of calomel should not be lost sight of as the kidneys are important organs for the elimination of fever products.

Aconite is mentioned as a remedy which may be used to reduce the heart's action. This is administered in half a drop or drop doses at the onset of the disease, and repeated hourly while the patient is awake, this not only slows the heart's action, but it assists in dilating the cutaneous vessels and promoting prespiration.

Large doses of digitalis are mentioned, and condemned. Carbonate of ammonia seems to him useful only as prompt diffusible stimulant to the circulation as a whole at the period of crisis.

A warm poultice aids diaphoresis by means of warmth and moisture, but the employment of a warm wet binder serves the same purpose as the poultice, is neater and less disturbing to the patient. The above are some of the views outlined by Dessan while following out the lines of rational therapeutics. He believes that in order to treat croupous pneumonia in the best way one should keep the principle of continuous dilatation of the cutaneous blood-vessels always in mind. In this way relieving the right heart, reducing the temperature while producing diaphoresis. If there is a morbific poison it is thought that its elimination through the skin and kidneys may be promoted and its destruction in the liver aided.

THERAPEUTIC USE OF THE SALTS OF STRONTIUM.

As the salts of strontium have been found to be diuretic when given to dogs, it was expected that they would behave in the same manner in man. On testing them, however, Professor Sée found that diuresis could not be produced by their means even in cases in which it was easily set up in other ways. It was noticed, however, that in patients with Bright's disease, or heart affections, the digestive troubles, underwent a very marked improvement. This led the author to try the effect of bromide of strontium in gastric affections.

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[1] Archives of Pediatrics, 1891, No. 93.

Thirty-two patients, mostly suffering from acid dyspepsia, either with or without dilatation of the stomach, were thus treated, the minimum daily dose being thirty grains, and the maximum a drachm, taken between meals. All showed marked improvement, the diminution of gas formation was very noteworthy. In eight other cases of dyspepsia from reduced hydrochloric acid formation, the drug produced equally satisfactory results, completely controlling fermentative changes and the formation of lactic and acetic acids.

Dujardin-Beaumetz makes the following statements as to the clinical uses of the salts of strontium. The only salt of which he had had any experience was the lactate. This he had employed in a number of cases of Bright's disease, with albuminuria; under its influence he had the satisfaction of seeing the albumen diminish very considerably, in some cases being reduced to one-half of that previously excreted. He attributed this favorable action rather to the very beneficial action of the strontium salts on digestion than to their direct action on the kidneys. At the same time he pointed out that the greater or less quantity of albumen passed was of less importance in the prognosis of the disease than the proportion of toxines retained in the organism, which the renal filter either retains or allows to pass into the urine. He recommended that a milk and vegetable diet be employed in combination with the drug, which he gave in doses of one and a half drachms per diem.

THE USES OF STRONTIUM BROMIDE.

In experimental doses of salts of strontium bromide, in thirty-two cases of dyspepsia, he gave from thirty to forty-five grains a day, in three doses, with meals; and those cases in which there was excess of hydrochloric acid rapidly improved and developed much less gaseous products. In six other cases, where there was vomiting with deficiency of acid, there was complete cessation of the sickness. Strontium lactate did not produce any good effect, strontium bromide, as well as calcium bromide, was found of use by M. Sée in epilepsy; and this was confirmed by M. Féré, who found, in fact, that owing to its easy agreement with the stomach, it was sometimes advisable to give strontium bromide in preference to the potassium salt.[2]

NAPHTHALIN IN WHOOPING-COUGH.

Ivanoff, referring to Chavernais's paper, says he has treated all his cases of pertussis by naphthalin for several years past, the result being invariably excellent. It is absolutely necessary, however, that the patient should inhale the naphthalin fumes continuously day and night till recovery takes place. It is sufficient to fasten a small linen bag containing the drug on the child's neck, or to rub the substance into the patient's clothes. It is also advisable to sprinkle the powder freely all over the floor of the sick-room. The paroxysms of coughing very quickly subside, and soon disappear altogether. In very severe cases the author sometimes resorts to the internal use of bromide of sodium or potassium as an adjuvant.

(To be continued.)

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[2] British Medical Journal, January 9, 1892; Practitioner, February 1892.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

J. C. MUNRO, M.D., SECRETARY.

Regular meeting, Monday, March 7, 1892, Dr. S. G. Webber in the chair.

Dr. J. B. Ayer read a paper on

THE THIRD YEAR OF THE INFLUENZA EPIDEMIC.[1]

Dr. H. W. Williams: I had a personal experience of influenza last year; having an attack come on in the very sudden way described. I was at the hospital and did my morning work, seeing a large number of cases within a comparatively limited time; but I felt, contrary to my usual habit, tired after finishing my work, and it seemed to me afterwards that I said something a little irrelevant to one or two of the students who asked me some question relating to the cases. I managed to get home very well, but went immediately to bed and was unconscious for a week. Fortunately I had no severe pains in the head, but was absolutely unconscious. Then I had a little complication; a portion of one lung being affected with pneumonia at the lower part, and yet I had no suffering of consequence at any time during the duration of the disease. I took enormous quantities of milk, and almost from the beginning of the time when consciousness returned I was able to take solid food, eating my rations almost as if at the dinner table, but it was a number of weeks before I was able to do much work. I felt wilted in every way, but had nothing to complain of in the way of severe cardiac or other symptoms. For a considerable time I was less inclined to exertion, but was able to do nearly everything I wished to, intellectually, after I had recovered consciousness. On the whole I feel that I had a very fortunate experience; though a particularly unpleasant one to me accustomed as I have always been to very active work. I had a little return of influenza at the beginning of this winter, and for three or four days was in bed a part of the time, but I have had no other trouble from it. I think the doctor has given an admirable sketch of the course of the epidemic as I have had occasion to observe it.

Dr. C. J. Blake: There have been more publications on the other side of the water than in this country upon disease of the ear in connection with the influenza epidemic. In all that has been written there is one point noted which illustrates the remark of Dr. Ayer in reference to the effect on the nervous system. A vasomotor inhibition showing itself by very considerable congestion in the middle ear, and in the cases of serous exudation a greater predominance of hæmorrhagic effusion, not perhaps distinctly to the extent of being sanguinolent, but with a sufficient number of blood corpuscles to make the discharge very markedly yellow.

Dr. J. Stedman: I was unfortunate in not being in early enough to hear the paper. I have been much interested in the epidemic this year. It seems to me that in many cases it is more likely to prove of long standing than the epidemic of two years ago, and in Ward 23 the tendency was to the pulmonary organs, especially pneumonia, although a large number of cases of bronchitis without pneumonia were observed.

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[1] See page 543 of the Journal.

I noticed that the convalescence was tedious and the nervous system very much reduced, that strong men who were taken down had a good deal of nervous disturbance, headache, and great prostration. I found that keeping them strictly in bed, economizing their strength, feeding them well and in many cases the use of stimulants seemed to be the best plan to subdue the influenza attack. I noticed several cases similar to those Dr. Blake has spoken of, and in some the ear trouble was severe. I think bronchitis, pneumonia and ear troubles so far as I have observed, were more marked than in the other epidemics we have had.

Dr. Spear: Dr. Blake would leave the impression, upon the medical practitioner, that during the influenza the ear is not very seriously affected, when on the contrary the ear is often very seriously inflamed, and the hæmorrhagic conditions which he mentions is exceedingly common rather than otherwise. The vasomotor irritation or lack of inhibition as he described it, is quite marked. It has been my privilege to see a large number of cases on account of my term of service at the Eye and Ear Infirmary giving me the winter months, and I can recall and contrast the two epidemics. In the first we had a very large number of acute inflammations and this year as well, and in nearly all of them we were surprised at the large amount of blood which formed in a coagulum as a sort of cast of the canal. The treatment did not differ very much from that of the acute inflammations which we ordinarily see. I had no difficulty whatever during the first month, that is through January, because the cases came early, but later during the second month the patients who had been treated by other gentlemen or who had neglected treatment or had been improperly treated by others, presented mastoid cases, that is to say, complications of acute inflammations such as mastoid inflammation and meningeal inflammations and the severer forms which always come from neglected acute inflammations of the ear. I should like to ask Dr. Ayer if he can tell me what the pathognomonic sign of an acute attack of influenza is. From my slight experience I think I have noticed that the first appearances present that condition which Dr. Blake alluded to, that is vasomotor paralysis, and one finds a flushed face, high temperature, bounding pulse. The last article that I read, which has been copied by the public press, was an account by the Austrian specialist, Nothnagel, who described the disease as a neuropathic one, that is to say, as a nervous disease. I think we may add that it is a disease of the sympathetic nervous system, which is that portion of the general nervous system which I sometimes explain as that which remains awake during sleep. There are two systems of nerves, cerebro-spinal and sympathetic; the sympathetic governs all the functions of the body not under control of the will and is held in abeyance by the cerebro-spinal system. In this disease the sympathetic system gets the upper hand, as it does in certain ear cases, and the result is that the weakest portion of the economy, be it throat, ear, lung, or abdominal organ, shows in its later pathological condition the effect of that want of inhibition, and we get, as the gentleman has described very carefully, the pharyngitis or laryngitis, the pneumonitis or enteritis, etc., and all these diseases capable of producing their various phenomena in proportion to the amount of disturbance and to the amount of treatment. I notice with pleasure that my observations agreed with those of Nothnagel, who also claims that stimulation at the time when we have been taught that stimulants should not be given, is the proper thing.

Dr. Hodges: I should like to mention a curious coincidence in regard to the influenza at Nahant. Three years ago, when it first came there, it affected at first the people living in the houses on the southwest side, on Boston Bay, and from there it spread slowly into the upper part of the village. This year there were a large number of people affected with the influenza there, and it came in the same way. So far as I have been able to inform myself, in that part of the town known as Short Beach Village, a community of seventy-five or a hundred people, none of the people have had influenza this year, while, three years ago they were more or less universally affected with the disease.

Dr. Munro: There is a point about the temperature I have noticed in uncomplicated cases of influenza which I have not observed in other diseases. In the morning it is lowest, begins to rise about noon and reaches its height at six; but by nine or ten o'clock in the evening it has fallen considerably.

Dr. J. B. Ayer: I have no doubt that the sympathetic system is principally to blame, but I must confess that there is much which I do not understand. While last year it would seem that that would be a proper explanation, I do not understand why there should be so many catarrhal cases now.

Dr. S. H. Ayer reported

A CASE OF EMPYEMA, WITH RECURRENCE AFTER APPARENT RECOVERY.[2]

Dr. Ingalls: I think the patient, as well as the reporter, deserves a very high degree of credit for mutually sticking together through such a series of disasters and troubles. I think the report is admirably made, and I think the reader deserves great credit for his perseverance, his care and his skill.

Dr. F. L. Jack read a paper on

OPERATIVE TREATMENT FOR THE RELIEF OF CHRONIC SUPPURATIVE AFFECTIONS OF THE MIDDLE EAR, WITH REPORT OF THREE CASES.[3]

Dr. Blake: I have listened to Dr. Jack's paper with much interest, and would like to ask one question, that is as to his observation in regard to the effect on the chorda tympani in the removal of the malleus and incus.

Dr. Jack: There is some loss of the sensation of taste on the side of the tongue corresponding to the ear operated upon. This is said to disappear in a few days.

Dr. Blake: I think the removal of carious ossicles comes under the head of a simple, justifiable surgical procedure, and am quite in accord with the remark which the reader makes also with reference to preliminary treatment, having in view the cleansing of the suppurating cavity in the upper portion of the tympanum by the use of the middle ear syringe; the presence of horizontal reduplications of mucous membrane often presents a decided obstacle to the passage of the pus which may be formed above them, downward into the lower portion of the tympanic cavity and so outward, and it is sometimes found that the use of the middle ear syringe can be much favored by a thorough division of these folds from before backwards. Given careful and painstaking attempts to stop a suppurative process in the upper portion of the tympanic cavity without resort to operation and given caries of the malleus and incus, removal of these bones, as the writer has said, comes distinctly in the line of simple surgical procedure and as such is to be carried out with the precautions which he mentions.

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[2] See page 547 of the Journal.

[3] See page 545 of the Journal.

In confirmation of Dr. Jack's remark as to persistence of the hearing in cases of loss or removal of the membrana tympani, malleus, incus and stapes, I may mention one case in which there has been destruction of the membrana tympani, sloughing away of the malleus, incus and greater part of the stapes, with a fair amount of hearing remaining under these conditions.

Dr. J. O. Green: The paper is a very interesting one. I think the removal of carious bone is indicated and experience proves that it can be done perfectly well here. I am very glad to see the principles of general surgery being applied to these minute parts as they can and should undoubtedly be and the whole principle of the treatment of otorrhœa I would bring under general surgical treatment applied to the minute anatomy of the parts and with the adaptation of special instruments to get at those parts.

In regard to the occurrence of caries here, I think the later German observations show that the anvil is more inclined to caries than the hammer. I think recent observations in the *Archiv für Ohrenheilkunde* from Schwartz's clinic show that the incus is 40% oftener involved than the malleus, and therefore I think in the removal of these bones that it is better to include the removal of the incus with the hammer. If you remove the hammer the incus is of no possible use, and as the pathological investigations of the last few years have shown that the incus is more likely to be diseased than the hammer, therefore, I think we had better take out both when we take out either. I have had two cases this winter which are in confirmation of this. In one case there was no incus remaining. In the second case I brought away the merest little shell about twice the size of a large pin-head, so thin it crumbled in wiping it off the hook with which I brought it out. The hammer in this case was largely diseased, but still there was a large part of it remaining.

In regard to the rapidity with which caries occurs in these cases, I have had a case this winter which interested me because I was able to determine this point. I had a case of scarlatinal diphtheria, or, as it is sometimes called scarlet fever and diphtheria, with total loss of the drum membrane. I did not see the case until the drum membrane was destroyed. In syringing a week or two afterwards the incus and hammer came away. Both showed the beginning of caries which is an interesting fact showing how rapidly caries may attack these bones. It could not have been more than four weeks in this case.

In regard to removing the incus I cannot think that the forceps will succeed in the majority of cases. I have experimented some on the cadaver and have done the operation a number of times, and the only instrument I find to work satisfactorily is the little incus hook invented by Ludewig. The incus in the majority of cases lies so high up that I do not think it is possible to get at it satisfactorily with a pair of forceps. The bones are firmly attached, and this little hook can be passed far up into the cavity.

The question of hearing is an interesting one. You find these cases of caries of the ossicles with very good hearing. You find the drum membrane entire except in the membrana flaccida with ossicles carious and the hearing very good indeed. I have had two of these cases where it was quite a question in my mind what to do, for if I took out the drum membrane I was sure to injure the hearing. In both of these cases I found it was necessary and was glad I did it. In one of the cases I did and in the other I did not remove the whole of the drum membrane. In the future I should take out almost the whole of the drum membrane I think. You often have with these cases caries of the walls of the tympanic cavity. In one of these cases I had but a small opening into the tympanic attic and the drum membrane healed before I got rid of caries of the attic wall. In the next case I took out nearly the whole of the drum membrane with greater success, so that in the future with my present knowledge I should take out almost the whole drum membrane in order to make sure I did not get too rapid healing. Having taken the hammer and incus a cicatricial membrane over the whole drum membrane would be as good as a cicatrix up in the little angle where you take out only a small piece and if you have caries of the walls you have a large opening that will keep open a long time and you are able to treat that caries until it has got well.

In regard to prognosis we must be careful not to make it too favorable, for in quite a proportion of cases we do find caries of the walls of the attic which will keep up the otorrhœa afterwards. Although I believe in the operation thoroughly, and although I think its future will be more useful than now, yet we must bear that in mind and be guarded in the prognosis. You are not sure when you begin on the case that you are not going to find caries of the tympanic walls.

In regard to relapses I think we must be a little careful also about promises, because in a certain proportion of these cases, according to the modern theory which is probably the correct one, there are in the irregularities of the bone, spots in which the microbes lie at rest for a considerable time when they will, from some cause we do not understand, again resume their growth and activity, and set up a fresh attack of inflammation. In spite of these possibilities, in the majorities of cases I am satisfied the operation is an extremely useful one, and occasionally saves life.

Dr. Blake: The incus often slips upward out of the way and is in such position as to be difficult to get hold of. I have generally used for the removal of both the malleus and incus a snare with stout wire. After removal of the malleus and incus or where disarticulation of the incus from the stapes has been effected I have in several instances added to the operation a step found useful in cases of non-suppurative inflammation of the middle ear, namely, division of the tendon of the stapedius with reference to further freeing the stapes.

Dr. Spear: I have been pleased by listening to Dr. Jack's paper though he has mixed his cases so that unless they are disentangled the impression will be given that all cases of loose ossicula would come under the head of removal of the ossicles. He reports three cases of removal of the ossicles in cases of chronic suppuration of the middle ear for the cure of the chronic suppuration. The second case is one of simple exfoliation of the malleus which he fails to trace to a conclusion and which I happen to know about as the result of the case is still very much in doubt. I have had the case under treatment for the last two months. The patient still has a large amount of granulations in the canal, a profuse discharge of pus, and has no hearing. It was a clear case of exfoliation of the malleus.

I have here the *American Journal of Otology*, in which there is a review of Wolf:

> "'Exfoliation of The Necrosed Bones of The Ear.' Oscar Wolf: *Archives of Otology*, September, 1881.
>
> "The author of this paper finds that the cause of exfoliation of these bones in most cases is due to the so-called exudative necrosis in scarlatinal diphtheria. The exudation is propagated from the pharynx through the tubes.
>
> "This diphtheritic process is not the only cause, for in twenty-eight cases analyzed by Wolf we find, scarlatina, eighteen; scrofula, two; typhus, two; measles, one; parotitis, one; diphtheritis, one; acute tuberculosis, one; while in four there could be discovered no constitutional affection.
>
> "Exfoliation of the small bones rarely occurs without some constitutional disease. The incus alone was exfoliated six times in twenty-eight cases, while the malleus alone in two cases. The malleus is nourished not only by the vessels of the tympanum through the tympanic artery, but also from the external meatus."

I think the reading of this will emphasize what I have remarked that it is not an uncommon thing to find exfoliation of the ossicula. It is, however, very unusual for a carious bone to continue in the ear and the healing process go on, so that Dr. Jack and the other gentlemen who have done this operation are certainly correct.

Dr. Jack: There is certainly no doubt that one or more of the ossicles are at times exfoliated in cases of long existing otorrhœa, especially in children. Usually, however, by the time this occurs caries of other parts of the ear is well on its way. Consider for a moment what desperate chances are taken all the time a long standing suppurating middle ear continues discharging. We have a septic cavity surrounded by bone which is in close relation to very important parts; any portion of which is very liable to become carious at any time, and there is no telling whether the process will stop short of serious mastoid trouble or abscess of the brain. Again there is possibility of absorption of septic matter to say nothing of the gradual loss of hearing. In fact carious bone in the middle ear can do no end of mischief. If the diseased portion can be safely removed why not remove it? Is it not quite as important to get rid of as possibly any diseased bone in the body?

I think the hook spoken of by Dr. Green would be useful in bringing the incus down into view in cases where the long process could not be reached with forceps. The bone is, I believe, generally so loosely held in its place as to offer little resistance to its removal.

Dr. Spear: I do not wish to be understood as not advocating the operation. I agree that the carious malleus or incus, or both, should be removed under all circumstances in which the purulent process has been going on some time, but the report of the second case shows that Dr. Jack took hold of the polypus with the snare, and the malleus, which was loosely attached came out with it, while the contrast between the two cases is very marked. He leaves no record of improvement in hearing and I know there has been none, and not only that, but the polypus and the granulations returned and still remain in spite of the operation. I think it would have been a much stronger paper had that second case been left out.

Dr. Jack: We are told to report apparent failures as well as successes. Inasmuch as the patient neglected to continue under observation after the operation, the case shows nothing for or against the operation. Still I feel sure the ear was in a better condition to effect a cure after, than before, the operation.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, March 12, 1892.

Dr. E. H. Bradford reported, by invitation,

A CASE OF HYSTERECTOMY IN A CHILD,

of which the following is an abstract. The patient was a child who had enjoyed excellent health, until within the last six months.

A tumor was discovered in the lower portion of the abdomen, and this grew rapidly in the three months previous to the time when the child entered the hospital. There were no digestive disturbances or symptoms of pain or fatigue. But as there had been a rapid increase in the size of the tumor, an operation was thought advisable. On palpation, a large mass could be felt in the lower portion of the abdomen, a short distance — an inch and a half — below the umbilicus, and filling the lower portion of the abdominal cavity. The tumor was movable and irregular in shape. It appeared to be attached, in the middle line, to the lower part of the pelvis. An abdominal incision was made, and a firm, resistant tumor was found, occupying the middle line of the body, and without adhesions to the intestine or to the abdominal wall, except at the base. In order to remove the tumor, it was found necessary to free the attachments of both broad ligaments and to enlarge the incision above the umbilicus and to take the mass of the tumor out of the abdominal cavity. The tumor was friable, and some bleeding occurred from the unavoidable tearing of the external surface. This was controlled by the application of a rubber-tube around the base of the tumor. Hysterectomy pins were inserted at the base, and the ecraseur applied. The tumor was pressed upward by pressure in the vagina as well as by pulling it upward by means of hooks, and in this way it was possible to place the wire of the ecraseur around the neck of the uterus below the mass of growth. The tumor was then cut off above the point of insertion of the needles, and the stump seared by the Paquelin cautery. The abdominal incision was sewed up, with the stump outside of the abdominal cavity. The patient suffered from some shock. The pulse was rapid and remained rapid for nearly a week. There was no elevation of temperature beyond the two days following the operation. The case progressed rapidly and uninterruptedly to recovery. The slough came away after a fortnight, and the wound healed entirely at the end of two months. The patient was discharged from the hospital six months after entrance. There is no evidence of recurrence at present.

On microscopical examination, the tumor was found to be a growth of the ovary, which had invaded and surrounded the substance of the uterus so completely as to form one mass, it being impossible to distinguish without microscopical examination where the abnormal tissue ended and the normal uterine tissue began. On careful examination, it was found that the whole of the growth had been removed, and that the base consisted of normal uterine tissue. The rapid cellular development had prevented any cystic formation in the growth, so that the tumor was entirely solid. It is too early to form an opinion as to probability of recurrence.

Dr. F. H. Davenport referred to the precocious development of the mammæ and of the pubic hairs sometimes seen in these cases of pathological processes in the genital apparatus of girls.

Dr. E. H. Bradford said that he had expected to find a sarcoma in this case, that being the commonest form of rapidly growing tumor in children. As to the frequency of disease of the ovaries in children, Spencer Wells has recorded only three ovariotomies in children out of a thousand cases.

Dr. C. M. Green reported

A CASE OF PLACENTA PRÆVIA COMPLICATED WITH URÆMIA AND IMPENDING ECLAMPSIA.[1]

Dr. C. W. Townsend reported

PLACENTA PRÆVIA AND URÆMIA IN THE SAME PATIENT.[2]

Dr. A. Worcester asked, in view of the embarrassment of the kidneys, why not use chloroform and avoid the irritation from ether.

Dr. C. M. Green replied that, notwithstanding the theoretical objection to ether in these cases, he had always used it, and had never seen any apparent ill results.

Dr. A. Worcester said that at the Johns Hopkins Hospital it was considered almost criminal to give ether to a patient having any embarrassment of the kidneys.

Dr. G. Haven had seen a case of eclampsia where chloroform was used and where the patient was very blue apparently owing to the chloroform.

Dr. A. Worcester had gone from ether to chloroform simply from theoretical reasons and from published reports, but he had had good results with both of these anæsthetics.

Dr. W. L. Richardson had always used ether and with good results. As regards hæmorrhage after delivery in cases of eclampsia, he had often noticed that this was more than in non-eclamptic cases, even where ether had been used to the same extent. He believed that it was a fortunate provision and one that tended to stop the eclampsia.

Drs. Green, C. E. Stedman and Sinclair believed that the post-partum hæmorrhage was greater in these cases.

Drs. J. G. Blake and Townsend thought that there was naturally no more tendency to hæmorrhage after delivery in eclampsia than after ordinary delivery where the same amount of ether was used, but that we were less ready to check it at the start believing in its salutary effect on the convulsions.

Dr. Minot said that about nineteen years ago he was called to a woman, twenty-four years old, who had labor-pains for several hours. For some days she had complained of a sense of fullness in the head, but without headache, had epistaxis once in the night, and noticed that her ankles were swollen. At 4 a. m., spontaneous rupture of the membranes took place. The os was then hardly dilated, but soft. The presentation was normal. The pains continued through the day, the os slowly dilating. Towards evening the pulse began to rise, and at 7 p. m., was at 120. The os being at that time sufficiently dilated the forceps were applied, and delivery was easily effected. The child, male, was, and is still, living. About a pint of blood was discharged at the birth. The urine, by catheter was very "smoky." The pulse continued rapid, but there was no other unfavorable symptoms until 9 p. m., when a convulsion, with frothing at the mouth, took place, lasting fifteen minutes. Ether was given by inhalation, and after an hour of heavy sleep consciousness returned. At midnight another convulsion occurred. A pint of blood was then taken from the arm, and a quarter of a grain of sulphate of morphia was injected under the skin. Consciousness again returned, but at 3 a. m., of the next day, there was a third and last convulsion, less violent and shorter than the others. The patient did well, although for some hours she was in a confused state of mind. Twenty-four hours after delivery twelve ounces of urine, the secretion of twenty-one hours, were drawn by catheter. It was less dark than before, and was moderately albuminous, and it contained a few transparent casts, with an abundance of rhombic uric acid crystals. The patient was freely purged by jalap and cream of tartar, followed by castor oil, and the urine became normal in a few days.

The plethoric condition of the patient, the epistaxis, and the sensation of pressure in the head seemed to indicate blood-letting in the case, and while it could not, of course, be assumed that life was saved by this procedure, it is certain that no harm followed it.

Dr. R. L. Hodgdon said that he always used chloroform in eclampsia, but he had never dared to do a prolonged operation without the use of ether.

Dr. B. E. Cotting referred to several cases of eclampsia where he obtained favorable results by bleeding.

Dr. J. G. Blake could recall no case out of a very large number where bad results ensued on the use of ether. In a woman now living he had given some twenty years ago ether more or less continuously for thirty hours for post-partum convulsions.

Dr. W. L. Richardson said that the mortality from eclampsia has very markedly diminished since we have early emptied the uterus. Twenty years ago the mortality was stated to be 33 per cent.

Dr. C. M. Green said that Lusk in his edition of six years ago, puts the mortality from eclampsia at 23 per cent., but in careful hands it is undoubtedly much less. He can recall but very few fatal cases at the hospital. Nevertheless, some cases will die even with the best care, and even if they are delivered at once. A great deal depends on the care subsequent to delivery. He remembers one case where the patient was nearly drowned in her saliva, the pilocarpine having no effect on the skin.

Dr. E. J. Foster referred to two cases of labor where there was prolonged etherization and much post-partum hæmorrhage.

Dr. W. L. Richardson, Dr. A. Worcester, and Dr. A. D. Sinclair had not the slightest doubt but that ether favored post-partum hæmorrhage.

Dr. C. M. Green said that ether in any amount predisposed to post-partum hæmorrhage, although he would never hesitate to give plenty of it for operative purposes. The improper use of ether and the one which especially favored hæmorrhage was the use of it in large quantities in the first stage. Another frequent cause of post-partum hæmorrhage was, he believed, the expression of the placenta in too much of a hurry, before the uterus had time to retract. He would set no time-limit for the third stage, but would not attempt to express the placenta until the uterus had firmly contracted several times, and a proper amount of retraction had taken place. Immediate Credé without reference to the state of the uterus was a frequent cause of post-partum hæmorrhage.

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[1] See page 551 of the Journal.

[2] See page 550 of the Journal.

Dr. W. L. Richardson said that he had always taught that there was a third stage of labor. It was therefore absurd to try to expel the placenta until the uterus had begun to contract, or to use Credé's method except when the uterus was hard. He recalled one case of placenta prævia at the hospital where after the delivery of a living child by version he had thoughtlessly put in his hand and pealed off the placenta before the uterus had begun to contract. A severe hæmorrhage took place at once from the open sinuses in the lower uterine segment.

Dr. A. Worcester said that he had had much fewer cases of post-partum hæmorrhage since he had adopted this principle in the management of the third stage.

Dr. S. L. Abbot referred to a case in the days when ether was first used in confinement, where two pounds of ether were given during a labor of 56 hours. The child was finally delivered with forceps after waiting, as was the practice then, perhaps 24 hours longer than we should wait now. It was still-born as might be expected.

Dr. Richardson said that ether given in this way would indefinitely prolong and stop labor.

Dr. Hodgdon said that 10 years ago he had given ether in the first stage so that it indefinitely prolonged the labor, but he had not used it so since then.

Dr. A. Worcester said that he considered ether much inferior to chloroform in quickly relieving the pains of labor, although for obstetric operations he uses ether.

He has for some time used with great success a mixture of bromide of ethyl 1 part, chloroform 3 parts, alcohol 4 parts. Three or four drops are put on a handkerchief and very speedily give relief from pain, although they do not stop the labor, and the patient does not lose consciousness but knows what is going on and is able to obey orders.

The advantages over chloroform are that this mixture is quicker and safer. It is safer because the bromide of ethyl tends to produce hyperæmia of the brain which neutralizes the ischæmia produced by chloroform.

Dr. C. W. Townsend reported briefly

THREE CASES OF OBSTETRICAL INTEREST

which he had seen in the out-patient department of the Lying-in Hospital during the week.

The first case was one of twins, where the first child presented by the feet, sitting cross-legged as it were, in such a way as to prevent delivery. There had been no progress for some time. The pulling down of the leg that was caught gave immediate relief to the mother and was followed by the speedy delivery of a living child. After the delivery of this child the mother's abdomen measured 52 inches in circumference, she being extremely obese. On rupturing the second sac the second child presented O. D. P. extended. Finding that it was impossible to flex the head manually, and that the position was rapidly becoming a brow, ether was given and Dr. Townsend on introducing his hand found that both hands of the child were folded below the chin, in such a way as to prevent flexion. On pushing these out of the way, the head was easily flexed, rotated manually to O. D. A., forceps applied at the brim and living child, number two, at once delivered. The children weighed six and one-half and seven and one-half pounds respectively.

The second case was of interest from the fact that the patient then in labor with her seventh child, gave the history of instrumental delivery each time. She had then been in the second stage for three hours. The child presented at the superior strait O. L. A., good flexion. The pelvis was slightly contracted in all its dimensions, the true conjugate measuring three and three-fourths inches. Delivery was easily accomplished with the Vienna forceps.

Case number three was of interest in showing the use of encouragement and the evils of discouragement. The externe having just had charge of the case of contracted pelvis, jumped to the conclusion that case number three also suffered from the same trouble, as her labor was a long one owing to poor pains, and had expressed the opinion that instruments would be necessary. After a period of several hours of no progress, Dr. Townsend succeeded in bringing about delivery within ten minutes of his arrival at the case, simply by encouragement. This has been well called by Dr. Richardson, the use of mental forceps.

ADDENDUM.

At the reading of the records of the Society at the next meeting, Dr. B. E. Cotting said that he could not let the matter of the use of chloroform as advocated by Dr. Worcester go without protest. Chloroform, has caused death and that, too, whether diluted or not. The series of letters published in the *Boston Medical and Surgical Journal* some fifteen or twenty years ago, under the name of "Inominatus," were all by the same person, all protesting against the use of chloroform, and he was glad to see that the English medical journals had of late years come around to the same way of thinking. The same one who had protested then, would still protest now.

Dr. S. L. Abbot said that as far as he could learn from Dr. Brunton's therapeutics, bromide of ethyl recommended to be used with chloroform, so far from counteracting any of its effects was an extremely powerful drug and would only increase the effects of chloroform.

The Value of Prison Life. — Under the heading "Back from Prison," an advertiser in a German daily paper states that she has just been liberated from prison where she had served a term for libel of a certain reputable physician. She further states that while in prison she had an opportunity, which the extent of her practice precluded before, of going over in her mind the histories of her many thousand cures, and from the material thus obtained she has been able to formulate a method by which she can positively cure consumption and rickets.

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TREATMENT OF ACUTE RHEUMATISM IN THE PARIS HOSPITALS.

Dr. Marcel Baudouin has made the tour of the hospitals of Paris to ascertain the methods in vogue for the treatment of acute rheumatism, and has published the results of his inquiry in *La Semaine Médicale.*

Naturally, the medicine the most in favor is still the salicylate of sodium, which is everywhere the remedy first thought of, and generally in some manner prescribed. According to Dujardin-Beaumetz, it is the only specific medicine, of which, to obtain the full effects, the doses employed should be proportioned to the intensity of the rheumatism. He would prescribe fifteen grains every three hours, day and night, to very acute and febrile cases, and the treatment should be continued several days after the cessation of the pain and fever. There are but two contra-indications to the employment of this medicament, renal impermeability and pregnancy: for patients who may be laboring under the one or the other of these conditions, he would substitute exalgine, phenacetin, or antipyrine.

Talamon, of Bichat Hospital, thinks that there is no contra-indication to the employment of the salicylate, not even albuminuria. It is very important, says Talamon, to give large doses and to push them. Small doses, thirty to forty grains a day, amount absolutely to nothing. Begin with fifteen grains every two hours till you have given six doses; this is enough for the first day. The next day, eight such doses may be given; and this treatment must be kept up four, five, or six days, according to the tenacity and intensity of the malady. Ordinarily, by the fourth day, the fever has fallen, the pains and the articular swellings have ceased. Then the tapering-off method is begun, only four of the fifteen-grain doses being given each day for four or five days, then two doses a day for five or six days, the patient being kept in bed all this time. Relapses call again for the full doses. When the stomach tolerates the medicine badly, it may be given with Vichy water, the patient swallowing the medicine in capsules (cachets), and washing it down with a small glass of Vichy. For neuropathic patients, he would occasionally combine the dose of the salicylate with twenty grains of bromide of potassium.

"All the therapeutics of rheumatism," says Professor Chauffard, "is summed up in two medicines, sodium salicylate and antipyrine." For several years past, he has resorted in preference to antipyrine, giving to adult patients from sixty to one hundred and twenty grains a day. The latter is a maximum dose rarely attained. The effect of the medicine in producing analgesia and fever-fall is immediate, and in most cases the swelling of the joints begins soon to abate. The antipyrine is ordinarily well borne, and produces none of the painful head-symptoms which sometimes follow the salicylate when given in full doses. If the sweating is too profuse, M. Chauffard prescribes concurrently with the antipyrine, several granules of atropine.

There is but one advantage which the salicylate has over antipyrine: it is an agent of elimination which favors diuresis and the removal of waste-proteids. It is, then, a good plan to associate with antipyrine as a corrective the usage of *milk diet* and *diuretic ptisans.*

Professor Straus prescribes salicylate of soda, but he gives it only twice in the twenty-four hours in the dose of forty-five to sixty grains; the first dose may be administered late in the afternoon and the second two or three hours afterwards. A convenient vehicle is peppermint water. He thinks that the effect of the medicament is much more energetic if it be administered in this way, than if the daily quantity (six to eight grammes) were divided into numerous small doses to be given every two or three hours during the twenty-four. The medicine is continued as long as the fever and swellings last; then it is given in diminished doses (the quantity being lessened by about fifteen grains a day) for five or six days. When the salicylate provokes profuse and inconvenient sweats, M. Straus gives an atropine tablet ($\frac{1}{100}$ to $\frac{1}{60}$ grain) in the evening.

M. Straus has no doubt that acute rheumatism is an infectious disease, caused by "an animated agent," but all attempts, thus far, by himself and others, to discover any specific micro-organism have failed. Everything points to the conclusion that it is not a streptococcus nor a staphylococcus, nor the pneumococcus; the efficacy of salicylate of soda is too manifest in typical rheumatism, and its action is too insignificant, if not nil in affections due to the latter microbes to justify any supposition that they have any causal agency in rheumatism, though often found connected with the complications of acute rheumatism and in the pseudo-rheumatisms.

Professor Bouchard associates salicylate of soda (seventy-five grains in the twenty-four hours) with sodium bicarbonate (one hundred and fifty grains a day).

M. Barth, while prescribing salicylate of soda in fairly large doses from the beginning of the sickness till convalescence is well established, insists upon complete rest in bed (at least three weeks) notwithstanding disappearance of the joint-swellings and fever, as an essential condition to good recovery. Where the salicylate is contra-indicated (from pregnancy, cardiopathy, Bright's disease, arterial atheroma), or badly tolerated, M. Barth has recourse to quinine and antipyrine combined (five grains of quinine with ten of antipyrine, three times a day.) At the same time he applies to the affected joints a series of blisters and gives diuretics, tonics, and sometimes vapor baths.

M. Barié, besides treatment by the salicylate of soda which is given in three daily doses of thirty grains *just before meals*, prescribes absolute rest and the application of soothing liminents to the joints which are kept constantly wrapped in wadding. The diet should be principally milk; he does not absolutely prohibit alcoholic stimulants. Is fond of ordering Vichy and other alkaline waters, and if the joint swellings tend to persist, he resorts to revulsives, as iodine paint and cantharidal collodion. In some cases, he finds benefit from rather large doses of phenacetin and exalgine.

M. Comby used to give quinine in acute rheumatism — fifteen to thirty grains a day. Now he trusts to salicylate of soda fifteen grains every two hours in severe cases. Where the latter medicine is not well tolerated, he resorts to quinine, in full doses. As accessory medicines, he prescribes purgatives and diuretics.

In acute rheumatism in children; M. Simon and M. Sevestre trust exclusively to salicylate of soda, giving from thirty to forty-five grains a day to children under six years of age. It is better to give the medicine in three or four large doses (eight to twelve grains) than in numerous small doses during the day. Diet to be almost exclusively milk. The joints are wrapped in wadding and covered with oiled silk.

M. Ollivier has tried antipyrine repeatedly, and not obtained satisfactory results, he has long discontinued the use of colchicum.

"In acute rheumatism, *à frigore*, the salicylate of soda still gives the best results; the daily quantity being from thirty to ninety grains, according to the age of the child."

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FIRST ACTIONS OF WOUNDED SOLDIERS.

In an article on this subject, in the *Popular Science Monthly*, Mr. G. L. Kilmer relates some of his own observations during our civil war, and cites others reported on good authority. The sensation of a soldier when he is first wounded is often out of all proportion to the severity of the wound. His first action when he finds himself wounded is also largely dependent upon what he is doing at the time. It follows, therefore, that the first actions of severely wounded soldiers are very different from each other; but the effect seen on the stage where a man staggers, clasps the wounded spot and then falls is very rarely or never seen in battle. A slight wound is often felt more at the time than a fatal one. A spent ball may make the victim feel as though an arsenal had struck him, whereas the wound which is finally fatal may be either not noticed or may be considered a slight prick. In a general way, when felt at all, bullets through muscle usually produce a burning sensation; when bones are broken, stinging accompanies the burning; when bones are hit but not broken, there is a numbing sensation in the whole region involved in the shock, followed very soon by severe and sometimes intense pain; when muscles and tendons are involved, there is a tugging sensation sometimes very slight; and shell wounds produce feelings similar to those from bullets. Cannon balls, as a rule, leave nothing behind to exhibit feelings. When a man feels that he has been hit, he often has a mixed sensation, as if not quite certain whether he wants to cry or swear. If a soldier is in a state of intense nervous excitement, he may apparently be entirely unconscious of a quickly fatal wound and may continue his way as if nothing had happened until he suddenly drops dead. Well authenticated cases are mentioned in which, after wounds through the heart and even after complete decapitation, the body has remained in the saddle with the arm stretched out as it was before the wound was received, for some seconds before falling. From his experiences upon the battlefield, the author formulates a rule that a man who is hit above the hips comes down. After a wound through an important organ, men, unless much excited at the time, generally sink at once, or reel and tumble with very little self-control. The wound and the fall create a temporary panic, but as long as consciousness remains, they strive to help themselves. A wounded man's first thought is of the rear of the column, not from fear, but because he expects surgical aid from that direction. As long as he can move, he goes towards the place of help; when no longer able to move, he makes himself as comfortable as possible and waits.

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ELECTRIC LIGHTING IN ITS RELATION TO PUBLIC HEALTH.

A Committee of the Society of Public Medicine of France recently communicated a report[1] upon the subject of electric lighting (January 27, 1892), in which the above question is treated with reference to the general effect upon health, and as to its effect on eyesight. The conclusions are as follows:

(1) Under ordinary conditions of use, the electric light does not injure the eyesight.

(2) Electric light is superior to all methods of lighting known at the present time, since it has little or no effect upon the composition of the air and generates but little heat. Its employment may, therefore, be generally recommended for occupied apartments.

(3) The danger of fire arising from the use of electricity can be avoided by a careful arrangement. Some of the accidents are due to the contact of conductors of electric currents. The number of such accidents

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[1] Revue d' Hygiéne, February, 1892.

has diminished, in proportion as the use of electricity has increased, which proves that the accidents which were attributed to it in earlier periods were due to ignorance of the conditions of proper management. Attention should be called to the establishments or plants in which mixed light is used (electricity and gas), and to currents of high tension.

(4) There should be no special danger attributable to electricity in the establishment of central stations. The danger amounts to absolutely nothing if hydraulic motors are employed. If steam is used, then the danger is the same as that which attends any other industry in which coal-furnaces are employed for generating power, and all regulations intended for the protection of the public health and safety which are required for such furnaces or boilers suffice equally well for central electric stations.

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MEDICAL NOTES.

A Practical Use of Bacteria. — It is reported that a few weeks ago a plague of mice threatened to destroy the whole harvest of Thessaly, in Greece. The Greek Government asked Professor Loffler, of Greiswald, to assist it, which he effectually did by inoculating some of the mice, and turning them loose, thus causing a fatal epidemic among them.

Christian Science. — A case has recently been tried in Southern California which has attracted a good deal of attention. A young man suffering from an accumulation of pus in the frontal sinus, which had perforated into the orbit, was attended by a professor of Christian Science, who treated him by the usual expectant methods of that school. After five days the patient died of meningitis, the pus having also perforated into the cranial cavity. In the prosecution which followed, a few statements made by the defendant are interesting. She testified that Christian Science treated strychnine poisoning, the bite of a rattlesnake, small-pox, cholera and fevers in the same way. She admitted that surgeons were necessary in cases of broken bones, but that in the case at issue, surgery was not admitted, and that the pus which had accumulated would, by her system, be allowed to remain in the body. The jury, after remaining out all night, finally returned a verdict of not guilty. It was generally believed that this result was reached because the defendant was a woman, and that many women had appeared in court and did all that they could to elicit sympathy.

The Society of the Red Cross. — The fifth international conference of this society was held in Rome during the last week in April. Most of the nations of the earth were represented, and many distinguised men were sent as delegates. The Geneva treaty, from which the society may be said to have begun its existence, was signed in 1864 by France, Belgium, Italy, Sweden, Portugal, Switzerland, Holland, Spain, Denmark, and several German States. The United States was admitted in 1882. Conferences have been held at varying intervals, this being the fifth. The King of Italy has given ten thousand francs for investigations as to the best method by which each soldier on going into battle may be provided with materials for immediate use if wounded. Medals will also be prepared as prizes in an international exhibition of materials and apparatus for use on the battlefield. This exhibition will be held in connection with the next international medical congress. Among the subjects discussed were: the practical use of floating hospitals; the protection of the red cross emblem from unauthorized use, as for proprietary medicine advertisements, and the like; free transportation of supplies, and popular instruction in red cross methods.

The Stomach and the Corset. — In a recent essay, published in Paris under this title, Dr. Chapotôt, among other disadvantages of tight lacing, describes its effect upon the stomach, especially in connection with the gurgling sounds in the epigastric region often noticed in young women. These noises he attributes to a vertical bilobulation of the stomach. The air, during inspiration with any fluid present, is pushed from the upper to the lower lobe and during expiration is forced back again by the pressure of the abdominal muscles. In passing by the constriction, this air and liquid produce the characteristic gurgling sounds. If the constriction is removed the sounds are no longer heard.

NEW ENGLAND.

The American Surgical Association is now in session in Boston. On Tuesday morning the President's Address was delivered by Dr. Phineas S. Conner, in the Natural History Building. Several interesting papers were read and discussed, a detailed account of which will be given in our columns next week. Between thirty and forty members from other cities are present.

The following officers and members were elected at the Executive Session: President, Dr. N. Senn, of Chicago; Vice-Presidents, Dr. W. W. Keen, Philadelphia, Dr. Chas. B. Porter, Boston; Secretary, Dr. J. R. Weist, Richmond, Ind.; Treasurer, Dr. John B. Roberts, Philadelphia; Recorder, Dr. J. Ewing Mears, Philadelphia; Members of Council, Dr. Roswell Park, of Buffalo, and Dr. R. F. Weir, New York; Member of the Executive Committee of the Congress of American Physicians and Surgeons, Dr. R. McLane Tiffany, Baltimore — alternate, Dr. James McCann, Pittsburgh.

It was decided to hold the next meeting in Buffalo, in May, 1893; and Dr. Roswell Park was elected Chairman of the Committee of Arrangements.

The following were elected to membership: Dr. John B. Deaver, Philadelphia; Dr. Frederick H. Gerrish, Portland, Me.; Dr. Wm. S. Halstead, Baltimore, Md.; and Dr. H. R. Wharton, Philadelphia.

Centennial Celebration of the Connecticut Medical Society. — The Connecticut Medical Society was organized in New Haven, on May 25, 1792. The centennial celebration was held in the same city last week, and was very largely attended. Several interesting papers were read, describing the condition of medicine, in New England, prior to, and subsequent to 1792. The following officers were elected: President, C. B. Newton, M.D.; Vice-President, Francis D. Edgerton, M.D.; Secretary, N. E. Wordin, M.D.; Treasurer, W. W. Knight, M.D.

NEW YORK.

The Mortality Report for the Week ending May 21st, shows a gratifying improvement in the health of the city. The number of deaths was 854, which is 26 below the average of the corresponding weeks for the past five years, and represents an annual death-rate of 24.48. There was no death from typhus fever, and only one from small-pox reported. Measles, scarlet fever and diphtheria, however, still continue very prevalent.

Relief for the Overcrowded Asylums. — The sale to the city of a portion of Ward's Island, hitherto owned by the State, having been authorized by law, the Board of Emigration Commissioners, who formerly had charge of it, have transferred it to the municipal authorities: and the work of relieving the overcrowded city asylums for the insane has already commenced, by the occupation of the buildings that have been used by the Emigration Bureau, some six or seven hundred patients from the institutions on Hart's and Blackwell's Islands having been removed to them.

The Manhattan Hospital. — The handsome and well-appointed new buildings of the Manhattan Hospital and Dispensary was opened for inspection on May 26th, when a reception was given by the Board of Managers and the Ladies' Association of the Hospital. This institution is doing an excellent work in the upper part of the city, the district covered by it extending from 86th Street to Spuyten Duyvil and from Sixth Avenue to the Hudson River. It has been closed for two months on account of the improvements being made.

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Miscellany.

SUBCUTANEOUS BLOOD INJECTION AND TRANSFUSION.

Von Ziemssen,[1] in a paper before the Congress for Internal Medicine in Leipsic, describes his method of injecting blood subcutaneously as a substitute for transfusion. Blood is taken from a vein through a hollow needle into a sterilized syringe and immediately injected into the subcutaneous tissue of the thigh or back. It is then massaged actively until no tumor is felt. In this way it is prevented from coagulating, at least until it has become thoroughly diffused in the subcutaneous tissue. By this method he has injected as much as 400 cubic centimetres at one time. The process is painful so that it is generally necessary to narcotize the patient. The region remains sensitive for some time but shows no signs of inflammation.

For transfusion he employs the following method, and has never produced any disagreeable results with it. A hollow needle is introduced into the vein of the person from whom the blood is to be taken and another one into the vein of the patient. Three syringes each holding 25 cubic centimetres are thoroughly cleaned and warmed, blood is then drawn into the syringe which is immediately detached and connected with the needle in the patient's vein and emptied before coagulation can begin. While the first syringe is being emptied, the second is being filled. The first after being emptied is washed in sterilized water while the third is being filled with blood. When the third is full, the first has been washed and is ready to be used again. In this way an almost constant stream of blood passes from one person to the other. The needles are put into the vein directly without any previous incision of the skin.

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THE BACILLUS OF ECLAMPSIA.

Gerdes,[1] in the pathological department of the University at Halle, has found a bacillus in the liver, lungs, kidneys and blood of a severe case of eclampsia. Cultures of this bacillus when inoculated in rats and mice cause shallow respiration, coma, subnormal temperature, and in the mice, convulsions. It is very virulent, causing death in a short time. In guinea-pigs intravenous injections caused convulsions, intraperitoneal did not. The bacilli were found often in the form of bacillary emboli, the starting point of which was probably a focus in the placenta.

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INTESTINAL EVACUATION IN OPERATIONS FOR OBSTRUCTION.

Mr. Greig Smith,[2] in a paper read before the Royal Medical and Chirurgical Society, advocates operative evacuation and drainage of intestinal contents in cases of obstruction of the bowels where distention is a marked feature. Mere over-distension of the intestinal walls is a potent factor in the production of obstruction: physical and physiological causes combine to render an over-distended gut incapable of passing onwards its contents. Therefore operative treatment of intestinal obstruction is not completed until this continuing cause is removed. According to the nature of the case, the author believes that the measures adopted should be one of the following: (1) Simple evacuation of contents with immediate return of the gut; (2) evacuation with drainage for several hours or days, and subsequent closure and return of the gut; (3) evacuation with drainage that may be permanent. In operations, while the stomach is distended with fluid, anæsthesia should never be used. Either the stomach should be artificially emptied, or the operation should be performed with the help of a local anæsthetic. Anæsthesia should be continued only for so long as is necessary to make the parietal incision and place the sutures. These measures are intended to supplement and complete the ordinary surgical methods for relief of the strangulation, and in no sense to replace these.

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[1] Münchener med. Woch., May 10th.

[1] Deutsche med. Woch., May 12th.

[2] British Medical Journal, March 12, 1892.

A UTERUS IN A SCROTUM.

A curious case of hermaphroditism was recently reported by M. Bœkel to the Académie de Médicine.[1] A man, twenty years of age, has had since birth an inguinal hernia, to relieve which an operation for radical cure was undertaken. The hernial sac was found empty, but in its posterior wall there was found, covered by peritoneum, a triangular body, which was supposed to be an intestinal diverticulum. Further examination, however, showed that the inguinal canal was empty, and that the organ in question had no connection, whatever, with the digestive tube. Compression of the abdomen above the ring resulted in the extrusion through the external inguinal ring of an ovoid pearly body resembling the testicle. Lying parallel and above this body, and united to it, was a fringed cystic organ, which could not be anything else but the Fallopian tube. All these structures were carefully isolated by dissection and extirpated. Cicatrization was complete at the end of ten days. Examination of the extirpated mass revealed (1) a bicornate uterus, the mucous membrane of which was lined by ciliated epithelium; (2) a Fallopian tube and a testicle provided with an epididymis and a vas deferens; (3) a broad ligament enclosing these organs. This is the only known example of female sexual organs being contained in the scrotum of a man. The patient's appearance and habits were entirely those of a male.

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THERAPEUTIC NOTES.

Calomel for Hemorrhoids. — James[2] has for some years treated hemorrhoids by applying calomel to them with the finger alone, especially when inflammatory action was obvious in the hemorrhoidal mass, characterized by mucous discharge and hæmorrhage. All these symptoms were speedily relieved.

Methyl-Blue in Tubercular Affections. — Althen[3] has used methyl-blue for pulmonary and laryngeal tuberculosis with very good results. It may also be used for the local treatment of tubercular ulcers. Internally twenty-two grains were given daily. Strangury if it occurs may be relieved with flaxseed tea. Occasionally gastric symptoms appear, in which case it is necessary to suspend the treatment and to begin again with small doses gradually increased.

The Treatment of Piles with Hamamelis.— In a paper on the treatment of piles and allied affections read before the Medical Society of London, Dr. Lauder Brunton[4] recommends, especially brisk horse exercise. Another useful exercise is to touch the toes with the fingers, keeping the knees straight, several times every morning. Of the utmost importance is a regular action of the bowels. If the piles tend to come down much, it is better for the patient to get into the way of emptying the bowels every night before going to bed. It is always well for the patient to wash the anus immediately after a motion, with a soft sponge. A small pledget of prepared wool dipped in hamamelis should be introduced within the anus, and another introduced so far that a few fibres of it at least are caught by the sphincter. The external pledget soon becomes felted together into a pad, retained by the fibres caught by the sphincter. Where the piles are chiefly internal, the hamamelis may be applied in the dose of half-a-drachm to a drachm, either diluted with water or undiluted, by injecting it within the anus by means of a glycerine syringe. Itching and eczema may be relieved by eau de cologne.

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[1] Lancet, April 30th.
[2] British Medical Journal, February 20th.
[3] Münchener med. Woch., January 5th.
[4] Lancet, March 12th.

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Correspondence.

ANOTHER MUSICAL ANUS.

University of Michigan,
Ann Arbor, May 29, 1892.

Mr. Editor: — Your correspondent, K., refers to Dante's mention of a case of musical anus. I cannot compare the references now, but Montaigne, in one of his many essays interesting to medical men ("On the Force of Imagination"), gives the following:

"St. Augustin (*de Civit. Dei.* xiv, 24, and the Comment. of Vives, *in loco*), speaks of having seen a man who could command his back trumpet to sound as often as he pleased, and Vives, supports this statement with another example, in his time, of one who could do this in tune."

The above seems to be of sufficient interest — pathological as well as literary — to be put on record.

Yours truly, D.

RECORD OF MORTALITY

For the Week ending Saturday, May 21, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Measles.	Diphtheria and croup.
New York	1,515,301	854	360	18.00	23.88	3.24	4.56	5.52
Chicago	1,099,850	457	211	14.52	14.08	1.98	.44	4.18
Brooklyn	806,343	361	139	14.84	19.32	1.96	2.24	8.12
St. Louis	451,770	126	40	12.64	3.16	—	.79	1.58
Boston	448,477	188	45	14.84	16.96	5.30	—	6.36
Cincinnati	296,908	92	35	14.17	8.72	3.27	—	4.36
Cleveland	262,000	85	35	10.62	16.52	1.18	—	2.36
Pittsburg	240,000	85	33	5.90	17.70	1.18	—	2.36
Milwaukee	240,000	71	32	8.46	16.92	1.41	—	2.82
Washington	230,392	106	23	10.34	6.58	.94	—	2.82
Nashville	76,168	27	6	11.10	3.70	—	—	3.70
Charleston	65,165	28	16	32.13	3.57	—	—	—
Portland	36,425	13	1	—	30.76	—	—	—
Worcester	84,655	32	10	18.78	6.26	—	—	9.39
Lowell	77,696	31	7	6.46	6.46	—	—	—
Fall River	74,398	34	17	2.94	26.46	—	2.94	—
Cambridge	70,028	22	5	—	13.65	—	—	—
Lynn	55,727	15	4	13.33	20.00	—	—	6.66
Lawrence	44,654	14	7	14.28	7.14	—	—	—
Springfield	44,179	14	4	14.28	21.42	—	7.14	7.14
New Bedford	40,733	20	8	10.00	25.00	5.00	—	—
Holyoke	35,637	13	5	30.76	23.07	—	15.38	7.69
Salem	30,801	10	1	—	10.00	—	—	—
Chelsea	27,909	8	0	12.50	25.00	—	—	—
Haverhill	27,412	11	1	—	36.36	—	—	—
Brockton	27,294	9	2	—	33.33	—	—	—
Taunton	25,445	8	2	—	12.50	—	—	—
Gloucester	24,651	5	3	—	60.00	—	—	—
Malden	23,031	8	1	12.50	—	—	—	—
Fitchburg	22,037	4	1	—	—	—	—	—
Waltham	18,707	4	1	—	—	—	—	—
Pittsfield	17,281	4	2	—	50.00	—	—	—
Quincy	16,723	6	1	—	—	—	—	—
Northampton	14,990	8	1	—	—	—	—	—
Newburyport	13,947	6	2	33.33	—	—	—	—
Brookline	12,103	2	1	—	50.00	—	—	—
Medford	11,079	3	0	—	33.33	—	—	—
Everett	11,068	5	2	20.00	—	—	—	—
Hyde Park	10,193	6	0	—	16.66	—	—	—
Peabody	10,158	5	0	20.00	20.00	—	—	—

Deaths reported 2,711: under five years of age 1,066; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 395, acute lung diseases 487, consumption 316, diphtheria and croup 128, scarlet fever 60, measles 55, diarrhœal diseases 47, typhoid fever 45, cerebro-spinal meningitis 22, whooping-cough 14, erysipelas 14, malarial fever 9, small-pox 1.

From diarrhœal diseases New York 10, St. Louis 8, Charleston 5, Chicago 4, Brooklyn and Cleveland 3 each, Boston, Cincinnati, Pittsburgh, Washington and Lawrence 1 each. From typhoid fever Chicago 24, New York 5, St. Louis 3, Boston, Washington, Charleston and Newburyport 2 each, Cleveland, Worcester and New Bedford 1 each. From cerebro-spinal meningitis New York 8, Brooklyn 4, Chicago 3, Washington 2, Boston, Nashville, Worcester, Lynn and Hyde Park 1 each. From whooping-cough New York 7, Chicago and Cincinnati 2 each, Cleveland, Charleston and Worcester 1 each. From erysipelas New York 4, Chicago 3, St. Louis and Cincinnati 2 each, Cleveland, Milwaukee and Washington 1 each. From malarial fever New York 4, Brooklyn 2, Boston, Charleston and Fitchburg 1 each. From small-pox New York 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 10,188,449, for the week ending May 14th, the death-rate was 20.4. Deaths reported 3,987: acute diseases of the respiratory organs (London) 304, measles 222, whooping-cough 160, scarlet fever 58, diphtheria 38, diarrhœa 36, fever 20.

The death-rates ranged from 12.8 in Croydon to 28.1 in Wolverhampton; Birmingham 21.7, Bradford 20.7, Huddersfield 23.8, Hull 18.8, Leeds 17.4, Leicester 20.3, Liverpool 24.6, London 19.5, Manchester 24.6, Newcastle-on-Tyne 19.0, Nottingham 15.0, Sheffield 25.0, Sunderland 22.8, West Ham 13.0.

METEOROLOGICAL RECORD,

For the week ending May 21, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...15	30.14	51	53	49	97	100	98	S.E.	N.W.	10	9	R.	R.	.99
M..16	29.41	64	76	51	85	41	63	S.W.	W.	18	16	O.	O.	T.
T..17	30.06	63	73	56	39	34	36	W.	W.	10	12	C.	C.	
W. 18	30.03	65	75	55	35	57	46	N.W.	E.	14	9	C.	C.	
T..19	30.06	48	50	45	80	82	81	E.	E.	14	21	C.	R.	T.
F..20	30.00	42	44	40	100	85	92	N.E.	N.E.	24	6	R.	O.	.77
S..21	30.08	41	45	42	85	100	92	E.	E.	22	25	R.	R.	.66
☞	29.96	54	59	48	62	46	72			16	14			.03

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 21, 1892, TO MAY 27, 1892.

Captain Henry S. Turrill, assistant surgeon, U. S. A., granted leave of absence for three months.

Captain Aug. A. DeLoffre, assistant surgeon, U. S. A., the leave of absence on surgeon's certificate of disability granted in S. O. 93, A. G. O., April 20th, is extended one month on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 28, 1892.

T. J. Turner, medical director, retired, granted one year's leave of absence with permission to leave the United States.

H. N. T. Harris, assistant surgeon, promoted to passed assistant surgeon.

George B. Wilson, assistant surgeon, promoted to passed assistant surgeon.

Manly F. Gates, assistant surgeon, ordered to Naval Hospital, Portsmouth, N. H.

J. F. Urie, passed assistant surgeon, detached from Naval Hospital, Portsmouth, N H., and to the U. S. S. "Chicago."

J. C. Byrnes, passed assistant surgeon, detached from the U. S. S. "Chicago" and granted three months' leave of absence.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING MAY 21, 1892.

Murray, P. D., surgeon. Granted leave of absence for fifteen days. May 14, 1892.

Hamilton, J. B., surgeon. Granted leave of absence for eleven days. May 20, 1892.

Gassaway, J. M., surgeon. Granted leave of absence for ten days. May 10, 1892.

Godfrey, John, surgeon. When relieved as medical inspector of immigrants, to resume command of station at New York. May 11, 1892.

Irwin, Fairfax, surgeon. To proceed to New Bedford, Mass., on special duty. May 17, 1892.

Carter, H. R., surgeon. To proceed to Gallipolis, Ohio, on special duty. May 18, 1892.

Wheeler, W. A., surgeon. Detailed as medical inspector of immigrants, port of New York. May 11, 1892.

Banks, C. E., passed assistant surgeon. To assume command of Service at Portland, Me. May 11, 1892.

Devan, S. C., passed assistant surgeon. To assume command of Service at Norfolk, Va. May 11, 1892.

Perry, T. B., passed assistant surgeon. To assume charge of Cape Charles Quarantine Station. May 14, 1892.

Woodward, R. M., passed assistant surgeon. Granted leave of absence for five days. May 16, 1892.

Vaughan, G. T., passed assistant surgeon. Detailed as recorder of Board for the physical examination of candidates, Revenue Marine Service. May 9, 1892,

Wertenbaker, C. P., assistant surgeon. Granted leave of absence for seven days. May 10, 1892.

Houghton, E. R., assistant surgeon. To assume command of Service at Vineyard Haven, Mass. May 11, 1892.

MAINE MEDICAL ASSOCIATION.

The fortieth annual meeting will be held in Common Council Chamber, City Building, Portland, Me., Wednesday, Thursday and Friday, June 8th, 9th and 10th. The Annual Oration by A. H. Burbank, M.D., on Thursday evening, after which there will be a reception and banquet, given by the physicians of Portland.

Edwin M. Fuller, M.D., *President.*
C. E. Williams, M.D., Auburn, *Secretary.*

RECENT DEATHS.

Thomas G. Richardson, M.D., died in New Orleans, May 26th, aged sixty-five. During the war he was medical director on the staff of General Bragg. In 1868 he went to New Orleans as Professor of Anatomy in the University of Louisiana. He was president of the American Medical Association in 1879.

August Wilhelm von Hofmann, M.D., Professor of Chemistry in Berlin, died May 5th, aged seventy-four years. In 1848 he was called from Bonn to London where he was connected with the School of Chemistry until 1862, at which time he was called to Berlin. His most important work was in connection with the chemistry of the coal-tar derivatives and his discovery of the aniline colors.

BOOKS AND PAMPHLETS RECEIVED.

Catalogue of the Harvard Medical School Association, 1892.

Thirty-first Annual Report of the Cincinnati Hospital for the Year 1891.

The Fifty-third Annual Report of the Boston Lunatic Hospital for the Year 1891.

The Annual Report of the Health of the Imperial Navy for the 23d year of Meiji (1890).

Thirty-fourth Annual Report of the Washingtonian Home for the Year ending April 25, 1892.

The Science and Art of Midwifery. By William Thompson Lusk, A.M., M.D. New edition, revised and enlarged. New York: D. Appleton & Co.

A Baby's Requirements. By Elizabeth Robinson Scovil, Superintendent of Newport Hospital, Newport, R. I. Philadelphia: Curtis Publishing Company. 1892.

Eleventh Annual Report of the State Board of Health of Illinois for the Year 1888, with an Appendix containing the Official Register of Physicians and Midwives, 1892.

Clinical Lecture: Tenotomy by Open Incision for Talipes Equinus; Torticollis from Rheumatoidal Arthritis; Subcutaneous Tenotomy of Sterno-Cleido-Mastoid for Torticollis. By H. Augustus Wilson, M.D., Philadelphia. Reprint. 1892.

Addresses.

THE MEDICAL PROFESSION AND THE COMMONWEALTH.[1]

BY FRANK WINTHROP DRAPER, M.D.

In the discharge of the distinguished duty which places me in your presence at this time, I ask your indulgent attention to a study of the relations which, as physicians, we hold toward the Commonwealth.

Our obligations to the State derive added significance from the circumstances attending the incorporation of the Society of which we are the Fellows. It was at the time when the national government was in revolutionary instability and our own Commonwealth was in its infancy, that a few medical men, chiefly resident in Boston, saw the desirability of an association that should bring qualified practitioners into closer relations for their own benefit and for the good of the public. Their purpose was to make a "body politic and corporate" which should establish "a just discrimination" between educated practitioners and ignorant pretenders in medicine, a purpose that had in view the welfare of the community in its broadest sense. They therefore asked the General Court to give permanent expression to this object by granting the name of the Commonwealth to the new guild, and by bestowing corporate privileges that should correspond therewith. That request was granted and we are the *Massachusetts* Medical Society, broader than medical sectarianism, abhorring exclusiveness, loyal ever to the State's highest interests, proud of the charter, which, bearing the historic names of John Hancock and Sam Adams in attestation of its validity, the State bestowed upon us in 1781, the first document of the kind granted under the constitution. The Commonwealth thus became our *alma mater.* Besides giving her name to our newly created body, she endowed us with valuable rights; and she bestowed other encouraging assistance and recognition. If she did not actually rock the infant "body corporate" in the "cradle of liberty," she added a flavor of legality and dignity to our first proceedings by loaning the "county court-house in Boston," as the place of meeting for Dr. Holyoke and his thirty fellow-founders, and placed us under new obligations of gratitude later by permitting meetings of the Society in the State-house and in other public buildings belonging to the State.

Such was the beneficent and disinterested aim of our fathers in founding this association; such the gracious and helpful attitude of the Commonwealth in aiding that foundation. It is becoming in us, the heirs and beneficiaries of the endowment thus established, to ask how the aim of its creators has been fulfilled during all the years of the century now drawing to its close; to what degree the prosperity of the State has been advanced by the Fellows of this organization; and what are our present duties to the public in the discharge of the trust which our organic charter imposes. The little company of physicians which assembled in the county court-room near Scollay Square, in November, 1781, has by normal growth become a multitude so large that it requires an entire block of buildings to supply the needs of its anniversary meetings, outgrowing all less adequate accommodations. Keeping pace with the progress which has made our Commonwealth a leader in all things that promote the highest civilization, our organization holds, and has long held the highest rank as the representative of the best type of scientific and practical medicine.

Massachusetts, in founding its constitutional government in 1780, established three co-ordinate, yet independent, departments; and ordained that the legislative, the executive and the judicial functions should be forever distinct. This three-fold distribution of organic powers and duties in the State invites consideration of our relations, as physicians, to each of the fundamental departments, and leads us to ask what has been accomplished, and what remains to be done in directions wherein the Commonwealth and the medical profession are mutually concerned.

I. To what extent, then, in the first place, has the State, through its General Court, as its legislative department, enacted laws that are of particular interest to the members of our profession as a class? An inspection of the public statutes will be rewarded with the discovery of the fact that when we compare the legal privileges and obligations which to-day apply to Massachusetts physicians, the obligations far exceed the privileges. The State exacts more than it gives. When we have mentioned exemption from jury and militia duty, some preferment of the claims of physicians against insolvent estates, the rarely used permission to dissect dead bodies, and the happily infrequent opportunity of attending a judicial hanging, we have included all the essential benefits which the Commonwealth bestows on medical practitioners. It is not a long list of special indulgences, or a very valuable one.

The critical student of the public statutes who searches for any evidence therein that the Commonwealth through its legislature has ever set up any standard of education or skill on the part of medical men, will find little in existing laws to reward him for his inquiry. There is no attempt in the statutes to classify or to define "physicians," to declare by legislative act who may practise medicine and who shall not. Massachusetts has ever been hospitable to all sorts and conditions of men, and she welcomes with a reckless graciousness any who choose to pass her open door. She knows no sects, no schools, no differences among physicians; all doctors are alike to her, and, according to the assembled wisdom of her law-givers, they can safely be left to take care of themselves according to the principles of the common law.

This attitude of Massachusetts, allowing unrestricted freedom in the practice of physic, has exposed the State to much criticism. It has given rise to the impression that her present policy of non-interference with medicine has always prevailed, and that she is now simply carrying forward a traditional rule of conduct in obstinate indifference to the lessons of experience learned in other and younger communities. This inference is incorrect. Long before any of the modern devices for statutory regulation of medical practice were announced, long before many of the Commonwealths which are now taunting us had been staked out in the primeval wildernesses of the West and Northwest, Massachusetts saw the need of controlling the pretensions and active arrogance of charlatanry within her borders and the clear duty of bestowing her recognition upon reliable men and women.

We need not look beyond the words of our own charter of incorporation to find full evidence that long ago the State discriminated sharply between those who merited confidence and those who deserved to be restrained. The whole document, from its preamble to its conclusion, is filled with the flavor of this wholesome feeling. But that which applies itself chiefly to our purpose in this regard is the remarkable sentence which, like a strong back-bone, is built solidly into the very middle of the charter:

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[1] The Annual Discourse delivered before the Massachusetts Medical Society, June 8, 1892.

"*And whereas it is clearly of importance, that a just discrimination should be made between such as are duly educated and properly qualified for the duties of their profession, and those who may ignorantly and wickedly administer Medicine, whereby the health and lives of many valuable individuals may be endangered, or perhaps lost to the community:*

"*Be it therefore enacted by the authority aforesaid,* That the president and fellows of said society, or other such of their officers or fellows as they shall appoint, shall have full power and authority to examine all candidates for the practice of physic and surgery, who shall offer themselves for examination, respecting their skill in their profession."

This placed a premium on proper qualifications and proved fitness. It established a standard and made our society the keeper of that standard, and if with the recently accepted Bill of Rights in popular remembrance, it did not forbid the practice of medicine by those who neglected or failed to become licentiates under this charter, it nevertheless gave the community, what it had not had before, a chance to have its medical practitioners classified according to their worth and learning. It was a most responsible function to place upon this young organization, but the trust was adequately fulfilled then and is to-day being fulfilled; and the men and women who possess the letters testimonial of the censors of the Massachusetts Medical Society attesting their demonstrated and approved knowledge and fitness need no further passport to the full confidence of the people and no better certificate to distinguish them from those who "ignorantly and wickedly administer medicine."

But broad as our charter was, in its permissive provisions, it was not in the least useful as prohibitive legislation. We might admit all duly qualified practitioners to our ranks, we had no control over the disqualified pretender who cared little for the privileges which the Massachusetts Medical Society offered. This weak negative side in the then current statutes came at length to be seen, and in 1818 a law was passed which was designed to remedy this defect. It is of interest to us that the State continued to turn to this Society to aid in the fulfilment of its purpose. The statute provided that every person practising physic or surgery in Massachusetts, without a medical degree from some college or university, or without being licensed by some medical society, or college of physicians, or by three Fellows of the Massachusetts Medical Society to be designated in each county by the Councillors, should not have "the benefit of law for the recovery of any debt, or fees, accruing for his professional services"; and every licensed practitioner was required to deposit a copy of his license with the clerk of the town where he resided. Just a year later, the general court modified its predecessor's work and enacted that no person entering the practice of physic or surgery after a specified date should be entitled to the benefit of law for the recovery of any debt or fee for his professional services unless, previously to rendering those services, he had been licensed by the regularly appointed censors of the Massachusetts Medical Society or had been graduated a Doctor of Medicine in Harvard University.

This law, it will be observed, distinctly recognized the principle of the regulation of medical practice, and this was the only good purpose which it served. It had two ludicrously weak features; it did not provide any punishment for failure or neglect to procure the required license, and while it presumptively made the way of the irregular practitioner a difficult one in the matter of collecting his fees, it left him perfectly free to do what no reputable physician ever does, it left him free to take his pay in advance. Nevertheless, the law was so satisfactory and acceptable in its working, that it was re-affirmed in all its main features in the Revised Statutes of 1836, seventeen years later, this Society being still designated by name as the authority to manage the machinery of examination and licensing; but there was this important modification — the courts were no longer closed to unlicensed physicians. This anomalous statute (*vox et preterea nihil*) remained in force without amendment until 1859, when it dropped out of sight in the general revision of the laws made by the legislature of that year. Since its disappearance from the statute book there has been nothing unlawful in "ignorantly and wickedly administering medicine" to the people of Massachusetts in violation of any statute; the principles of the common law are the only safeguard.

Meanwhile, during this period of thirty years, a wave of legislative virtue has swept over the land with reference to the regulation of medical practice. One State after another has passed restrictive laws of greater or less stringency but with the single aim of discouraging quackery. How effective these laws have been in accomplishing their purpose, or how zealously they are executed, in the various communities, we are not now concerned in determining; the suggestive fact is that Massachusetts stands almost alone in her attitude of toleration. Of one result of this state of affairs we are all clearly aware. The action of neighboring States, near and more distant, in requiring irregular practitioners to move on and to stand not upon the order of their going, has brought to our too hospitable territory a horde of medical pretenders who have not been slow in discovering the advantages of an asylum here. It is safe to state that never in the history of the Commonwealth has such a wide variety been offered to her people in the matter of choosing a medical counsellor in time of sickness, and that never has the class of charlatans been so numerous or so haughty.

And what a motley company they are, these disreputable parasites upon the medical profession! They offer to the student of anthropology a great diversity of types, ranging all the way from the long-haired male Indian doctor to the short-haired female Christian scientist; creatures with "natural" and supernatural powers, extraordinary owners of superior intellects who find no difficulty in the problem of curing the incurable; bio-chemists, nature-pathists, mesmerists, vivopaths, psychopaths, botanic healers, magnetic healers, — a great procession of social pests with labels designed to captivate the unwary and the credulous.

But these people who boldly affect superiority by announcing themselves openly as irregular practitioners, and by assuming an eccentric or distinctive title in proof of it, are not the worst representatives of their class. The charlatans who are most harmful are those who deliberately and fraudulently take on the simple designation of "physician," and so far as any outward sign is concerned are not to be distinguished by the public from the best and noblest members of our profession.

Then, there is another form of fraud which manifests itself in the shape of "medical institutes." These are evidently business enterprises simply, and the management being in the hands of several persons, who are always announced as distinguished, successful and trustworthy exponents of medical science, the victims of disease read the obvious lesson that in a multitude of such counsellors there must be safety.

But, however, we may classify and differentiate these people, they all have certain characteristics in common; there is nothing beneficent in their motives or actions; they are to the last degree mercenary; they are busy obtaining money under false pretences; they add nothing to the common stock of knowledge; they defile the columns of the daily press and of the religious weekly journals with disgustingly suggestive notices of their pretensions and insinuating invitations to walk into their parlors. Through their advertisements, they make open solicitations to the victims of lustful practices to add crime to imprudence, and they cover with the thinnest disguise their public and defiant announcements that they will commit unlawful acts and will take all risks of detection and exposure. They deface all accessible surfaces with their bold and lying promises, and offend good morals by their too open allusions to unmentionable subjects. Like juggling fiends, they take advantage of every form of human misery to raise hope where hope is vain, and they wickedly and cruelly draw the last possible dollar from their credulous victims, who get small comfort from the fact that payment has been made in advance for the wretched disappointment of unfulfilled agreements. If in such a case death comes to the relief of these double sufferers, the ignorance of the only physician recognized by the statutes in such a relationship is attested by the manner in which the required certificate of the cause of the death is executed, sometimes unintelligibly, sometimes fraudulently, covering a crime under the name of an innocent disease, and always raising a doubt and question of the value of such data for the purpose of vital statistics.

Can it be possible that Massachusetts, which has long defended its claim to the possession of superior wisdom in the care of all matters pertaining to public health and public morality, is willing to tolerate this state of affairs indefinitely? Is not her indifference reprehensible? And have not we, as physicians, remained far too quiescent under these growing evils? Have we not evaded a duty while we maintained a neutrality? Ought we not now to speak out boldly and persistently until some effective measure has been adopted to control and suppress the fungous growth of quackery? It is to legislation, supported by an enlightened public sentiment, and rendered fruitful by an energetic enforcement, that we must look for the real remedy, legislation that shall be practical without being cumbrous or needlessly burdensome. This is not the occasion for outlining the details of such legislation; whether the statute should supply a method of registration administered by some already established board, like the State Board of Health; or should require examination and license through the agency of a purely medical board; or should be framed upon the model of the English law which forbids the false and fraudulent use of any name, title or description, implying that its user is a physician or surgeon, when he has not been educated or licensed as such, — all these matters may safely be left to legislative wisdom. But the main point is that the Commonwealth should afford its citizens some guarantee that the persons who are permitted to practise medicine are trustworthy by virtue of education. Above all, let it be understood and insisted upon that this guarantee, with its attendant conditions and penalties, is not a matter into which sectarian medicine enters in any degree. Let there be an avoidance of all differences relating to schools of practice. Let not the smoldering embers of medical contention be drawn out of the ashes and fanned into life for the gratification of controversialists. Let it be remembered that this is not a question of therapeutics or of medical ethics, but a question of medical education, with the fundamental purpose of excluding from medical practice those who are unfit for it through ignorance or wickedness.

But, some will say, how does this matter concern the Massachusetts Medical Society, as a society? Why need this organization trouble itself to take any part in securing legislation against quackery? Are we not in the possession of an indefeasible charter, with ample protection of our rights and privileges as physicians? Does not the public recognize in this association a body of medical men and women offering ample evidence of the trustworthiness and intelligent skill that are desired? If any educated physician in Massachusetts wishes to acquire the benefits of this recognition, by entering this fellowship, is not the way easy and the method simple? Why need we, an old and honored body of regular physicians, fret about quackery? Do not the charlatans give us new and profitable business by their blunders? Why should we meddle with the inherent right of every individual to choose his adviser in case of injury or sickness? Will not the prudent man make seasonable inquiry and select the best; and cannot we wisely leave this decision without dictation, sure that in the long run the fittest will survive? Why need we ask to have new burdens and restrictions placed upon us?

From the point of view of expediency and propriety, as they apply to this Society, this course of reasoning is clearly correct. This organization will do well to maintain its independent attitude. It has no wish for a renewal of the legislation which formerly made it the sole censor of medical practice in this State. It is content to attend to its own affairs. It has no ambition to pose as a monopolist in medicine. It sets an example in medical tone, and in its traditions and present aim, cordially favors the highest attainable development in medical education and medical practice, but it has seen the mischief and disappointment which have attended attempts made, in its name, to influence and procure medical legislation. But this view does not absolve us, its individual members, from grave responsibility regarding questions of public welfare. We are citizens of the Commonwealth as well as physicians; and, as citizens, jealous of the good name of Massachusetts, ashamed of her false position in the matter now under discussion, we have the right and the duty to protest that some remedy should be applied to eradicate the evils which I have tried to describe. We ought to do all in our power to secure some practical process of sifting which shall afford to the people an assurance that the State is unwilling to trust the lives and health of her inhabitants to charlatans and adventurers. We ought to insist, and insist again, that it is not for ourselves, or to promote our own interests, that we wish the State to interfere, but that it is in behalf of the thousands in her population who, through lack of knowledge or discrimination, become the victims of chicanery and fraud. We ought to demand that protection for the classes of people that do not and cannot protect themselves. If professedly intelligent and cultured persons choose to demonstrate their wisdom in a peculiar fashion, by amusing themselves with the mind-cure, and Christian science, and hypnotism, and other genteel fads, it should be with the distinct condition that it is without the State's approval of their folly. The strong desire shown by a certain class of individuals in this community to imitate and emulate their prototypes in ancient Athens in eagerness "to hear and to tell some new thing" needs checking when human life is in the balance as the material upon which the novelty is to be tried as a experiment.

Is it not extraordinary that Massachusetts has always been so ready to legislate in an endless variety of other directions affecting the life and well-being of her population, and is reluctant to interfere with uneducated and unfit practitioners of medicine? The general court has provided for the inspection of nearly everything that enters into domestic administration, and has ordained proper penalties for frauds and adulterations; we have ample protection in the matter of milk and vinegar, chocolate and nails, gas and leather, confections and drugs; but none against the charlatans. Massachusetts licenses her auctioneers and her pedlers, her pilots and publicans, her pawnbrokers and her warehouse-men, her dentists and her druggists; she places even clergymen and lawyers under regulations, but no difference exists in her esteem between the educated physician and the fraudulent healer which an adjacent State has spewed out upon our soil. We have statutes for the protection of lobsters and smelts, rabbits and partridges; but for sick people, the State offers no defence against quackery.

Let not medical men say that it is useless to seek a remedy from the legislature, that charlatanism has become too firmly rooted here to be eradicated by any means, however drastic. Repeatedly it has been demonstrated that measures of reform have been successfully accomplished with the aid of our profession in shaping and guiding legislation. Take a single illustration, the evolution of the methods prescribed for the commitment and treatment of the insane. As late as 1827, an act was passed by the Massachusetts Legislature which included every excited lunatic with "rogues, vagabonds, common beggars, and other idle, disorderly and lewd persons," and provided for his incarceration in a jail or house of correction until he was "restored to his right mind." This barbarity continued until the State, in 1832, heeding the representations of physicians, established the first lunatic hospital at Worcester. For many years after this, the process of commitment continued to be a purely legal one, without any required medical examination. But the protests of physicians again prevailed. In 1844, the legislature passed an act which recognized, for the first time, that insanity was a disease, whose diagnosis required medical knowledge, rather than legal acuteness. In 1862, it was enacted that for the commitment of an insane person to a lunatic hospital, "the evidence and certificate of at least two respectable physicians" should be required as a preliminary to establish the fact of insanity. Some modifications have been made in the amount and character of the medical evidence in these cases, but the recognition of the true nature of insanity and of the propriety of placing its humane treatment in the hands of physicians, rather than in those of the keepers of jails, was due to the labors of such men as Bell, Wyman, Ray and Jarvis. This result shows the effects which medical men may accomplish at the State-house if only their efforts are rightly directed and persistently exercised. Other examples of this force might be cited. The statutes relating to the public health, to the registration of vital statistics, to compulsory vaccination, to the use of subjects for anatomical study, to the investigation of deaths by violence, are all memorials of the intelligent zeal of medical men in shaping and obtaining wise legislation. What physicians have accomplished in the past is an augury and proof of what they may now accomplish in the attainment of statutory regulation of medical practice. And not in this direction alone. There are other matters wherein wholesome laws are needed. I have only to suggest the desirability of legislation for the more effectual prevention of the spread of contagious diseases, including syphilis; for less barbarous methods in the punishment of convicted murderers; for better dwellings for the poor; for medical inspection of schools; for the compulsory establishment of a local health-board in every town; for reform in the methods of using medical experts. In these, and other similar directions, the educated physicians of Massachusetts have it in their power to bring about salutary changes. It is a power that is not sufficiently appreciated by us, its possessors. It is a power which may find its correct exercise in various ways; in the open and candid expression of opinion as we meet our acquaintances and clients; or in properly formulated memorials to the general court; or in attendance and spoken testimony at hearings before legislative committees; or even in service in the law-making body itself. It is to the credit of our Society that its members have shown their willingness to interrupt their professional labors and to respond to the call of their neighbors to represent them in the legislature. It is an honorable service, and nearly every session has found, included in its rolls, the names of reputable physicians, members of this Society, who have given intelligent and faithful attention to legislative problems, the satisfactory solution of which has been largely due to their wise counsel and to the experienced judgment derived from their medical training.

(To be continued.)

A Discontented Doctor. — The *Berliner Tageblatt* recently contained the following: "I have read with envy and some indignation that the corn porters of Berlin, who are now earning from ten to twelve shillings a day want to strike for higher pay. Would that instead of being a Berlin doctor I had been a corn porter!" The communication was sent to the paper by a young doctor of three years' experience in the profession.

THE PRESIDENT'S ADDRESS BEFORE THE AMERICAN SURGICAL ASSOCIATION.[1]

BY P. S. CONNER, M.D., CINCINNATI, O.

Fellows of the American Surgical Association: — After a series of meetings at the national capital, it is fitting that our first journeying should bring us to a city with which is associated so much that is good and great in the history of our country, political, literary, scientific and professional. Here, as a part of the university, that, like Salernum of old is *mater et caput* of the schools, was established the second medical school in the Western Hemisphere, where for more than a century, scientific medicine has been well and thoroughly taught. The Massachusetts General and the City Hospitals have been the theatres of much work that has strongly affected the practice of our art the world over, and one of them will ever be remembered as the place in which "the problem of surgical anæsthesia was definitively solved." Their surgeons, learned, skilful, progressive and inventive, by labors and teachings have honored themselves and the profession of which they have been such distinguished members. Not in America only, but everywhere, the profession has held and now holds in high esteem the Medicine and Surgery of Boston.

The active life of the Surgical Association, that begun with the meeting in Philadelphia, embraces a ten-year period than which no other in professional history has been more strongly characterized by extent and accuracy of investigation, by scientific judicious experimentation, by the discovery of important facts, by improvements in the technique of old operations and by the introduction and general adoption of new procedures. In the study of the causes of disease many master minds have been at work, and more positive knowledge has been gained than in all time before, so that in the bacteriological laboratories, a new pathology has been worked out, in large measure revolutionary of both opinion and practice. Speculation and theory have given place to experimentation and fact, and the disease-producing influence of airs, of earths, of waters have been found to lie in organisms that have been seized upon, separated, classified and tested.

We can scarcely realize that it was only in 1882 that the startling announcement was made that tuberculosis was consequent upon the presence and action of a definite micro-organism, that could be isolated, cultivated and inoculated; and that so short a time ago, the doubters were many, more indeed than the believers. In this single decade just passed, the fact has become universally acknowledged, the sceptics are now but professional curiosities; a new literature has been written; even a new language created in which strumous (except as a synonym of tuberculous) has no more place than phlogiston.

The long-known chronic affections of bone, of joints, of glands, of skin, have been shown to be in great measure the result of the presence and action of a bacillus, that everywhere and under all circumstances moves in one and the same way and that a destructive one, though antagonized at every step by healthy tissue (not seldom successfully) and subject more or less completely to the power of our Art, directed to the procuring of the destruction or encapsulation of the germ, the removal of the infected tissues or the taking away of the affected part. We can understand now why rest is of so much importance, why excision or erasion may be followed as it so often is, by non-recurrence; why on the other hand, in spite of, or even because of operative interference, parts near or remote become secondarily infected.

The most important work, as it seems to me, that has been done in connection with surgical tuberculosis, is that which has had for its object, the finding out and properly applying a therapeutic agent which will destroy the organism and secure its expulsion from the body, or secure such condensation of non-infected tissue about it as shall form a wall around and by encapsulation render it harmless. Far better will it be to administer generally or locally a remedy that will remove the bacillus or make it innocuous than to do the most brilliant operation followed by the most rapid healing and recovery in large measure of functional integrity. The end is far from having been reached, but a long step in advance has been made, and the reviewer of the work of another ten years, may find the result secured and a non-operative, truly curative treatment in use. It is certainly to be hoped, though, that scientific medicine will not again have to pass through such an experience as that of a couple of years ago, the history of which will always be of much interest to the students of psychology and of mental epidemics.

Of the three wound complications which from the earliest times have been the bane of surgery, septic infection, erysipelas and tetanus, the cause of only the first had been determined a decade ago; that of each is now known, and known because of the application to the tissues and fluids of those affected by them of the same methods of bacteriological investigation that had revealed the existence and life history of the pyogenic cocci. In erysipelas have been satisfied the three requirements of proof of bacterial origin, isolation, cultivation and inoculation into the human subject with resulting development of the original disease. Not a few of the long time perplexing questions connected with tetanus have found answer in the discovered identity of its causative organism with the earth bacillus and in the anærobic nature of it. In every case that has come under my observation, so far as I can now recall, except those associated with toy-pistol wounds, I am able to trace either direct contact with the naked ground, or probable almost unavoidable contamination of the wound with dust and dirt. In the toy-pistol wounds of the hands there is that exclusion of air and retention of fluid that are most favorable to the growth and activity of secretion of an organism that flourishes in the absence of oxygen, an organism that at the time of injury or later was located doubtless upon the dirty hand. Knowledge of the habits of the bacillus is sufficient of itself to indicate the treatment to be pursued, that tetanus may not supervene, to wit, thorough opening up and free drainage of the wound. Further, not only has the causative organism been found, but also it has been shown that there may be developed from it an antidotal chemical agent, the injection of which can produce immunity or act remedially upon a tetanic patient.

It is in the treatment of the diseases and injuries of the viscera and their envelopes that the greatest advances in our art have been made in these later years. Numerous and carefully conducted experiments upon animals and operative procedures upon man, new, bold and highly successful, have again and again been reported, and in the work that has been done, our own Fellows have had no minor part.

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[1] Boston, Mass., Tuesday, May 31, 1892.

The abdominal cavity that for so long a time was an almost sacred territory not to be invaded except under peculiar circumstances and for the relief of a very few morbid conditions, has, because of the secured protection against sepsis, become one of the more common fields of operations, done on account of wounds, of tumors, of obstructions and of infective inflammation. Such operations, not seldom, have been, it may be believed, ill-advised, ill-timed, unnecessary and harmful, entered upon by inexperienced men, whose eagerness to cut has found explanation in the fact that in simple abdominal section few operative difficulties are usually met with and no dangerous hæmorrhage is to be expected, the arresting of which might test the knowledge and skill of the operator.

Penetrating and perforating wounds of the hollow and solid viscera are no longer treated solely by opium and ice with a resulting fatality truly appalling, but by section of the wall, suture of the wounds, ligation of the bleeding vessels and antiseptic plugging, if necessary, of openings in the solid organs. The mortality-rate is still unfortunately very high; how high cannot be definitely stated, since the number of reported cases is yet limited and includes without doubt an undue proportion of successful results. Not a few of the deaths, it cannot be doubted, have been due to the delay, the incompleteness and the imperfection of the operation, but many must be credited to the damage primarily done. Made by bullets of other than the smallest calibre, a pistol wound of the stomach, of the intestines, of the mesentery or of the liver, is likely to prove mortal from shock or hæmorrhage, even though treated properly and skilfully, and is almost absolutely certain to do so if fæcal extravasation has occurred and septic inflammation has set in. It cannot be questioned but that wounds made by very small balls may be, and have been recovered from without operative interference, and there is good reason for believing that in the absence of symptoms of active hæmorrhage such wounds will do as well or better without as with laparotomy; an operation, however improved its technique, is still an addition to the risk of the case. It is as unwise as it is untrue to declare that there are no dangers attaching to incision of the abdominal walls and exploration of the intestinal tract. But when it is a bullet of large size that has entered the cavity, the safety of the patient almost certainly lies, if anywhere, in speedy, thorough operation. It is hard to understand such statistics as those of Reclus, in which it would appear that while without operation only thirty-five per cent. died, with operation, the mortality-rate was from seventy-three per cent. to eighty-six per cent. That in three out of four, or six out of seven patients thus wounded, the result was a fatal one may be believed, but that it should be so in only one out of four expectantly treated, is to say the least, very remarkable. Not the smallest of difficulties often associated with these wounds, is the determination of the occurrence of penetration, which at times can only be through opening up and following down of the parietal wound. Inflation of the bowel with hydrogen gas, the earlier experiments with which were so brilliant and so captivating, will not always give the desired information and may be positively detrimental to the best interests of the patient, as it certainly has been in certain cases already put on record.

The septic inflammations about the head of the colon, originating so generally in the appendix (which some would regard as an "intestinal tonsil," but which may well be looked upon as a useless survival of a once important organ) have in the period under consideration been brought within the province of the surgeon, not as before at a late day when the resulting abscess has fortunately come well forward toward the surface, but at an early stage when by evacuation of the fluid with or without removal of the appendix, relief may be afforded and the patient be protected against the lethal effects of perforative peritonitis or perinephritic suppuration. The cases of acute disturbance in the region of the cæcum due to an overloaded bowel or to the catarrhal inflammation, will find relief in the future as in the past in the therapeutic measures of the physician; but suppurative gangrene producing appendicitis, it has been proven, and that chiefly by the experience of our American surgeons, can with safety be treated only by the knife. Whether or not it is advisable to remove, during a quiescent stage, the appendix that has been the seat of repeated attacks of inflammation, is a question as yet unsettled.

A very cursory examination of the professional literature, home and foreign, for the past decade, would convince any one that an immense amount of work, experimental and operative, has been done in the determination of the proper and most advisable methods of treatment in cases of obstruction, acute and chronic, malignant and non-malignant, located in any part of the tract from the cardiac extremity of the stomach to the lower end of the rectum. Strictures have been dilated, affected areas removed, anastomosis secured, "cut-offs" established, new openings formed, with the result in favorable cases of effecting cure or affording relief. The technique of the older operations has been much improved, modifications have been introduced, and not a few altogether new procedures have been devised, tested and widely accepted.

Pyloric stenosis, for which ten years ago pylorectomy was all that the surgeon could offer, may now, if of non-malignant character, be relieved by digital divulsion through the open stomach, by curetting, by a pyloro-plastic operation, or by gastro-enterostomy; and if due to malignant disease, by the latter operation, in every way to be preferred to excision of the cancerous mass, being speedier and easier of execution and having a mortality-rate but one-half or perhaps only one-fourth as great. In its performance, as in similar operations upon lower portions of the intestine much use has been made of the approximation plates, as of decalcified bones, of leather or of potato, and of catgut rings and mats; but at the present time there is certainly a strong and growing feeling that their employment is not only not necessary but rather an injury than a benefit to the patient. It may be well questioned, if after all, viewing the subject in its widest aspect, operations for cancer of the stomach have really been or can be of much service. They certainly have often afforded much temporary relief and are to be resorted to when suffering is great and starvation is imminent; but on the other hand, the prolongation of life when the operation is recovered from is, with only now and then an exception, but slight, excision has almost never protected from recurrence, the abnormal anastomoses are very likely to speedily become seriously contracted with resulting loss of the benefit primarily secured and the necessitating disease must go on increasing though it may be more slowly than before. In not a few of the reported cases, the condition of the patients at the time of operation was fairly good, the suffering was slight and the general strength but little impaired, yet as the direct result of the surgical interference life was cut short. If we balance these cases against those in which a few weeks or months were gained by excision or anastomosis, it is very questionable if we can find in the result of operation any material addition to the sum total of life.

Malignant disease located in the rectum too low to be removed through an anterior abdominal incision and too high to be thoroughly extirpated through a perineal one, may be reached from behind, after resection of the coccyx, with or without, as necessity may require, that of the lower portion of the sacrum. This new operation, neither specially difficult nor dangerous, may be done in place of a colotomy, lumbar or inguinal, the latter being to-day more generally preferred. The same objection to such radical treatment as compared with palliative, namely, increase of risk without compensating probability of cure, holds good here as at the pylorus, although in less degree.

In no other part of intestinal surgery has more been done in thought, in experiment and practice than in that dealing with excisions of the bowel in continuity, rendered necessary on account of wounds, growths or gangrene. As the technique of the operations has been improved, the time of performance has been lessened, the risk to life diminished and the range of applicability increased. It is still undetermined whether end-to-end or lateral anastomosis is to be preferred, of how much value bone plates or rings, or other like aids really are, to the patient, at least, how far omental grafts may be required, or how much additional security they afford.

The solid organs have again and again been brought under surgical treatment on account of wounds, of growths and of tubercular, parasitic and suppurative diseases. The kidney, spleen and even the pancreas have been removed entire, the liver in part. The gall-bladder has been opened and its contents removed (stones, bile, pus) and later sutured and left in place or stitched to the abdominal wall or cut away altogether. Pancreatic cysts have been at times extirpated, at times drained. These operations have yearly been more frequently performed for more varied causes, by steadily improving methods and with a marked diminution in the resulting fatality.

Special notice cannot be taken of the new and improved operations upon the uterus and its appendages which have had for their object the relief of the distressing and grave conditions, and as their result, preservation of life and restoration to health in large and steadily increasing proportion of the cases treated.

Of the work done upon the bladder much might well be said; but only a passing reference to the high esteem in which, so justly, the suprapubic section is now held; to the greatly improved and more successful treatment of tumors and to the established position that in the period under consideration, litholapaxy has taken as the most generally applicable method of dealing with stone, even in young children, for the relief of whom ten years ago, lithotomy was everywhere regarded as the only operation to be ordinarily thought of.

Though there have been many operations of very considerable extent upon the thoracic wall to secure closure of an empyemic cavity and for the extirpation of tumors, in intra-thoracic surgery but little has been done and that almost entirely in the evacuation of lung abscesses and the removal of hydatid cysts, the result in the latter class of cases has been remarkably successful. Pneumonotomy for tubercular abscess, according to the report made to the French Congress of Tuberculosis last year, had relieved in about fifty per cent. of the cases and cured in about one-fourth as many, but the number of patients thus far treated has been so small that the figures are of little importance in the consideration of the advisability or otherwise of active interference. It certainly stands to reason that the opening up and draining of the pulmonary tubercular abscess will not be likely to afford other than temporary relief, such pus collection being commonly not solitary, but one of a number in an extensively diseased organ. In the removal of deeply located foreign bodies and tumors other than those connected with the wall, almost nothing has been attempted, and there are difficulties, anatomical and physiological in the way of such operations, which, if in any given case not insuperable, will probably always tend to make prudent surgeons cautious about entering upon one of them.

Pneumonotomy, experimentally shown to be readily done and attended with no great amount of danger, will doubtless in the future have a place in the treatment of lung injuries, in which already it has been a few times employed, according to one report, in fifteen cases with a death-rate of less than fifteen per cent. That it will ever be an accepted method of treatment for tuberculous lung may well be questioned.

It is in the surgery of the head and spine that the greatest advances have been made, the largest number of new procedures introduced, the most brilliant operations done; and in these regions more than anywhere else the surgery of to-day is a new surgery, much of it the growth of even fewer years than those included in the lifetime of the Association. More and more constantly are all depressed fractures of the skull being treated actively, and basal fractures, antiseptically. Stronger and stronger is becoming the conviction of surgeons that fractures of the spine associated with evidence of pressure upon or injury of the cord, should not be left to nature, if the general and local symptoms indicate lesions that can be removed or relieved by elevation or extraction of vertebral fragments, or the lessening of intra-dural tension through opening of the sheath.

It has been proven to be wise to treat bullet wounds of the brain like other punctured wounds of the organ, by exploring, cleaning and draining the track; and occasionally it has been found possible to extract the ball through the wound of entrance or a counter-opening in the skull. The future must determine how far it is wise to go in the way of effecting removal of the bullet, and this must largely depend upon previously ascertained extent of liability to the supervention of epilepsy and mental disturbances, weeks, months or years after the lodgement of a ball which, at the time of injury, did comparatively little damage, or damage, at least, that was spontaneously recovered from.

Trephining for epilepsy following injury of the skull is no new operation, but of late such treatment has been quite largely employed, not only in cases where there has been an old fracture or contusion, but in those in which by application of the now well-established rules of cerebral localization it has been possible to determine the place of a meningeal thickening or of a limited chronic encephalitis or a new growth, solid or cystic, acting as an exciting cause of motor disturbance. Electrical stimulation of the exposed cortex has been made to indicate with exactness a diseased area, the removal of which has been followed by relief, temporary or permanent, of the spasm symptoms. The attained perfection of operative procedures has reduced the mortality-rate to a very low figure and even the after-presence of a gap in the skull has been prevented by re-implantation of the removed bone. Unfortunately in very many cases of recovery from operation, in a few weeks or months or it may be years, the convulsive seizures will come on again. An established "epileptic habit" is independent of the original lesion, and after a certain time, which is a very uncertain one, the patient can no longer be assured that the cause removed, the effect will cease. But for all this, the morbid condition is so disabling, the relief afforded may be so great, the risk run is comparatively so small, that after proper and properly continued, yet unavailing medicinal treatment, an epileptic in whom the seat of the disease can be fairly well located should become the subject of operative interference.

Trephining has also been done because of the existence of long-standing severe headache; and in cases in which the thorough application of the therapeutic test has proved that the cephalalgia does not depend upon a cause that can be reached and removed by drugs, the operation may certainly with propriety be recommended.

Considerable sections of the skull have been taken away to permit of the expansion of the microcephalic brain, but though improvement in mental condition in certain cases has followed such linear craniotomy, at the present time the operation seems to be of very questionable utility. Before it is to be accepted as an advisable method of treating feeble-minded children, further investigation must be made into the causes of arrested cerebral development and how far it is productive of, and how far consequent upon, premature ossification of the cranium.

Insanity of traumatic origin has in a very large proportion of the few cases surgically treated, been much improved or cured, because, we may believe, of relief of "intra-cranial fluid pressure"; and even general paretics have been thought to have been benefited by trephining.

A few years ago, who would have dreamed of opening up the lateral sinus and removing from it a pyogenic thrombus? Yet it has now been done several times, and with success.

In not a few cases intra-cranial abscesses have been definitely located and operatively relieved.

But the most brilliant chapter in this history of brain-surgery in recent times, is that relating to tumors. There is set forth in it not only what has been done, remarkable as it is, but also the unity of medicine and the interdependence of its various departments. It is because of the work of the anatomist, the physiologist, the pathologist, the neurologist, that it has been rendered possible to locate with close approximation to exactness the position of the neoplasm and its character; without knowledge of which the skill of the surgeon and the most careful operative technique would be of little or no avail. Even the experimental therapeutist has played a part because of his demonstrations of the influence of morphia upon the intra-cranial circulation. Though in but a small percentage of cases of tumor, has it been or perhaps can it be practicable to effect removal, because of location or pathological character, yet when it is so, the gain is enormous, even though the relief afforded be but temporary, as in dealing with certain growths it must be.

Much less operative work has been done upon the spine than upon the head. It has had for its object the evacuation of abscesses, the relief of paralysis and the removal of tumors pressing upon the cord, and has been in a high degree satisfactory and full of promise.

As never before, the congenital malformations, meningocele, encephalocele and spina bifida have been subjected to surgical treatment, and that with an increasing success, as improvements have been made in the methods of execution. Renewed attempts have been made to permanently get rid of intra-ventricular effusions by tapping and drainage, but the results have not been what might be desired, and that, whether the old route to the ventricle has been followed, or the new lateral one.

In the special departments, as in general surgery, these last ten years have been busy ones, and each may justly claim that there has been advance made in the recognition of disease and improvement in its treatment. But consideration of the work done in them does not concern us here.

Any retrospect, be it never so hurried, of the work of the decade, furnishes good warrant for pride in what has been, and high hopes of what is to be. The world over, educated minds and trained hands are busy with the problems of cause, of course, of termination, and seeking out surer, safer, and speedier means of relief, therapeutic and operative. Week by week, and month by month, what is accomplished becomes free and common property; everything is proven, and the good held fast. What will be the outcome of all this thinking and experimenting, and operating and writing, even in the near future, who would dare to predict? American surgeons have had not a little to do with the work in the past; Fellows of our own Association, some of whom have fallen asleep, have been closely identified with the discovery, the early adoption and the thorough testing of not a few methods of treatment; and we may expect with confidence that it will be with us hereafter as it has been, and yet more so.

As an organized body, certain duties rest upon the Association. Representing the surgery of a country of wide extent and of very varied climate and soil, of a people of many racial origins, there should be conducted by it a series of collective investigations, which, for example, might show the prevalence, and as far as possible, the more remote determining causes of certain surgical diseases, chief among which is cancer; or the influence of the local conditions, as of altitude, of average temperature, and of moisture upon the healing of wounds; or of the relative resisting-power to the action of morbific organisms of the descendants of immigrants from different nations, still more of members of the several color races; four of which are to be met with within our boundary lines in numbers large enough to be of value in an investigation of this sort. From our meetings, year by year, should go out to the world, reports, as it were, of the surgical state of the nation, and, as far as can be ascertained, the reasons therefore as found in place, in race, in occupation and in social position.

In the *personnel* of the Association, the years that have gone by have brought much change. It could not but be so. Thirty-three of the Fellows have passed away, leaving to us a memory of worth, of learning and of skill. Since our last meeting Agnew, and Campbell, and Johnston, and Kinloch, and Peck have rested from their labors. Each, honorable and honored; in his own place and in his own way, aided humanity and advanced medicine, and each will long be held by us in kind remembrance.

ABSTRACT OF THE PRESIDENT'S ADDRESS BEFORE THE ASSOCIATION OF AMERICAN PHYSICIANS.[1]

BY HENRY M. LYMAN, M.D., CHICAGO, ILL.

Reference was made to the absence of the Secretary, Dr. Hun, who "obedient to the higher impulses of his being, has taken unto himself a wife, and departed for the happy hunting grounds of European seclusion."

Since the last meeting, death has removed two of the members of the Association, Dr. Francis Donaldson died in Baltimore, Md., after a period of declining health, which was suddenly terminated by heart failure on the morning of December 9, 1891. He had reached the age of sixty-eight years. The story of his life covers everything of interest pertaining to medicine in his native city during the past half-century. He was a graduate of the University of Maryland; afterwards studied in Paris. From 1863 to 1866, he was Professor of Materia Medica in the Maryland College of Pharmacy, and later Professor of Physiology and Hygiene, and Clinical Professor of Diseases of the Throat and Chest in the University of Maryland. He was a frequent contributor to medical periodicals and an accomplished teacher. He was one of the consulting staff of the Johns Hopkins Hospital. He was one of the finest types of the energetic, accomplished and thoughtful men who adorned the last generation of American physicians.

Dr. Henry Ingersoll Bowditch died in the city of Boston, January 14, 1892, in the eighty-fourth year of his age. He was a son of the celebrated mathematician, Nathaniel Bowditch. As a schoolboy and student, he was remarkable for all the best characteristics, physical, mental and moral of a New England youth of his day. He graduated from Harvard in 1828, entered the medical school in Boston, and received the degree of M.D., in 1832. He spent nearly two years under the instruction of the famous French teachers, Andral, Chomel and Louis. From these eminent pioneers of modern medical science, he acquired the rudiments of that power of acute observation and accurate inference that was so conspicuous a feature of his after-life. From the year 1838 until the close of his active career, he was intimately connected with the Massachusetts General Hospital, the Boston City Hospital, the Carney and New England Hospitals in the city of his residence. He was one of the earliest and most prominent advocates of sanitary science and public sanitation; and after the creation in Massachusetts of the first State Board of Health ever known in this country, he devoted ten of the best years of his life to the arduous labors of its presidency. As a man, as a citizen, as a physician, no purer, brighter, nobler spirit has ever adorned the medical profession.

The past year has not been particularly fruitful in brilliant discoveries within the field of medicine. Medical progress can advance only as the allied sciences pave the way by discoveries that can be utilized for the explanation of physiological and pathological phenomena, thus rendering possible new investigations in therapeutics. For these reasons, it is highly important that we should carefully follow the course of research in all departments of scientific investigation.

During the past year, a number of beliefs that were previously held upon hypothetical grounds have been subjected to the final test of experimental evidence, thus enlarging the field in which the uniform operation of the laws of physics and chemistry has been demonstrated.

Brief reference was made to the fascinating researches in the realm of astronomy which have been so recently accomplished by the aid of photography and the spectroscope. To us the principal interest lies in a demonstration thus afforded of the unity of type and method in all the cosmic movements of matter, enabling us to read in the language of the stars the past history and the future course not only of our own solar system but of the planet upon which we dwell.

Experiments in electricity by Professor Hertz, of Karlsruhe, have continued to bear fruit during the past year. It may be now assumed as experimentally demonstrated that electricity, as well as light and heat, are what they have been long supposed to be, modes of motion in an all-pervasive ether. By this demonstration we are brought one step nearer towards the complete definition of the antithesis between mind and matter.

Among the biologists during the past year, research has been particularly occupied with the investigation of the elementary composition and attributes of protoplasm. In connection with the questions that bear upon the subject of heredity, many interesting observations have been published: the investigations of Strasburger, Fleming, Guignard and Fol have thrown new light upon the phenomena of fecundation and reproduction, giving reason to hope that in no very distant future the problems of heredity may receive a satisfactory solution.

Another important question regarding the ultimate organization of protoplasm itself is gradually approaching its solution. Two rival hypotheses at present occupy the field: Altman, Straus and Vogt are of the opinion that a cell-protoplasm is to be considered as an aggregation of co-ordinated elementary organisms that bear to the animal or vegetable cell a relation not unlike that of independent microbes. The bearings of such speculations upon the facts of infection and of fecundation is quite obvious. On the other hand, Butschli maintains that it is entirely unnecessary to assume the existence of any special co-ordinating force, and is of the opinion that all the phenomena which are exhibited by protoplasm may be produced by the operation of ordinary chemical and physical forces.

The past year has been distinguished by the completion of a new edition of Eichhorst's great work on "Internal Medicine," and by the appearance of the first two volumes of the French "Traité de Médicine." In our own country Osler has laid upon us all a debt of gratitude for his admirable volume on the "Practice of Medicine."

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[1] Washington, D. C., Tuesday, May 24, 1892.

These epoch-making achievements indicate the complete recuperation of the French school of medicine from the stunning shock of the Franco-Prussian War. The consecutive volumes of Eichhorst remind one of the German infantry, ponderous, thoroughly trained and invincible, but war-worn and weather-stained to the last degree. Turning from those serried ranks to the French side of the line, we find all the pomp and circumstance of war, all the glitter of gold, the splendor of apparel, the *elan* and *esprit* that have always characterized the French nation. Judging from the already published volumes the new "Traité de Médecine" will be, when completed, the most valuable contribution to the literature of internal medicine that has yet been produced. The world, certainly, cannot yet dispense with the services of the French any more than it can do without the Germans.

Original Article.

RECENT ADDED FACILITIES FOR THE EXAMINATION OF THE EYE.

BY HASKET DERBY, M.D.

I. The Ophthalmometer of Javal-Schiotz. — II. The Phorometer of Stevens. — III. The Arc-Light Adapted for the Ophthalmoscope.

I. THE OPHTHALMOMETER OF JAVAL-SCHIÖTZ.

It needs not the memory of a veteran in the practice of ophthalmic surgery to recall the time when patients who supposed they might need the aid of glasses were advised in the text-books to consult some reliable optician. And even after the publication of the classic articles of Donders on refraction and the selection of spectacles, the boxes of trial lenses for years contained no cylindrical glasses. After the latter had been finally introduced, at no very remote epoch, the present writer can remember trying to convince M. Nachet of the desirability of having a double row of cylindrical, just as of spherical, lenses; and insisting on having his own box constructed with this addition, much to the surprise of the optician. Von Graefe wrote his first article on muscular asthenopia in 1862. At the present time there is no case exhibiting asthenopic symptoms in which the thought of abnormal astigmatism, as well as of a want of proper balance in the motor apparatus of the eyes does not occur to us. And a daily increasing number of cases come from the general practitioner to be examined for the possible existence of these defects.

A thorough functional examination of the eyes has therefore become a long and laborious process. It is not sufficient to ascertain the amount of vision, and, if it seems imperfect, to bring it up to the normal standard by the employment of the ordinary spherical lenses. Small degrees of astigmatism must be carefully looked for, and in cases where frequent headaches occur, or the continuous use of the eyes on near objects is attended with difficulty, their complete neutralization is to be undertaken. Muscular insufficiencies are also to be considered, those not only of the internal recti, formerly thought to be the most frequent, but also of the externi, as well as of the superior and inferior straight muscles. The ophthalmoscope must of course play its part and thoroughly search the interior of the eye. With the means of examination formerly at our command, such a complete investigation of a single case might well extend over several visits, be fatiguing both to patient and surgeon, and involve the use of atropine or homatropine to paralyze the accommodation, thus involving a tedious delay and disabling the individual for a length of time that many an active worker could ill afford.

Fortunately for the public, as well as the profession, science has placed at our command the means of materially shortening these examinations, while the accuracy of the results obtained are in nowise diminished. With the improved Ophthalmometer of Javal-Schiötz, for the investigation of astigmatism, the Phorometer of Stevens for guaging the strength and condition of the muscular apparatus, and the Arc-light, made comparatively portable and adapted for use in the ophthalmoscopic closet, the comfort and time of patient and surgeon are no longer unduly encroached upon. Within the limits of a single and comparatively brief visit a thorough examination of the functions can be made, the state of the refraction be sufficiently ascertained without the use of atropine, the muscular equilibrium or want of equilibrium estimated, and a view obtained of the interior of the eye that, for clearness of detail and purity of tint, was rarely approached in the days when our only means of illumination was the flame afforded by oil or gas. It is to briefly call attention to these three improvements in our means of examination that the present article is written.

Of all devices hitherto furnished for the purpose of ascertaining the existence of abnormal astigmatism, none compare with the ophthalmometer of Javal-Schiötz, and I refer particularly to the model of 1889, with the Edison incandescent lamp attachment. This apparatus, as is well known, consists of a metal disc 640 millimetres in diameter, fenestrated in each lower quadrant for the passage of the hand. On it are painted in black and white concentric circles, and its periphery is marked off at intervals of 15 degrees, the figures being reversed that their reflection on the cornea may be more readily made out. The disc is mounted on a tripod, sliding in brass grooves along an horizontal stand, to the opposite extremity of which is attached at right angles an upright frame for the face of the patient, consisting of a sliding chin and fixed forehead rest, the latter having a lamp connected with either corner. Through the centre of the disc passes a small telescope, itself fixed in the centre of a movable curved bar or arc, and by rotating the tube this bar moves over the anterior face of the disc. A long pointer, attached at right angles to the centre of this arc, and a shorter one at each extremity indicate its position. On the arc slide two small parallelograms (or "mires" as they are termed), one with straight, the other with notched edges, each traversed by a straight line drawn across its centre, the two lines forming but a single one when the mires are in apposition. In the body of the telescope is placed a Nicol's prism, which doubles the reflections of the mires on the cornea of the patient. At the back of the tripod supporting disc and telescope is a large screw, the turning of which tilts the apparatus forward or backward and thus changes the inclination of the telescope.

The electric lights are 16 candle power each and are furnished with reflectors which aid in the illumination of the disc and mires.

The patient's head being placed in position and the eye that is not under examination covered, the observer takes his place at the eye-piece of the telescope, directs it toward the cornea by lateral movements with the hand and vertical with the screw, brings thus the cornea into the field, and alternately pushes forward or withdraws the tripod until a clear image of the disc is obtained on the corneal surface. Disregarding the lateral images of the mires the central ones are brought into contact by passing the hand through the opening in the disc and sliding one mire along the arc. If now one of the cross lines is on a different level from the other the tube of the telescope is grasped and revolved slightly until the lines are continuous, the angle being noted on the small reflected image. The arc is now swept over 90 degrees until the small pointer is in the position that the long one previously occupied. Should the one mire appear to have moved to some extent over the face of the other, and to show white against it, there is astigmatism, each notch that has so impinged giving an astigmatism of one dioptric, while the position of the meridian is shown by the pointers. If the mires in the second position should separate there is astigmatism "against the rule," the extent of the separation indicating its amount.

The advantages of this method of examining for astigmatism are evident. A comparatively short time is occupied. The testing is wholly objective, the judgment of the patient not being appealed to. All he has to do is to keep still and to look in one direction. In ordinary cases, no mydriatic need be used. This last advantage can scarcely be overestimated. For the average individual dreads the artificial dilatation of the pupil. If homatropine be used for this purpose he must sit for hours, applying it at short intervals, and subsequently submit to a partial deprivation of useful vision for a day or more. If atropine be the agent chosen, the time needed for its application is less, but the effect remains for a week or more. A subsequent affection of the eye is often attributed by the ignorant to the use of the drug. It is with difficulty that we persuade many to undergo a second similar examination. It is a well-known fact that the fear of the process deters not a few from submitting to the test. It may be objected that, although the ophthalmometer gives us the astigmatism, we cannot yet ascertain the total hypermetropia without paralyzing the accommodation. Admitting this fact, I would ask why it is so necessary to inquire into the amount of this error of refraction that may be latent. We have already seen that we can find out the astigmatism, the manifest hypermetropia is easily corrected, and it rarely happens that more is desirable. I cannot but agree with Roosa as to the frequent occurrence of a hypermetropia that needs no correction, it being a normal condition of the eye, and coincide with him in the belief that there is a very large proportion of cases of asthenopia cured by the simple neutralization of the astigmatism.

I do not wish to be understood as claiming that the ophthalmometer is a perfect instrument and never disappoints the observer. It does not give us the astigmatism of the lens, a factor, however, that it is not ordinarily necessary to regard. It gives the gross amount of the astigmatism but not its kind, this must be subsequently ascertained. Its accuracy on the other hand is often remarkable. It may be likened to a guide who tells us which one of several roads we are to take, and accompanies us a portion of the way. The aid it affords may not be always perfect, but it is most valuable, while the economy in time is great. This latter consideration is especially felt when the needs of a large clinic are taken into account. At the Eye Infirmary in this city we find it difficult to realize how we got through our work before we possessed an ophthalmometer.

II. THE PHOROMETER OF STEVENS.

That muscular asthenopia exists, that its situation and amount may by proper investigation be ascertained, and that it may be relieved by either prismatic glasses, or by partial or entire tenotomy of the antagonist muscle, would seem to admit of neither doubt nor denial. And yet on this point controversy has long been active. There are those who would relieve many cases of ordinary headache, chorea, and epilepsy by one or repeated operations on the recti muscles. Led by some success in this direction the enthusiasm concerning this method of treatment has gone to yet greater lengths. It is within the personal knowledge of the writer that an internal rectus has been divided for chronic constipation, while in another instance a rheumatic affection of one shoulder was treated by the partial tenotomy of the superior rectus muscle of the corresponding eye.

As may well be supposed a reaction in the opposite direction has taken place. Melancholy results of misdirected zeal for ocular tenotomy, the artificial insufficiencies and persistent diplopia that have resulted from a faulty diagnosis or want of care in the choice of proper cases, have induced many to deny the usefulness of aiding or attacking the motor apparatus of the eye. The medical pendulum ever swings from side to side and is rarely arrested midway.

While we cannot all agree with Dr. George T. Stevens in the extent to which he has pushed his theories, we must respect the sincerity of his convictions. And I think it should be agreed that he has not only devised the most delicate and perfect instruments for operations on the ocular muscles, instruments by the side of which those we have previously possessed appear rude and clumsy, but that he has given us in the phorometer an apparatus for the ready estimation of muscular insufficiencies that ensures accuracy, saves time and trouble, and bears the same relation to this field of investigation that the ophthalmometer does to astigmatism.

An upright column, the length of which may be varied, is inserted in a firm and loaded base, and has hinged to its upper extremity an arm that may be extended at right angles, and, by means of a screw be readily brought into a horizontal position, the accuracy of which is at once shown by a spirit level attached to its extremity. On the extended arm is placed a rectangular slide with a broad base, enabling it to stand upright. In this slide are two square apertures, so situated that the patient looks through each with a single eye. Into each aperture is fitted a revolving disc, in which is placed a prism of five degrees, the discs having toothed edges and being so connected with each other by a smaller disc that the motion of one is transmitted to the other. By raising a small lever attached to the right-hand disc into a vertical position the prisms are brought base to base. A patient whose head is six or eight inches away sees two images of a candle at the other end of the room. According as these images are on the same or different levels the relative strength or weakness of the superior and inferior ocular muscles is ascertained; when the level is different a slight movement of the lever to the right or left makes the images even, and the strength of the prism that would be required in order to effect the same result is read off on an arc traversed by a little pointer attached to the centre of the right-hand prism. To test now the lateral muscles the lever is swept round into a horizontal position, thus bringing the base of the right prism up, that of the left down. The double images are now superposed. If out of line, the lever is raised or lowered till they come into line, and the excursion over a graduated arc of the pointer attached to the prism on the left shows the strength of the prism required to neutralize the weakness of the lateral muscles, as well as the position of the muscles requiring aid.

Those who have frequently had occasion to test for muscular insufficiency will appreciate the advantage of this ingenious apparatus. The patient's head is comparatively free, he wears no heavy frame, and need not be tested with a succession of single prisms, losing during the change to a new one the memory of the effect produced by its predecessor. Time, trouble and fatigue are alike spared. It is especially in hospital practice, where a large number of patients, often of limited intelligence, have to be examined in a given time, that the advantages of the phorometer, as of the ophthalmometer, are most gratefully appreciated.

III. THE ARC-LIGHT ADAPTED FOR THE OPHTHALMOSCOPE.

It is remarkable how little stress is laid by authors on the kind of light that is to be used for purposes of ophthalmoscopic examination. "The flame of a well-burning lamp" is all that is ordinarily specified. And I presume that the most of the profession regard the Argand burner as offering the best form of the flame, and gas, under ordinary circumstances, as the best source of illumination. Sunlight is spoken of as having been occasionally employed, but its use is often impossible and generally impracticable. He who has once been able to command a room darkened by shutters, with a round aperture in one of them, and who waiting for a suitable day has reflected from his mirror into the eye of the patient the light furnished by the surface of a white cloud, has seen the fundus illuminated with a clearness and purity of color he had never before witnessed, and has ever after longed to be able to dispense with the yellow glare of the ordinary gas flame, even though passing through a chimney of blue glass.

During the past winter I have been experimenting with the electric light. The incandescent lamp, to which I first directed my attention, was soon found to be impracticable. The outlines of the glowing loop of carbon were reflected on the interior of the eye, giving only linear illumination and leaving the territory between and around their borders in comparative darkness. Increasing the amount of candle power and shielding the flame by means of a frosted globe lessened, but by no means obviated the evil. I then secured a small arc-light, which has proved most satisfactory. As private houses with us are rarely furnished with other than the incandescent circuit, it became necessary to utilize this. The lamp constructed uses five ampères of current and produces 500 candle power, when burning an arc of forty-five volts. A special carbon is used to give the proper quality and color of light. A resistance coil, placed in circuit with the lamp and connected with it by a flexible cord, takes up the balance of the voltage. The lamp is held on a metal base which carries an upright on which is mounted the apparatus for adjusting the carbons and feeding them toward each other. This upright is provided with a shield, at one end of which is a slide in which ground-glass may be inserted for the purpose of toning the light.

The lamp may be connected with any incandescent circuit, it and its resistance being placed in the branch with a five-ampère switch. The branch on which it is placed should have a carrying power of six ampères. The lamp I am at present using occupies a space of about six by nine inches. Its conductor being flexible it can be readily moved about the table. The aperture in the shield is an inch and a half in diameter. Through this shines a brilliant and steady light that readily adapts itself to the needs of the observer. He can employ it for oblique illumination, use it with the mirror alone for testing the transparency of the media or for retinoscopy, or apply it to the examination of the fundus in either the direct or inverted image.

Despite the character of this light, I find no unpleasant effect complained of by the patient. No complaint of dazzling has been made, and no greater inconvenience caused than would have been the case with the Argand gas-burner. I have no hesitation in stating that I find the light the best I have ever used. The color of the fundus approaches more nearly to that obtained under exceptionally favorable circumstances by day. The definition is greatly improved, being clearer than that obtained with any other form of artificial illumination. Repeated comparisons instituted between the Goddard gas-burner I have had in use for more than twenty years and the arc-light show the superiority of the latter. This has proved to be particularly the case in certain forms of slight macular disorganization I have lately had the opportunity of examining. The careful and repeated scrutiny required when gas was used yielded to the certainty afforded by a single glance aided by the electric lamp. Slight haziness of the vitreous, as well as floating bodies and membranes in this portion of the eye, assume unusual distinctness.

I cannot but think that when the arc-light has been perfected for this purpose it will supersede all lamps now in use. The reason for giving no drawings or additional details of the lamp I am at present using is, that we are now endeavoring to effect improvements in its construction. It is a distinct advance on its predecessor, and specifications for a third are now being worked out. I trust to have a good working lamp to exhibit at the meeting of the American Ophthalmological Society next July, and to be then able to refer those who may desire to obtain it, to the manufacturer.

The Grady Hospital in Atlanta. — This hospital which was erected as a memorial to Henry W. Grady, was opened in Atlanta, Georgia, last week. The city appropriated $15,000, the rest was raised by private subscription.

Clinical Department.

CASE OF OVARIOTOMY.[1]

BY GEORGE W. DAVIS, M.D., OF HOLYOKE.

MRS. C., widow, aged sixty-seven, has been in feeble health for many years, still able to be about and attend to her light house-work; has a chronic cough which has been quite constant for many years, worse at night rendering sleep in the dorsal position impossible. Examination failed to discover any organic disease of the lungs or other vital organs.

During the early part of the last winter she was troubled with vesical irritation and pressure about the bladder, which was in a measure relieved by medicines and drinks usually used for such symptoms. About January 1, 1892, she noticed that the lower portion of her abdomen was somewhat full, but did not consider it unnatural.

March 10, 1892, she was examined by Dr. Ella M. Davis, who discovered an abdominal tumor, and asked me to see the case the next day. I then found a tumor in hypogastric region, well marked, slightly to right of median line, reaching two-thirds of the distance from symphysis to umbilicus, movable, of a semi-solid feel, and fluctuation doubtful. Vaginal examination revealed the pelvic brim filled with what felt to the examining finger as a solid mass with the cervix-uteri behind it and very intimately connected with it. A uterine probe entered one inch and a half. I could not at this examination become satisfied as to whether the solid mass was a uterine growth or an ovarian tumor wedged into the pelvic brim in front of the uterus.

At an examination one week later, the bowels having been thoroughly cleaned out by carthartic medicines, it was found that the tumor had escaped from the pelvis and occupied more space in the abdominal cavity, reaching nearly to the umbilicus. There was ascites sufficient to give fluctuation in the flank and render the diagnosis confusing; fluctuation in the tumor was doubtful. A digital examination at this time proved that the mass together with the uterus had ascended into a more elevated and roomy position and the cervix was more nearly in its usual place. The uterine sound entered one inch and a half, and the uterus seemed to be more movable upon the sound than would be possible were the tumor uterine. I was also able at this time to get slight motion of the solid mass while the cervix uteri seemed to be stationary. Diagnosis was ovarian cyst, possibly uterine fibro-cyst. From this time on to date of operation, April 8th, the tumor increased in size, very rapidly extending two fingers breadth above the umbilicus and becoming very prominent in front.

Because of the patient's age, chronic cough, and general feebleness, chloroform was selected as the anæsthetic. Its administration was entrusted to Dr. J. C. Hubbard. One ounce of brandy was given a few minutes before. During the operation, which lasted forty minutes, the doctor found it necessary to inject brandy hypodermically the pulse having ceased to be perceptible; vomiting and straining was marked, necessitating some delay in operating as the intestines were at times forced through the wound so as to render proper manipulation for the moment impossible.

The patient was operated upon in her own home, Drs. E. M. Davis and G. L. Taylor assisting. A bedroom leading off from the patient's sleeping apartment was cleared of all furniture, including carpet and curtains, thoroughly cleaned and aired and wiped with antiseptic solution as was all the furniture needed at the operation. A new tin wash-boiler was secured for boiling the water to be used in the operation and new earthen pitchers for the various solutions. Everything possible was done to make the patient and surroundings aseptic; and I doubt not with better success than is often the case in well-regulated hospitals.

The patient having been prepared and chloroformed, was placed upon a table in a good light, well covered with blankets, over which were placed such pieces of oiled cloth as would protect her from the liability of getting wet, with a hot-water bag at her feet; the seat of operation was surrounded with towels wet in warm sublimate solution. An incision three inches long, midway between umbilicus and symphysis through the linea alba to the peritoneum, was made, the peritoneum was picked up with dissecting forceps and nicked with scalpel, then slit upon the finger as a director to the same length as the integumentary incision. The cyst now came into view, and presented an unusually dark color, making a marked contrast with its present pearly-white appearance. This was caused by the dark brownish-green color of the cyst fluid. It very closely resembled a cyst filled with blood. The sack contained the so-called colloid fluid, portions of it being quite quick. After searching for attachments with the fingers, the hand being introduced for the purpose, the cyst was punctured with Tait's trocar, but its blunt point tore a hole too large to be easily managed with the trocar in position, and to prevent the fluid from flowing into the abdominal cavity, the trocar was laid aside, the edge of the sack quickly seized with Nelaton's cyst-forceps and drawn through the incision, allowing its contents to escape outside, it, at the same time, filled the opening in the abdominal wall, preventing protrusion of the intestines. The largest cyst having been nearly emptied, the opening in its wall was clamped with a large T-shaped cyst-forceps to still further lessen the liability of the cyst fluid entering the abdominal cavity. The cyst was now found to be multilocular, there still remaining another cyst which seemed independent of the first; it was as large as could be delivered through the abdominal wound without rupture. It was slowly lifted out of the abdominal cavity together with the solid portion of the tumor. The pedicle was very short and three inches broad, but not thick. It was so short as to make ligation difficult. It was ligated with silk ligature and tied with the Staffordshire knot and severed with scissors. There was very little hæmorrhage. The toilet of peritoneum was done. A large flat sponge, moist with weak, warm, sublimate solution, was introduced so as to prevent the intestines from injury during the closure of the abdominal wound. Catgut sutures were used for this purpose. The wound was dressed with borated cotton, on which was smeared the following ointment: iodoform, one-half drachm; boracic acid, one drachm; sub-nitrate of bismuth, two drachms; vaseline, one ounce. Before tightening and tying the sutures, a glass drainage-tube was introduced and so placed behind the uterus as to drain that portion of the pelvis into which the pedicle had dropped. The omentum was carefully brought down in front and around the tube. The tube used seems to be a modification of Well's glass drainage-tube, the lower end being slightly curved and closed, but many perforations are found in its lower extremity. These perforations are larger than those in Well's tube, and I think they are too large as the tissues found their way into them, necessitating the use of some force in the removal of the tube. This gave the patient some pain, and must have disturbed the quietude of the parts surrounding its lower extremity in the immediate vicinity of the pedicle. The tube was removed thirty hours after the operation, and had been turned partly around and withdrawn to the extent of one inch at a previous cleaning. The manner of dressing the drainage-tube is important, and in this case the method adopted by Price was used. The tube having been placed in the lower angle of the wound with the flange which is three-fourths of an inch from the outer end resting upon the skin. The dressings were applied to the wound and carried a little distance below it towards the symphysis but leaving the end of the tube projecting through them. The five-tailed flannel binder was then applied; the tube still projecting through it. A piece of rubber dam about fourteen inches square was slipped over the end of tube and spread out upon the binder. Borated absorbent cotton with iodoform sprinkled upon it was used to cover the tube and absorb the discharge. The corners of the dam were turned up over the pile of cotton and pinned in such a way as to exclude the air; enclosing the cotton as it were in a rubber bag. Then to aid in keeping this bag of cotton in position another light binder was carried around the patient and over the bag of cotton. This might have been carried only from side to side of patient and secured to the flannel binder with safety-pins. The operation was now finished and the patient was quickly conveyed to her bed which had been supplied with hot blankets and heaters. She vomited several times, had hiccough and appeared severely shocked. Pulse was very slow, only about fifty beats per minute. She was kept very quiet with head low and she slowly reacted as the chloroform narcosis passed off.

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[1] Read before the Annual Meeting of the Massachusetts Medical Society (Hampden District) April 20, 1892.

The discharge through the drainage-tube was very moderate for the first six hours, after which it was never enough to fill the tube and color the cotton. The tube was however emptied several times of a little colored serum, but at the time of its removal the little serum found in it was clear. After the tube was removed a stitch was inserted and the dressing which had been slightly soiled from oozing by the side of the tube was removed and a new one secured in position by strapping. The binder was continued as before. The wound was in good condition.

The highest temperature recorded during the first week after operation was 99.4, while the pulse remained constantly at or below 70. The bowels were moved the fourth day with an enema; but, as its effect was slight, Rochelle salts were given which produced free catharsis; since which time the bowels have been sufficiently moved by an occasional injection of soap and water.

She has had no cough. The stitches were removed the eighth day. Patient was somewhat nervous that day and the evening temperature rose to 100.5° with a pulse of 76. She was allowed to swallow absolutely nothing for the first twenty-four hours after operation, and only tablespoonful doses of gruel, milk and beef tea for the next two or three days; since which time the dietary has been gradually increased, and at present she takes ordinary food. There has been no tympanites and the abdomen has been perfectly flat since the operation. We have every reason to expect a perfect recovery. The patient sat up upon the sixteenth day and upon each succeeding day thereafter, and now, May 9th, is entirely well.

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Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

(Continued from No. 22, page 553.)

ALKALIES IN UNIVERSAL PRURITUS.

Lange has found that sodium bicarbonate and lithium carbonate, combined with carbolic acid compresses, have a very prompt effect in relieving universal pruritus. He refers to an extreme case in which the condition was improved in a few days, with marked relief in six weeks, and in three months hypnotics were unnecessary.

BENZINE IN PEDICULOSIS.[3]

Nedzwiecki strongly recommends ordinary commercial benzine as the most effective, cleanly, and convenient application for destroying pediculi capitis or pubis. The affected parts should be freely bathed with the fluid for three or four minutes. Both pediculi and nits are killed almost instantaneously. As a rule a single application is sufficient, even in severe cases.

The smell of benzine is said to disappear very quickly. The remedy can be safely applied, even in the presence of an eczematous rash, since it causes only trifling pain, which soon passes off. The treatment must always be carried out in the daytime, as the substance is extremely inflammable.

THE TOXIC EFFECTS OF CHLORATE OF POTASSIUM.[4]

Dr. G. A. Fackler reports in the *Cincinnati Lancet-Clinic*, the case of a boy, fifteen years old, who had taken one hundred and fifty grains of chlorate of potassium in a period of six hours. The most striking feature was a slight bluish discoloration of the skin, especially marked about the lips, nose, ears and extremities. There was a slightly jaundiced appearance of the conjunctiva, abdominal walls not distended but painful on pressure, liver decidedly enlarged. During the examination the patient began to vomit, excruciating pain in the lumbar region followed and the patient lay moaning, retching, vomiting, and, with the peculiarly discolored skin, presented a rather harrowing picture. The urine was voided with marked strangury and sparingly, and upon examination was of a peculiarly yellowish-red color and found to contain albumen.

Sulphate of magnesia was administered and four hours subsequently the patient had had profuse alvine discharges, slight dyspnœa was present, and there were a number of yellowish-brown maculæ upon the side of the abdomen, the back, and anterior portion of the neck: acetate of potassium with tincture of strophanthus was ordered. The symptoms gradually improved, and within five days had entirely disappeared, with the exception of slight pain in the epigastrium.

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[3] British Medical Journal, January 2, 1892.

[4] Archives of Pediatrics, No. 93, 1891.

The best therapy for the future is to banish the remedy from our list of medicines, although it must be granted that in cases of throat affections and cystitis occasionally good results are witnessed, still, these results are wanting in a disproportionately larger number of cases. On the other hand, we have at our disposal a large number of substances which in their therapeutic value are not inferior to chlorate of potassium and do not possess much toxic properties. It is especially advisable never to employ it as a medicine for children.

POISONING BY GELSEMIUM SEMPERVIRENS.[5]

Dr. Jepson was called upon to treat a woman, aged forty, who was suffering from neuralgia in both temples. He gave her tincture of gelsemium in ten-minim doses every two or three hours; and as no relief had been obtained after one day, he ordered double doses in a quinine mixture. She took three or four doses during the night. Next morning at eight o'clock she seemed better, but an hour later she was found in a very peculiar state. Though perfectly conscious, she had lost power over her tongue; could not protrude it, could not articulate, could only swallow with very great difficulty. Her pupils were widely dilated, and she could not see clearly. She could not write, but nodded in reply in questions. A hypodermic injection of strychnine (grain $\frac{1}{120}$) was given with excellent results. Ten minutes after it there was a return of power in the tongue and hands, and an improvement in the vision. After a second injection there was still further improvement; she took food and stimulants; and all paralyses disappeared. She had some return of the neuralgia and was very weak for a few days, but eventually quite recovered and enjoyed better health than for some time previously.

PENTAL, A NEW ANÆSTHETIC.[6]

Pental is a clear, colorless, thin, neutral, unirritating, fluid, with a peculiar sweetish odor and taste. It is more inflammable than chloroform. It has been found to have a distinct anæsthetic action without unpleasant after-effects. The narcosis is not as profound as with chloroform, but it is sufficiently deep for the smaller and also larger surgical operations. Patients come readily under its influence in about four minutes and its use is seldom accompanied by the unpleasant features of anæsthesia by means of chloroform. Out of 120 administrations of the drug there were serious though not fatal symptoms in one case. The drug was administered in an inhaler a few drops at a time, and every precaution used with chloroform was taken, narcosis was continued from forty seconds to eight and one-half minutes. It seems possible that this anæsthetic may find a place in practice, but a proper estimate of its value can only be made after it has been used in a larger number of cases.

CHLORALAMIDE.[7]

Professor H. C. Wood and Dr. David Cerna have studied the physiological action of chloralamide and the results of their experiments indicate that the action of this drug upon the heart is so slight that it bids fair to be valuable as a hypnotic in cases of feeble heart; while its stimulating influence upon the respiration would seem to fit it for employment in cases of nervous exhaustion. The exact clinical value of a hypnotic can, however, only be determined by clinical study. After the use of it to a moderate extent, in various forms of insomnia, Dr. Wood considers it to be slower and less certain in its action than chloral. Rarely have unpleasant after-effects been noted, but he has seen in some cases distinct headache. It has been recommended by Hagen and Hüfler as of especial value in cardiac asthma.

LAVAGE.[8]

In the *Revue de Thérapeutic Medico-Chirurgicale* for 1891, No. 18, p. 498, we find the method of Dr. Lienevitch, who proposes to relieve the vomiting which follows the administration of chloroform, by lavage. He believes that not only the chloroform, but also the irritation of the peritoneum produced by the antiseptics, is accountable for this symptom. He employs the tube of Faucher and washes out the stomach with warm water in which one-half to one per cent. of bicarbonate of soda has been dissolved, until the water returns clear. The abdominal walls are compressed (after an operation of laparotomy has been performed) during the washing. The results are excellent, in that, if necessary, water sufficient for the needs of the patient can be left in the stomach. The general condition improves, because there is freedom from nausea, gaseous accumulations, vertigo, and epigastric distress.

LACTOSE AND GLUCOSE AS DIURETICS.

B. Vespa has made a number of experiments as to the diuretic effect of lactose and glucose in various diseases. In the ascites of hepatic cirrhosis the diuretic effect was almost *nil*, and in acute and chronic nephritis it was hardly appreciable. In pleurisy with effusion, on the other hand, and in cardiac disease with disturbed compensatory action, the diuretic effect of lactose and glucose was most marked. As neither of these substances has any bad effect upon the heart or the nervous system they can be given at all times and in combination with any other remedy. They are well borne and do not cause nausea or other disagreeable effects.

(To be continued.)

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

The Seventh Annual Meeting was held in the Army Medical Museum, Washington, D. C., May 24, 25, and 26, 1892.

FIRST DAY. — TUESDAY.

Dr. V. C. Vaughan, of Ann Arbor, Mich., read a paper on

A BACTERIOLOGICAL STUDY OF DRINKING-WATER.

Since the opening of the Hygienic Laboratory of Michigan University, October 1, 1888, more than one hundred and fifty samples of drinking-water have been examined at the request of health officers. These examinations have been both chemical and bacteriological, and the latter has developed some facts which may be of interest.

There are kept on hand at the laboratory a number of sterilized bottles, with glass stoppers, and of two and one-half litres capacity. These bottles are sterilized by steam, then set in wooden crates so arranged that the handle of the crate holds the stopper in place and makes it impossible to open the bottle without removing the handle, which is fastened by means of four screws. The use of sealing wax about the stopper is forbidden, and in cases where the over-zealous collector has resorted to this method "to make things more secure," the samples have been discarded and fresh bottles have been sent, with the request that the sealing be omitted. In some instances a piece of sublimate gauze has been placed over the stopper and fastened about the neck of the bottle. This admits of the collector placing his seal upon the outside of the gauze. A health officer writes or telegraphs that he wishes one or more samples examined, and the desired number of bottles is sent. He is instructed to fill these and to return them immediately. In the great majority of cases the bacteriological examination is commenced at the laboratory within thirty-six hours after the samples have been collected. In some instances, the collector has been instructed to obtain new bottles and to sterilize them, but as a rule this has not worked satisfactorily, and many samples having been discarded on learning the method of sterilization employed, the above-described method is now insisted upon.

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[5] Practitioner, January, 1892.

[6] Wiener Klin. Woch., Nos. 3 and 4, 1892.

[7] New Remedies, June, 1891.

[8] The American Journal of the Medical Sciences, 1891, No. 236.

As soon as the sample reaches the laboratory, gelatine plates are made, and at the same time the chemical analysis is begun. The number of germs in a given quantity of water (one drop or one cubic centimetre) is determined by counting the colonies which appear on the plates after twenty-four, forty-eight and seventy-two hours. It has been found that this number is very variable, and that it bears no constant relation to the amount of organic matter in the water as determined by chemical analysis. Moreover, the results obtained have led to the conclusion that the question of the fitness or unfitness of the supply as a drinking-water, cannot be answered by the number of germs. Some waters which contain hundreds of germs in each drop have been used by communities without causing sickness, while typhoid fever has, beyond any reasonable doubt, been traced to the use of water containing less than a score of germs in each drop. However, a record of the number of germs is kept in all instances; then each germ is isolated and grown on the various nutritive media. In fact, the life history of each germ is carefully observed and the observations recorded. The manner in which the germ grows on gelatine plates, in gelatine tubes, on agar, on potato, etc., is noted. The form and size of the germ, its reactions with staining re-agents, etc., are also studied and recorded. The effect of each germ upon guinea-pigs, mice, rats and rabbits, has also been studied. Especial attention has been given to those characteristics by which it has been proposed to distinguish the typhoid germ from other bacteria found in water.

Some of the conclusions which have been reached in this study are as follows:

(1) Many of the germs found in drinking-water will not grow at the temperature of the human body. These germs, therefore, are not capable of inducing disease. It matters not how rich a given sample of water may be in these germs, if it contains no others, it cannot be said that the water is a source of typhoid fever. The freedom of communities, using such water, from typhoid fever, seems to justify this conclusion. Such a water may not be, and certainly often is not, a desirable drinking-water. It may be turbid with suspended matter, unpleasant to the taste, and give off a disgusting odor, but there is no evidence that it can cause disease. Several interesting examples of this kind have come under observation. One of these may be mentioned. A certain city of about ten thousand inhabitants took, for a while, its public water-supply from a shallow lake, the bottom of which was covered with decomposing organic matter of vegetable origin. This water was turbid, unpleasant to the taste, and gave off unpleasant odors, but none of the bacteria in it grew at 38° C. On the other hand, many of the inhabitants of the city took their drinking-water from shallow wells, the water of which was clear, sparkling and palatable. The well-water, however, contained germs which grew abundantly at 38° C. The use of the lake-water in preference to that supplied by the wells, was recommended early in the spring of 1891. Some followed the advice, others did not. During the late summer and early fall of 1891, there were more than two hundred cases of typhoid fever in the city, and at a public meeting held by the State Board of Health in this place, about the last of October, every physician in the city agreed to the statement that there had not been a case of typhoid fever among those who used the lake-water exclusively. This positive testimony of the physicians was also confirmed by the other citizens.

(2) Of the germs which grow at 38° C or at higher temperatures, some are fatal to animals when injected subcutaneously, while others are not. This renders a division of these into toxicogenic and non-toxicogenic germs possible.

(3) There is no proof that these non-toxicogenic germs can multiply in the animal body. Indeed, all the evidence which has been gathered so far goes to show that they not only fail to multiply in the bodies of the rat, mouse, guinea-pig and rabbit, but some die when injected under the skin or into the abdomen. However, this does not furnish positive evidence that they would not multiply in the body of man. For these reasons, waters containing these germs have not been positively condemned, though it has been advised in some cases that their use should be discontinued.

(4) Some of the toxicogenic germs found in drinking-water produce the same symptoms and the same post-mortem appearances in the above-mentioned animals as are observed after the employment of Eberth's germ. Moreover, their pathogenic (toxicogenic) properties as tested upon these animals, are fully equal to those of Eberth's germ. They will not only live, but will multiply in the animal body. Waters containing these germs have in all cases been condemned.

(5) More than one germ obtained from drinking-water forms an invisible growth on potato.

(6) Several germs found in drinking-water will grow on the media prepared by Parietti, Uffellmann and others, as means of recognition of the Eberth germ. About thirty of the germs found in these samples of drinking-water have been studied sufficiently to admit of their identification. Several of these differ from any which have been reported by other investigators.

Dr. G. M. Sternberg asked whether these toxicogenic germs resemble the typhoid bacillus in morphology and whether they belong to the same class or group.

Dr. V. C. Vaughan: The germs are bacilli and all motile. One, the bacillus venenosus, is shorter and thicker than the Eberth germ that I got from the Hygienic Institute at Berlin. Another the bacillus venenosus brevis is still shorter; about twice as long as broad. There is one that liquefies gelatin only after four to six weeks. After it has been grown at a high temperature for a while it ceases to liquefy gelatin.

Dr. G. M. Sternberg: It is interesting that this germ liquefies at one time and at another time does not. It is only one case out of a good number that have been noticed by bacteriologists. Some of the phosphorescent bacteria behave in this manner. I got out a bacillus in Cuba which was a liquefying bacillus for a time, and after a time it failed to liquefy. We cannot, therefore, use the liquefaction of gelatin as an absolute characteristic to enable us to differentiate these bacteria. The definite characters which were first given to the typhoid bacillus will not stand. As to the invisible growth upon potato, we have all given that up as being distinctive. We encounter great difficulty in differentiating these lower organisms; and Dr. Vaughan has found, as many others have found, that it is hard to decide whether he has simply different varieties or well-defined species. There can be no doubt that we have species amongst these germs as well defined as in the higher plants.

Dr. W. H. Welch: The distinction which Dr. Vaughan makes between the terms "pathogenic" and "toxicogenic" is not what I anticipated it would be. I supposed that he would designate as a toxicogenic germ one that causes death by intoxication without multiplication of the germs inside the body. The distinction which he makes is doubtful and is difficult to carry out practically. Toxicogenic and pathogenic germs, according to Dr. Vaughan, are both capable of multiplication within the body, but the pathogenic ones cause lesions and symptoms that are definite and recognizable, and the toxicogenic ones cause symptoms and lesions that are vague and undefined. It seems to me this distinction is indefinite and of little value. I agree with Dr. Vaughan as regards the difficulty in the recognition of the Eberth bacillus.

Dr. Vaughan's statement that a number of bacteria, as obtained originally from water, appeared to be very unlike the typhoid bacillus, and that the same bacteria when obtained from the animal after inoculation grew like the typhoid bacillus, is, if confirmed, an interesting and remarkable observation. There is, however, a possibility of fallacy there which he has probably had in mind. A great many of these bacilli produce intestinal changes, and under these circumstances the bacillus coli communis is very likely to enter the organism. In this case one can readily obtain from the spleen and other organs the bacillus coli communis which may be mistaken for the micro-organism injected. It is perfectly true that one may obtain from the spleen of typhoid fever patients a number of different bacilli; and, as a rule, one can obtain in cases of typhoid fever, not perhaps so often from the spleen as from the kidney and lung, the bacillus coli communis. There is no doubt in my mind that a number of those who have written about the characters of the typhoid bacillus have been working with the bacillus coli communis, and not with Eberth's bacillus.

Unless one adopts the view of Dr. Vaughan, which is at present hardly likely to obtain general acceptance, that typhoid fever is not due to any one specific germ, but to a variety of more or less related germs, it is difficult to see what the bearing of these experiments is upon the etiology of typhoid fever. I am not prepared to go the length of thinking that all these germs can be changed over into germs that may produce the same results as the typhoid bacillus and still less that they may under certain conditions acquire all of the morphological and cultural properties of the Eberth bacillus.

Dr. V. C. Vaughan: If I could have had a number of spleens from the persons who had been drinking of each of these waters, it would have helped me very much. This is what I want to get in the next set of waters that I examine. When this is done, I think all will be able to decide positively, whether typhoid fever is due to one specific germ or whether there are varieties of the typhoid germ.

I meant the term "toxicogenic" to be indefinite. I cannot say that one of these germs will cause typhoid fever, because I have not tried it on man, and the disease that we get in the lower animals is not typhoid fever. I do not want to say that these germs are capable of producing any disease, and still I want to distinguish them from germs which do not grow at 38°, and which are capable of producing poisons outside but not inside of the body. It seems to me that to save the word "pathogenic" from meaning nothing, it would be better to use the word "toxicogenic."

With reference to the proof tests with the coli communis, I have studied this germ right along with the coli communis and Eberth's bacillus, and have made proof tests, and am satisfied that none of these germs are the coli communis, and that none of the germs that I have gotten from the spleen are the coli communis.

Certainly the great epidemics of typhoid in the cities generally start from the pollution of the drinking-water with typhoid stools; but I also believe that typhoid fever may originate without a pre-existing case of typhoid fever. I have seen cases of typhoid fever scattered amongst the farming population, amongst men, women and children who have not been off of their farms for weeks, and it would take a good deal to convince me that there was a common source of infection in these cases. I believe there are different germs, or different varieties of the same germ, that may cause typhoid fever, and that they are widely distributed.

Dr. G. Wilkins, of Montreal, presented a paper on

THE TREATMENT OF TYPHOID FEVER BY COLD BATHS.

The total number of cases upon which this paper is founded is 39, with two deaths. Of this number, seventeen were under the care of my colleague, Dr. Stewart, who is quite as warm an advocate of the baths as I am. During the first six months in which I made use of the cold baths, I adopted Liebermeister's method. Since then I have adhered to Brand's method, with slight modifications.

I seldom keep the patient in the bath longer than ten or twelve minutes, and place him there only when the temperature in the mouth reaches 102.6°. Whilst in the bath-tub, cold water compresses are placed on the head or the water poured over, and at the same time another assistant applies friction to the surface of the body. Sometimes, whilst in the bath, or just before it, half an ounce to one ounce of whiskey is given either in milk or water. The temperature of bath in 31 cases was 68° to 70°. In the remaining cases, temperature 80° reduced to 68°. Greatest number of baths in any one case, 35; smallest number, two; average reduction of temperature, 2.8°, duration of fever, averaged thirty days; the date of entering into hospital, or commencing treatment, being on an average the tenth day.

I have not yet adopted the routine of treating every case of typhoid by cold baths. I treat mild cases on the expectant plan.

In regard to hæmorrhage in this method of treatment, Hare states that in the large number of cases (1,173) in which he used the cold bath, whilst the actual mortality from hæmorrhage was somewhat less than those treated on the expectant plan, the occurrence of hæmorrhage was as frequent, though not more so.

It is a popular belief amongst the laity that the cold bath will tend to produce mischief in the respiratory apparatus, that is, the patient will "take cold"; as most of us know, quite the reverse is the case.

The advantages of the cold bath over other methods of treatment are: Immediate reduction of temperature from two to four degrees; resting quietly after it, or sleep; increased tonicity of the heart and slowing of pulse; fewer cases of lung complication, and, if present, marked amelioration of their symptoms.

The contra-indications are: Hæmorrhage; peritonitis, and also determined opposition of patient.

Dr. Osler: I will give briefly our experience with this method of treatment at the Johns Hopkins Hospital. From the opening of the hospital in May, 1889, until July 1, 1890, we treated the cases symptomatically. There were thirty-two cases with seven deaths. This was an unusually high mortality, which is accounted for in large part by the very serious nature of the cases. From July 1, 1890, to February 1, 1892, there were 107 cases treated rigidly by the Brand method. The temperature of the bath was 70°; the patients were bathed every third hour when the temperature rose above 102.5°. There were only eight deaths. One of these cases was not treated as he came in in a moribund condition. The death-rate is practically that which has been obtained by the Brand method in all of the general hospitals in which it has been employed, — about seven per cent. In the garrison hospitals the percentage is two to three per cent. Cold baths do not always reduce the temperature, and there are cases treated under the most favorable circumstances which pursue a course almost uninfluenced by the baths. It is interesting to note historically that Nathan Smith, in his article on the treatment of typhus fever, written in 1823 or 1824, advocated, in a very interesting way, the treatment of the fevers by cold, and practised it as early as the summer of 1798, very shortly after its introduction by Currie.

Dr. Kinnicutt: This method of treatment has been adopted in the wards of St. Luke's Hospital for the past few years with exceedingly favorable results. My clinical experience corresponds closely with that of Dr. Osler and the author of the paper. I have frequently had cases of catarrhal pneumonia associated with the typhoid process that have done exceptionally well under the cold bath treatment. The greatest number of baths I have ever given in a single case is 175. The case was of exceptional gravity. The patient is now doing full duty as nurse in the hospital.

Dr. Wm. Pepper: I would like to say a word about the labors of Hiram Corson, of Pennsylvania, in this direction. At the age of ninety years he is still practising in what is now a thickly settled region, but which was for many years but sparsely populated. He has advocated and practised the cold water treatment of the infectious diseases for the past sixty years, in opposition to all kinds of criticism. I want also to say a word of tribute to the value of the work of our colleague, Dr. Wilson, to whom, more than to any other man in America, is due the credit of calling attention to the cold water treatment of typhoid.

The difficulties of using the bath in private practice are vanishing. One of the leading druggists of Philadelphia, Mr. Frank Morgan, keeps a movable bathtub, made of fibre, available for the use of physicians at any hour of the day of night. These tubs are very light, can be had of any size, and can be moved through the door of any house. A hose thirty or forty feet in length will permit of its being emptied into some suitable place. It is in private practice that we will probably get the most complete satisfactory statistics.

I wish to testify to my own progressive conversion to belief in this treatment, and the desirability of its use in the vast majority of cases of typhoid as a routine treatment. I would like to emphasize the importance of friction during the bath. I feel that in this Brand has laid stress upon a point of first importance. We ought not to forget, also, the value of the cold pack.

Dr. I. E. Atkinson: I wish to speak with the most unqualified approval of the cold bath treatment, from my own experience. There is one point in the history of typhoid fever that will always prevent our getting the statistics down to a desirable point of lessened mortality. There are a certain number of cases in which the temperature may never reach 102.5° and yet are fatal; these will probably not come under the influence of the cold bath treatment as at present conducted. I have now a case which threatens to die in which the temperature is constantly below 102°. Some statistics published by German authors, of typhoid fever treated during the Franco-Prussian war, show an exceedingly large number of fatalities in a series of cases where the temperature did not reach 102°. These cases probably occur often enough to keep the mortality at from five to eight per cent. in spite of any antipyretic treatment that may be adopted.

Dr. W. G. Thompson: Two years ago I undertook the Brand method and have since treated forty-eight cases by it, with results so satisfactory that I have reached the point where if I had the disease myself I should insist on being treated this way. I am surprised that Dr. Wilkins did not emphasize more the benefit of friction. It seems to me that the value of the Brand method of treatment, from the physiological standpoint, is certainly a double one; we apply a shock of cold to a very large surface of the body, which is a strong stimulant, and then we supplement this by a mechanical stimulant over an equally large surface. It does not seem to me that the reduction of the temperature is the principal good obtained. I have seen in this series of forty-eight cases three instances of hæmorrhage of the bowels occur, but I could not attribute them directly to the baths as they had no relation to the time of the baths. There were only three deaths in these forty-eight cases, or about seven per cent. I should like to ask Dr. Wilkins and also Dr. Osler whether they have regarded the occurrence of menstruation during the administration of baths as a contra-indication for their continuance.

Dr. Tyson: I desire to call attention to the cause of death in two cases of typhoid treated in this manner. The first case, a man, died a week or so after the bathing had ceased, the temperature during that time not reaching 102.2°. He died of embolic pneumonia, succeeding to numerous abscesses caused by large hypodermic injections of strychnia given by the assistants who thought he was in danger of heart failure. The second was a case of peritonitis, succeeding perforation. He was admitted on the tenth day of the disease and died on the seventeenth day. The cold bath treatment evidently does not prevent perforation.

Dr. Stockton: It occurs to me that there are not a few cases which have benefited by the employment of baths even though the temperature at no time reaches 102.4°. I have seen cases where it seemed to me that the cold bath, under these circumstances, had favorable results. I also think we find undoubted benefit in the employment of the cold baths where the temperature does not remain lowered after them for any length of time.

Dr. G. Wilkins: I believe friction is very important. The cold bath and friction has the efficacy of not only cooling the blood but the further effect of imparting tone to the vessels which has been lost by high temperature.

With regard to menstruation, my recollection is that it is not a contra-indication, but I have had no cases in which it has occurred.

I have had none of those cases to which Dr. Atkinson has referred — cases of continuous low temperature — but I do not see any objection to the administration of a bath in these cases, especially when combined with friction.

(*To be continued.*)

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AMERICAN SURGICAL ASSOCIATION.

Annual meeting held in Boston, May 31, June 1, and 2, 1892.

TUESDAY, FIRST DAY. — MORNING SESSION.

The Association was called to order by the President, Dr. P. S. Conner, of Cincinnati, who delivered the

ANNUAL ADDRESS.[1]

The first paper was that on

THE TREATMENT OF UNCOMPLICATED FRACTURES OF THE LOWER END OF THE HUMERUS,

by Dr. John B. Roberts, of Philadelphia.

The following are the conclusions presented:

(1) In the treatment of fractures of the lower end of the humerus, the divergent angle between the axes of the arm and forearm must be preserved; and hence, dressings which interfere with the normal difference in level of the radius and ulna are not permissible.

(2) Fractures of the lower end of the humerus of ordinary severity are, as a rule, more successfully treated in the extended than in the flexed position.

(3) Because the "carrying function" is less liable to be impaired.

(4) Passive motion at an early date is harmful; and should be deferred until union has occurred and the dressings have been finally removed.

(5) Good results as to anatomical conformation and as to motion are generally to be expected and can usually be obtained.

(6) Recent fractures in which satisfactory coaptation is not obtainable under anæsthesia may with propriety be subjected to exploratory aseptic incisions. Old fractures, in which deformity and impairment of function are marked, may, within certain limitations, be subjected to refracture or osteotomy, for the relief of these conditions.

Dr. John E. Owens, Chicago, said that he had never treated fractures of the lower end of the humerus in the extended position. The treatment of such fractures in the extended position seems to recommend itself for the following reasons: in the extended position there is no room in the olecranon fossa for neoplastic deposits; the great super-abundance of soft tissues in front of the joint when the arm is flexed marks the symptoms; the soft tissues in front of the arm presents more opportunity for laceration and cicatricial contraction; in the extended position no traction is made upon the vessels and nerves; that the natural angularity between the arm and forearm is preserved.

The speaker had experienced considerable timidity in the treatment of these fractures at the elbow on account of the impaired mobility which often results. The natural position of the arm in relaxation is that of flexion. He had treated these fractures in the flexed position. The extended position may cause tilting forward of the upper end of the lower fragment or its rotation forwards or hyper-extension may be caused.

Passive motion is resorted to in four or five weeks to an extent short of causing suffering. The material used for the splint is plaster-of-Paris. He had treated many of these fractures in cases where the injury resulted from railroad accidents where suits for damages are common, but he knew of no case where the question of defective treatment entered successfully.

Dr. John H. Packard, of Philadelphia, remarked that it was often difficult to tell the exact character of a fracture at the elbow-joint even under the most favorable opportunities for examination. He thought that the carrying function was rarely perfectly maintained under any plan of treatment. After fracture running into the joint there is liability to the formation of adhesive lymph. He thought that passive motion should be resorted to before the organization of the adhesive lymph. He advocated treatment of these fractures in the flexed position and described a splint of sheet zinc which he had used with satisfaction.

Dr. Charles B. Porter, of Boston, thought that the treatment advocated in the paper violated one of the first principles in the treatment of fracture, that is, to place the muscles in a state of relaxation. In the extended position the muscles which should be relaxed are not at rest. He had never seen any statistics in regard to the results of treatment of fracture in the extended position, in comparison with those in the flexed position. Until these are forthcoming, the profession will be unwilling to accept this as the best method of treatment. He therefore gave his adhesion to the treatment of these fractures in the flexed position rather than the extended position. Before the fracture is dressed, it should be adjusted under ether and then not looked at for two or three days and if found in position not again dressed for a week or ten days. In old fractures where there is sufficient deformity to demand osteotomy, resection of the elbow is better and by it a very useful arm may be secured.

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[1] See page 569 of the Journal.

Dr. J. Ford Thompson, Washington, D. C., did not approve of the plan of treating fractures of the lower end of the humerus in a right-angled splint. In his treatment he adopted that plan of treatment which permitted the axes of the fragments being brought into relation with each other. This he had found to be the extended position. In two cases of compound fracture he had been unable to bring the fragments into line until the forearm was extended. The difficulty about the straight position is that it is disagreeable and uncomfortable to the patient. He considered plaster-of-Paris to be the best dressing.

Dr. A. G. Gerster, of New York, held that the bad results which are often seen after fractures at the lower end of the humerus are not necessarily due to the method of treatment. In several cases where he had had an opportunity to examine the joint he had found that the trouble was due to the throwing out of callus at points where the callus had been stripped off. Bad results are also often due to insufficient examination. Anæsthesia is not employed and the dislocation which may accompany the fracture is not recognized. In the treatment of the fracture after replacing the fragments, such methods must be employed as will hold them in place. The flexed or extended position must be employed as necessary. He had found that, as a rule, the fragments were best held in place by treatment in extension. He does not employ passive motion and considers it useless and often harmful.

Dr. Stephen H. Weeks, of Portland, Me., said that it was his custom to treat supra-condyloid fracture of the humerus in a position of flexion, but he was satisfied that satisfactory results are secured by different methods of treatment.

Dr. T. J. Dunott, of Harrisburg, thought that the manner in which the injury had been received had a great deal to do with the ultimate result. He was inclined to think that the flexed position would give a good result in many of these fractures associated with severe injuries. He prefers to treat the arm in such a position that the radius and ulna are parallel. In many cases where great injury is done to the soft parts, no splint can be applied, and under such circumstances the arm should be laid on a pillow and have water and laudanum applied for some days until the tumefaction goes away. If necessary, incision into the tense tissues is made.

Dr. W. H Carmalt, of New Haven, said that in some cases the ulna acted as a wedge between the two fragments at the lower end of the humerus forcing them apart, and reported a case which he had recently treated in the flexed position, using extension by means of weights and obtained a satisfactory result.

Dr. J. Collins Warren, of Boston, had observed the difficulty mentioned by Dr. Carmalt, but had attributed it to drawing forward of the condyles rather than to sinking in of the ulna. Dr. Bigelow had laid down the excellent rule of going through the movements for reducing a dislocation at the elbow in these cases. In this way the danger of overlooking a dislocation is avoided, and if there is simply a fracture, the manipulations mould the bone into place. The flexed position with an internal angular splint seems to be the best method.

AFTERNOON SESSION.

THE TREATMENT OF UNCOMPLICATED FRACTURES OF THE BASE OF THE RADIUS,

by Dr. John B. Roberts, of Philadelphia.

The following conclusions were presented :

(1) Fractures of the lower end of the radius vary comparatively little in their general characteristics, because but one form is usual.

(2) Muscular action has little, or nothing, to do with producing or maintaining the deformity.

(3) Immediate reduction of the fragments is the essential of treatment.

(4) Many of the splints devised for the treatment of this fracture have been constructed in ignorance of the pathology of the condition.

(5) The ordinary fracture of the lower end of the radius usually requires no splint, and should be dressed with a wristlet of adhesive plaster or bandage.

(6) When a splint is required, a narrow, short, dorsal splint, fixing the wrist, is all that is necessary.

(7) The method of dressing here advocated is the best, because it annoys the patient as little as possible by avoiding cumbersome appliances, and permits free voluntary movements of all the finger-joints.

(8) Passive motion is unnecessary until union has occurred and the dressings have been finally removed.

(9) Good use of the wrist and fingers is early obtained, and the anatomical conformation is restored as well as, and perhaps better than, by other more complicated dressings.

(10) Old fractures, which have been improperly treated by omission of immediate reduction, may with considerable success, be subjected to refracture at the end of six or more weeks. At later periods, readjustment may be possible only by osteotomy, which is a legitimate means of treatment.

Dr. John H. Packard, Philadelphia, had, in 1879, read a paper on this subject before the American Medical Association, in which he took the ground that the great difficulty in many of these cases arose from non-reduction. If the fracture of the lower end of the radius commonly known as Colles's fracture, is once reduced, there is little tendency to reproduction of the deformity. Many physicians think that all that is necessary is to apply the proper dressing. The most important step in the treatment is reduction. He did not agree with the fifth proposition, that no splint is required. He employs an anterior splint padded to fit the curve of the radius and reaching to the ball of the thumb. The patient can use the fingers freely. In ordinary cases who will take proper care of the arm, this simple splint suffices.

Dr. Charles B. Porter, of Boston, emphasized the necessity for complete anæsthesia, then complete reduction and breaking up of the impaction, and then the application of a posterior and anterior splint; after a week or ten days, he allows motion of the fingers, and in two weeks motion at the wrist. He considers passive motion unnecessary except in old people where there is a rheumatic or gouty tendency.

Dr. J. Ford Thompson, Washington, dwelt upon the disastrous results that often followed failure to reduce the displacement, or the use of improper dressings. After reduction of the fragments, he applies an anterior and posterior splint, secured lightly to the arm. He had not found it necessary, as a rule, to use ether to accomplish reduction. In cases where there was severe pain following the application of the ordinary splint, instant relief followed the application of a plaster splint, the hand being carried well to the ulna side. In several cases where the hands were useless from the inflammation of the sheaths of the tendons, he had tried to break these up under repeated administrations of anæsthetics, but the results had not been very marked.

DR. JOSEPH RANSOHOFF, of Cincinnati, said that in some cases the reduction could not be effected so readily as had been described. He had had three or four cases in which extension would not overcome the difficulty, and in such cases hyper-extension has been resorted to. In the treatment he is partial to Levis's splint. After a week or ten days passive motion is resorted to.

DR. CHARLES B. NANCREDE, of Ann Arbor, called attention to the fact that a certain amount of the bone-tissue at the seat of fracture was destroyed, so that some deformity will necessarily follow. Reduction is the most important measure in the treatment. The fragments are then to be held in place by suitable apparatus.

FIBROID TUMORS OF THE UTERUS,

by JOHN HOMANS, M.D., of Boston.

Fibroid tumors were defined as aggregations of normal uterine tissues in abnormal situations and masses. They may cause symmetrical or more or less one-sided enlargement; they may be in the walls of the uterus or protrude towards its outside or towards its inner cavity; they may be incorporated with the uterus or connected with it by a broad attachment or by a pedicle, or they may be entirely separated from it and get their nourishment from the vessels of the omentum or mesentery. They may be dense and œdematous, or filled with lymph-spaces, or they may in very rare instances be fibro-cystic. It is probable that a certain number of the tumors which have been described as fibro-cystic belong to the class of fibroids with dilated lymph-spaces. True fibro-cysts are very rare.

In size these tumors vary from that of a mere dot to masses weighing fifty or more pounds. Their growth is slow. They are of common occurrence. In the past fifteen years the author had seen about 520 fibroid tumors.

Operations to relieve women with fibroid tumors are rarely necessary. The writer had operated on only 60 of these 520 cases, eleven per cent. The conditions which should guide us in recommending removal of the tumors are, when they threaten life by hæmorrhage; when they are unbearable from their weight or the inconvenience they cause; when in a young woman they cause distress and shame from the alteration in her figure; when they cause much pain; when they cause serious obstruction of the circulation, or interfere with the action of the digestive or eliminative organs; when they cause obstruction of the bowels; or when their pedicles have become twisted and sometimes the whole uterus becomes twisted on its axis.

Death by hæmorrhage is rare. The speaker knew of only three instances. In fibroids complicating pregnancy, the tumor may threaten to render delivery impossible, but nature will generally get the obstruction out of the way if you give her a chance.

The solid fibroid tumors rarely have adhesions, and are removed without much difficulty. Of fibro-cystic tumors the speaker had met with only eight in the 520 cases. None of these were successfully removed. One woman recovered from an incomplete operation. The others all died. The author had reported an extraordinary case of twisting of the uterus as the pedicle of a large fibroid tumor. The uterus was twisted one and a half times on its axis. The case was fatal, no operation having been done.

The natural history of ninety per cent. of fibroid tumors is to remain stationary after reaching a certain size and after the menopause to become cretaceous and atrophied. About ten per cent. require removal. The average age at which the speaker had operated was thirty-nine years.

Treatment by ergot alone is usually ineffective; combined with curetting it helps to stop hæmorrhage. Treatment by high doses of electricity, a la Apostoli, sometimes stops hæmorrhage, almost always relieves pain and gives strength, but rarely diminishes the size of the tumor. In four cases the speaker had practised removal of the ovaries for the cure of fibroid tumors. In one woman, forty-four years old, the tumor disappeared in a few weeks, and menstruation at once ceased. In another, thirty-three years old, the catamenia gradually ceased after three years and the tumor remained about the same. In another, thirty-four years old, there was irregularly recurrent bleeding for eight months after operation. A fourth case, thirty-six years old, was not at all relieved by the operation. He was inclined to regard this method as unreliable.

Curetting often cures the hæmorrhage completely. This is followed by the application of tincture of iodine. The surgical treatment at the present time is almost wholly by removal of the tumor, with or without the uterus. If the tumor has been protruded into the cavity of the uterus, it should be enucleated and removed under careful antisepsis. Other tumors requiring removal must be removed by abdominal section. The operation may be finished in several ways. Sometimes the wound in the uterus can be closed by stitches or the pedicle may be treated by the extra-peritoneal method after constriction with the serre-nœud. Sometimes the stump is simply tied, as is the pedicle of an ovarian tumor, and then dropped. Sometimes the stump is turned into the vagina. All the different methods depend for their fundamental success on asepsis and on securing the vessels of the broad ligament, no matter in what way the pedicle or neck or body of the uterus is ultimately disposed of.

The condition of most patients from whom fibroid tumors have been removed is very comfortable. Some suffer from "hot flashes." Others grow extremely fat. A certain proportion, particularly those in whom the pedicle has been treated extra-peritoneally, suffer from ventral hernia.

Sometimes the bladder is cut off by the wire ecraseur, but in the only case he had seen the bladder healed in a few weeks by keeping it drained; and during the ten years that have elapsed since the operation, the bladder has been perfectly normal.

The length of the incision does not complicate the operation, provided there are no adhesions. Very rarely insanity follows the removal of a fibroid, as it does other surgical operations. The author had never seen this complication follow hysterectomy. He had seen two cases of tetanus in the case of other operators, but had had no case himself after hysterectomy. He had had one case follow ovariotomy.

He invariably sees that patients who have recovered from abdominal hysterectomy are fitted with a firm abdominal supporter, and impresses upon them the necessity of being careful about carrying heavy loads or straining themselves.

DR. A. VANDER VEER, Albany, said that in looking over his notes he had found that the age from thirty to forty-eight years has been most prolific in the development of these tumors. The hæmorrhage which is usually the symptom that attracts the attention of the patient, is dependent not so much upon the size of the tumor as upon its location. The hope that after the menopause is reached the fibroid will subside is not always verified. In some cases, the tumor seems to take on a more active growth at this time. As to treatment, curetting, with packing with iodoform gauze, will often stop bleeding. When this fails, in small fibroids, oöphorectomy invariably cures except in soft myomas. The danger in treatment rests with the size of the tumor. It is the large ones that give the mortality after operation.

DR. J. IRVING MEARS, Philadelphia, held that where the only reason for the removal of the tumor was the large size of the abdomen, giving rise to unpleasant remarks, we should not be guided by the patient's desire that the operation should be done. He related the case of an unmarried woman, who desired the growth removed on account of the distention of the abdomen which it produced. He refused, and she passed into the hands of another practitioner who did operate, the patient dying five hours later. Dr. Mears divided these cases requiring operation into two classes. We are justified in operating where the hæmorrhage endangers life; and we are justified in operating when the pressure symptoms are such as to make life unbearable. There are, however, many cases in which, under palliative treatment, life may be prolonged, the patient rendered comfortable and be able to enjoy life. He had found electricity palliative, but not curative. The tumor is sometimes reduced in size.

DR. GEORGE W. GAY, Boston, spoke of the treatment of fibro-cystic tumors, and referred to the use of tapping. He reported one case in which he began tapping in 1879, repeating it every two or three weeks for four years — ninety tappings in all were made. The patient is now in good health with a large abdomen, but has not been tapped for years. Other similar cases were reported.

DR. ROBERT ABBÉ, New York, referred to the value of the Trendelenburg posture and the early securing of the arterial supply of the uterus in these operations. He was rather surprised at Dr. Homans's assurance that death from hæmorrhage was rare. He had thought the contrary. It is the symptom that frightens the patient and alarms the surgeon. He had had fair success with electricity, and would advise it in many cases. The tumor will grow but the hæmorrhage will cease.

DR. JOHN HOMANS, Boston, said that the use of strong currents of electricity to the interior of the uterus caused some change to the mucous membrane, checking bleeding, but it did not prevent conception. It was his custom to advise patients with fibroid tumors not to marry. Cases bearing upon this point were related.

(*To be continued.*)

CHOLERA in a severe epidemic form is reported from the Cashmere valley in India.

Recent Literature.

A System of Practical Therapeutics. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, assisted by WALTER CHRYSTIE, M.D., late Physician to St. Clements Hospital, and Instructor in Physical Diagnosis in the University of Pennsylvania. Vol. I. Philadelphia: Lea Brothers & Co. 1891.

This comprehensive system of therapeutics is intended to present to practitioners the views of those best qualified to discuss the treatment of disease, and to include the result obtained by investigators who have done much to advance therapeutics both as an art and a science. Volume I begins with a masterly introduction on "General Therapeutic Considerations," by Prof. H. C. Wood. It covers only thirty odd pages but it deserves to be read and re-read until its precepts become a part of the reflexes of every physician.

An article on "Prescription Writing and the Combination of Drugs," by J. P. Remington, Ph.D., contains much that is serviceable about incompatibility and prescription writing, but a portion of it is too pharmaceutical in character for a work of this kind. Details as to filling capsules, cutting lozenges, sealing cachets, decoction vessels, etc., with illustrations of each, serve to dilute rather than strengthen the article.

Following this is a good article on "Electro-Therapeutics," by A. D. Rockwell, M.D., in which the use of electricity in nervous diseases and gynecology is discussed at length.

An eminently practical and excellent article on the "Rest Cure for Neurasthenia and Hysteria," by John K. Mitchell, M.D., deserves commendation, although it contains nothing especially new.

The article on "Swedish Movements and Massage," by Dr. Benjamin Lee, is illustrated by numerous cuts, and the pages devoted to this subject and its applications would make up a fair-sized treatise.

Dr. E. M. Hartwell has written an excellent article on "General Exercise," for medical purposes.

In "Climate," by Dr. S. Edwin Solly, the general principles of climatotherapy are well outlined; the chief considerations which should govern one in the selection of a climate are rehearsed, and a valuable collection given of the reliable observations which have been made on the effects of climate upon phthisis.

"Hydrotherapy and Mineral Springs," by Dr. Simon Baruch, follows climate. The writer devotes a large share of his space to the technique of hydrotherapy. Under "Mineral Springs" analyses of many mineral waters are tabulated.

Every practitioner will find his views of disease and its prevention broadened, and he will be inspired with more pride in his profession after reading what Dr. H. B. Baker, Secretary of the Michigan State Board of Health, writes in regard to "General Sanitation." It shows a trained mind and large experience.

Following this are articles on "Disinfection," by George M. Sternberg, M.D.; and on "Antisepsis and Asepsis," by Prof. J. William White.

"Nutrition and Foods, including the Treatment of Obesity and Leanness," by I. Burney Yeo, M.D., deserves especial study. This article contains as much matter as is to be found in some works on dietetics.

The most voluminous article in the book is on

"Tuberculosis," by Dr. Solomon Solis-Cohen. It covers over 200 pages, and includes preventive treatment, superalimentation, a description of various forms of pneumatic apparatus and various medicines which have been or are used in this disease. He holds that tuberculosis is a curable disease, but this statement is afterwards qualified. He appreciates fully the importance of attention to details in the treatment of this disease, and furnishes the physician with an abundance of suggestions that will assist him in the thoughtful and persistent care of his patients.

The treatment of "Scrofulosis and Rachitis" is well outlined by Dr. Walter Chrystie.

The articles on "Acute and Chronic Articular Rheumatism, Rheumatoid Arthritis, and Gout," by Professor James Stewart, are excellent and very practical.

An article on "Scurvy," by Dr. John B. Hamilton, Supervising Surgeon-General, United States Marine-Hospital Service, is concise and interesting.

A very excellent article on "Diabetes Mellitus," by Dr. Frederick A. Packard, ends the volume.

Without going into too much detail it is impossible to give anything more than an outline of the contents of this book. It has been conceived and carried out on broad lines, and contains much that should be read by all medical men.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D. Vol. I, Part IV. Edinburgh: T. & A. Constable. 1892.

Part IV completes the first volume of this handsome work, which we noticed lately at some length. The text treats of small-pox, globulinuria, three new cases of Friedreich's ataxia, chronic insanity, hilarious mania. The plates depict small-pox, melancholia and mania. There is also an extended index. The second volume, to be issued from September, 1892, to May, 1893, will consist of three instead of four fasciculi, will contain at least 128 folio pages, and at least thirty plates. The subscription price for these volumes — $7.50 apiece — is very moderate.

Essentials of Anatomy and Manual of Practical Dissection, together with the Anatomy of the Viscera. Prepared especially for students of medicine. By Charles B. Nancrede, M.D. Fourth edition, revised and enlarged; with an appendix containing "Hints on Dissection," by J. Chalmers DaCosta, M.D. Philadelphia: W. B. Saunders. 1891.

This is a compendium, and as such to be condemned. A number of colored plates have been added, and some very poor representations of bones with the names on them according to Grey. The best part is that on dissection, which the compiler honestly states is not original. The whole is a poor affair. T. D.

Deafness and Discharge from the Ear: The modern treatment for the radical cure of deafness, otorrhœa, noises in the head, vertigo and distress in the ear. By Samuel Sexton, M.D., assisted by Alexander Duane, M.D. New York: J. H. Vail & Co. 1891.

This brochure of eighty-nine pages is, as its title would indicate, not a scientific work, but an exposition of the success of the author in the performance of the operation suggested by Kessel for the removal of the ossicula auditus; there is no precise description of the operation given, and the perusal of the book as a whole suggests the impression that it was written rather for popular than for professional reading.

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TOO LONG VACATIONS.

Prof. Charles F. Thwing, in the *North American Review* for June, arraigns the present system of summer vacations as being too long. The college student suffers from so long a vacation through the loss of interest in his college work. His attention for a whole quarter of a year is directed to pursuits other than scholarly. His discipline is broken. He feels himself to be on a vacation, and vacation is usually intellectual vacuity. The vacation becomes dissipation, — moral, intellectual. Forces that are needed in college are not recruited. Hardihood, endurance, concentration, pluck, grit are not nursed through so long a period of inactivity. Laziness is the direct result of summer listlessness.

Recreation does not become re-creation. The daily newspaper is the strongest intellectual fare and the severest physical work he does is playing tennis. Professor Thwing thinks that if the student were to have only a month of such a kind of life, it would be well, but to stretch out these methods over three months is bad. Resting is one thing, and a very good thing, but resting prolonged becomes rusting. Rusting eats the tool not used. Students, like tools, lose as much by August rust as by February wear. Let every student have all the rest, recreation, diversion and amusement required for keeping his forces in the best condition, but he does not need one-fourth of the year. A healthy student can get as much vigor out of two months as out of three. Eight weeks in the woods will give all necessary power quite as well as thirteen. A short vacation is better for a tired and healthy man than more; than a long one spent in laborious diversions. By transferring five weeks from the vacation to the working period of the college, and by a little extra work, we might cut the college courses to three years without a serious shortening of the time spent in study, and also without any depreciation of the worthiness of the course itself.

The evils of the long vacation are more conspicuous in pupils of the common schools than in college students. These pupils are of the common people. More of them have parents whose purses are small than parents whose bank accounts are large. They spend their summers at home. They indulge in no outings more expensive or more prolonged than a visit to some relative for a fortnight, and their long vacation is no more recreative to jaded energy than a short vacation, and it is far more fraught with physical and ethical perils. Lawlessness is often characteristic of boys in vacation. They return to their books in the middle of September, not with an appetite whetted by proper abstinence, but with a distaste created by a barbarian life. Every teacher knows that at least a month is required to restore his classes to as good a working condition as was theirs at the close of school in June.

Professor Thwing regards the ordinary thirteen weeks as too long a vacation even for the teachers and professors, who would find nine weeks sufficient in which to recruit for their work. There will, however, be exceptions, for to many teachers in the colleges the vacation is the occasion for doing work other and harder than that of the college routine; and as a general thing it may be said that "no class of professional laborers are more laborious, none more deserving of long periods of rest than the teachers; and of all teachers, those in the public schools are most laborious and most deserving."

On one point there can be no disagreement; the relatively short vacation of the doctor is not half long enough to give him the rest and recreation which he needs. An absence from home and from work of three months *once in twenty years* would be a boon to many overworked members of the profession who hardly ever lay aside the harness even for a day. But vacations must be had — and if they are destined to be *short* they must be *frequent* — vacations which shall be characterized by absence of all fretting and worrying about loss of time and loss of income, or atheroma from cankering care and parenchymatous degenerations will come all too soon.

The evil with the medical profession then is *too short vacations and too few of them.*

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THE EXHIBIT AT THE ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

It must have occurred to many who witnessed the admirable exhibits of the State Board of Health, the Institute of Technology, the New England Kitchen, etc., at the Meeting of the Massachusetts Medical Society, that the substitution of the instruments, the methods, and the results of sanitary science, for the commercial preparations displayed in former years, had a more than obvious significance. To a thoughtful observer, it revealed in the most striking way the prevailing tendency not only to forestall as far as possible the need for remedies by preventive medicine, but also to enrich the art of medicine by the application of sanitary science.

It is most encouraging to observe as an offset to the disappointments which curative medicine sometimes entails, that we have before us the fresh triumphs of preventive medicine. Foremost among the boards of health of America stands the State Board of Health of Massachusetts. By the establishment and support of the Lawrence Experiment Station — the first of its kind in the United States — it has set an example which must soon be followed by the other States. By its scrupulous oversight of adulterations in foods and drugs; by its studies upon questions of water-supply and sewerage profoundly affecting the public health; by its prompt and thorough investigations of epidemics; by its intelligent co-operation in the collection and publication of vital statistics, and by its high function as chief sanitary referee for the cities and towns of the Commonwealth, it worthily represents the most enlightened sanitary science of the time. A fresh conviction of this truth must have come to all who studied the simple but original exhibition of its sanitary work to which we have referred.

The exhibit of the Institute of Technology was, in a measure, a surprise. Few, probably, of those who saw it, comprehended fully its scope. It dealt not merely with sanitary chemistry, and heating and ventilation — for these this great scientific school has long been famous — but especially with sanitary biology. A notable exhibit under this head was cryptogamic botany considered, not chiefly from the ancient point of view of materia medica, but in the modern aspects of etiology and parasitism. The parasites of certain plants were shown, as were also some of the low organisms that infest water-supplies, with scavengers, such as the "sewage fungus" and yeasts, monads and common bacteria. Next to cryptogamic botany was bacteriology, with cultures of milk, water and air, as well as some of the pathogenic bacteria. The apparatus in this department attracted much attention. It is evident that the biologist in modern sanitary science has his place, henceforward, with the chemist and the engineer, and that all of these are powerful coadjutors of the scientific physician.

The Massachusetts College of Pharmacy gave an instructive educational exhibit, which included an extensive series of crude drugs, microscopic preparations, diagrams, models, books, etc., illustrating the structure of drugs, together with chemical and pharmaceutical apparatus.

Space does not allow us to do more than mention the interesting exhibit of the New England Kitchen or the Walker-Gordon Laboratory, in which highly successful efforts to advance the science of nutrition were clearly illustrated. Taken all in all the exhibitions this year were a marked success, and furnished the abundant assurance that Massachusetts is keenly alive to the promise and the potency of hygiene and sanitary science, as well as to the conservation of the public health.

MEDICAL NOTES.

Society Meetings. — The following medical societies will hold their annual meetings during the last half of June: June 14th, Medical Society of Delaware, at Dover; June 15th, Minnesota State Medical Society, at St. Paul; June 20th, American Association of Andrology and Syphilology at Richfield Springs, N. Y.; American Laryngological Association, at Boston; New Hampshire Medical Society, at Concord; June 21, Colorado State Medical Society, at Denver; June 28, Medical Society of New Jersey, at Atlantic City.

Changes in Different Medical Faculties. — Prof. James Tyson has resigned as Dean of the Medical Faculty of the University of Pennsylvania but retains the professorship of clinical medicine. Dr. John Marshall has been appointed Dean. Dr. Charles McBurney has resigned the professorship of surgery in the College of Physicians and Surgeons, New York, and has been appointed professor of clinical surgery. Dr. Robert F. Weir has been appointed a professor of surgery to succeed Dr. McBurney.

The Chicago Water-Supply. — We have heard a good deal on both sides recently as to the purity of the water-supply of Chicago. The *Chicago Times* has lately printed a report of the state of the lake which is discouraging. The flow into the lake of the Chicago River is about 400,000 cubic feet a minute. The water from this river is black and bad smelling and contains much of the sewage of the city. The influence of this flow is seen in the lake almost as far down as the crib from which the water-supply is taken. If the river continues to flow into the lake, it will in time be dangerous to take water from the lake even at several miles distance. The one safety is in creating a constant flow from the lake through the river to the Mississippi basin. With the exception of a ridge of land eight miles west of the city, there is a gradual drop down to the tributaries of the Mississippi River.

New Appliances of the Medical Department of the Army. — The medical department of the army is soon to be equipped with one hundred new ambulances of a different pattern from the ones now in use. The vehicle will be about three hundred pounds lighter than the present one. New medical and surgical boxes have also been designed, and their contents will be condensed as much as possible. These will be placed under the seat of the driver of the ambulance. Two oblong boxes, one on each side of the wagon, will be used for carrying water. The floor of the wagon has grooves, into which the feet of the litters are placed for sliding them into position. Each wagon contains two litters. Leather-covered seats, capable of being folded out of the way, extend along each side of the ambulance. The litters can be folded into a compact bundle when not in use and slung on the outside of the wagon. As far as possible the contents of the medical chest consist of compressed tablets. The weight of the chest is one hundred pounds. The lower half is fitted with small drawers containing bandages, dressings and the like. The surgical chest weighs ninety-six pounds and contains tablets of antiseptic preparations, ether, chloroform and adhesive plaster. The drawers contain instruments and different surgical material. A folding packet, containing the necessary instruments for an ordinary emergency case, may be taken out by the surgeon in case of necessity. One hundred of these cases have already been distributed. The medical and surgical cases are so arranged that they may be slung, one on each side of an animal. Cots, chairs and tables, which are capable of being condensed into a very small space, for use in the field, are also provided.

Vitaline. — A good deal has been heard of this quack preparation in Russia recently. It was concocted by one Gatchkowsky, and was advertised as a miraculous panacea and rejuvenator. In spite of its exaggerated claims, the tide of fashion turned towards it, and it became a popular fad. It was given both by subcutaneous injection and internally. Finally General Gresser, the Prefect of St. Petersburg and a very important personage, was given an injection of it, from the effects of which he died. The inventor was immeiately seized, and finding himself in danger, confessed that his specific was only a mixture of borax and glycerine, and that the death must have been the result of a dirty syringe.

Whipping and Hysteria. — A trial which has excited much notice in Germany has resulted in the conviction of Dr. Wiederholt, the head of an establishment for the treatment of nervous diseases. A lady of fifty-one years, a patient in the hospital, was subject to acute hysteria. After trying to control her by other methods, the defendant had whipped her, on three different occasions. The action was brought by the patient's husband, and the question was argued whether whipping an hysterical patient was justifiable treatment. Professor Tuszck, who was called as an expert, said that it was scientifically inadmissible to use corporal chastisement in the medical treatment of nervous patients. Professor Pellmann said that he was personally opposed to the therapeutic use of whipping, that in State Hospitals it was absolutely forbidden. The defendant was condemned to three months imprisonment.

NEW ENGLAND.

A Social Reunion. — Dr. B. E. Cotting, of Roxbury, entertained the board of managers, the editorial staff, past and present, and the collaborators of this Journal, together with some specially invited guests, at his house Wednesday evening, June 8th. The occasion was the twentieth anniversary of the reorganization of the Journal. About fifty members of the profession participated in Dr. Cotting's hospitality.

The Boston City Hospital Club held its annual meeting and partook of its annual dinner at the Copley Square Hotel, Tuesday evening, June 7. After-dinner speaking was dispensed with, and the company adjourned at eight o'clock to listen to the

Shattuck Lecture, which was delivered by the Vice-President, Dr. J. F. A. Adams, of Pittsfield. The Club voted in favor of having a supper next year instead of a dinner, to avoid a conflict between the reunion and the lecture. The following officers were elected: President, Dr. R. H. Fitz, of Boston; Vice-President, Dr. J. A. Gordon, of Quincy; Treasurer, Dr. S. H. Ayer, of Boston; Secretary, Dr. R. A. Kingman, of Boston. Member of executive committee for five years, Dr. Chas. D. Sawin, Charlestown.

Cholera Infantum and Diarrhœa. — The Boston Board of Health has issued a circular, printed in English, Italian, Hebrew and Russian, to be distributed in different parts of the city where cholera-infantum is most found, giving simple directions for the care of milk, as follows: The milk must be kept fresh. As soon as the milk comes, put it in a glass bottle; put the bottle in a kettle with a block of wood under it to prevent the bottom coming in contact with the kettle; put water enough in the kettle to come half-way up the side of the bottle; heat the water as hot as possible without boiling; then take the kettle from the fire and cork the bottle; let the bottle remain in the kettle for half an hour: then put the bottle in a cold place. This makes the milk safe without boiling. If possible, use a rubber stopple instead of a cork. The bottle and the stopple must be cleansed every day with boiling water.

Officers of the Massachusetts Medical Society. — Dr. J. C. White, of Boston has been elected President, and Dr. Francis A. Howe, Vice-President of the Massachusetts Medical Society.

Small-Pox in New Bedford. — It is reported that two cases of small-pox have recently been found in New Bedford.

NEW YORK.

The New York Post-Graduate Medical School and Hospital has purchased a site for its new buildings at the corner of Second Avenue and 20th Street. They will have a front of 98 feet on the Avenue and 110 feet on 20th Street and will be six stories in height. The architecture will be of the Italian school, and the first story is to be constructed of Indiana buff limestone. The upper portions will be of pale brown brick and terra-cotta.

Another Death from Chloroform has been reported. The patient was a lad nine years of age, and the anæsthetic was given at a physician's office for the performance of a minor operation.

Recovery from Morphine Poisoning. — A remarkable case of recovery from morphia poisoning has occurred at the Gouverneur Hospital. The patient, a young Spaniard, took no less than eighteen grains at a single dose, for the purpose of committing suicide. When he was taken to the hospital the respirations had become reduced to one a minute. Atropia and the cold douche were used with good effect in the treatment, which had to be kept up unremittingly for three days.

Miscellany.

THE SUCCESSFUL TREATMENT OF CHLOROFORM SYNCOPE BY MASSAGE OVER THE HEART.

Maas[1] reports two cases in which patients, apparently dead from chloroform syncope, were resuscitated by simple compression in the region of the heart. In both cases respiration and radial pulse had entirely stopped and the pupils had dilated. The manipulation of the heart was in both cases carried out for over an hour. As a result, both patients suffered from mental derangement, difficulty in swallowing and in speech, all of which passed off very slowly. The manipulation was conducted as follows:

The operator, standing upon the left side of the patient, pressed with quick, strong movements deep down in the region of the heart with the fingers of the right hand, while the ball of the thumb was placed above the left clavicle. The number of compressions was 120 or more a minute. The left hand should seize the patient upon the right side of the thorax. Soon after beginning these compressions the pupils became smaller and the paleness of the face disappeared.

THE NEW RIFLE PROJECTILES.

Professor Bardeleben has recently delivered an address in Berlin on this subject.[2] The modern rifle sends a bullet with a narrow cylindrical form and pointed apex which at a distance of 1,000 metres has the power to pass through several human bodies or to disable two horses. Its line of flight differs but slightly from the line of sight. It has an inner core of lead enclosed in a casing of steel which prevents the lead from becoming deformed and spreading at the point of contact. This change is of much interest for military surgery. The bullet is lighter than any of the lead bullets, but is sent with a greater velocity. On account of its velocity and its small surface of contact, it merely punches out a hole causing very little commotion of the neighboring parts. It is more likely to cause fatal hæmorrhage than the old bullet. If the new bullet wounds at all it will have sufficient power to pass through any part of the body. Colonel Boonen-Rivera, in his report on the civil war in Chili, the only war in which Mannlicher rifles have been used, says that the number of dead on the battlefield was four times larger than that of the wounded. The effect of these bullets on bone has been made the subject of a series of experiments. Up to a distance of 400 metres the bone is invariably shattered, and at greater distances either clean perforations or oblique fractures result. In the next war the ratio of recoveries of those who can be removed still living from the field will be larger than formerly.

The new projectile is by no means so humane as it is sometimes called, since within similar periods of time and under equal conditions it kills and wounds more men than the old bullet. But the wounds which it causes, if they are not of a directly fatal nature, open to the surgeon, as a general rule, a far more promising field for exercising his skill and activity than those which were caused by the old bullet.

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[1] Berlin Klin. Woch., No. 12, 1892.
[2] British Medical Journal, May 21st.

ETIOLOGY OF ACUTE CIRCUMSCRIBED ŒDEMA.

Bauke[1] in an article on this condition comes to the following conclusions: Circumscribed œdema of the skin, in the majority of cases, is found in patients suffering from some disturbance of the nerves. In some cases a hereditary influence can be traced. These swellings of the skin may follow certain psychical disturbances such as alcoholism but they may appear at the same time as neuralgias, Graves' disease or nervous digestive disturbance. The author believes that this condition should be considered as purely neurotic or functional, caused by the disturbance of the vasomotor centres. Treatment should be directed to the general condition, the many digestive troubles or nervous symptoms.

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MR. JOSEPH A. TUCKER.
RESOLUTIONS OF THE VISITING STAFF OF THE BOSTON CITY HOSPITAL.

In the decease of the late Mr. Joseph A. Tucker, President of the Board of Trustees of the Boston City Hospital, the institution has lost a valuable friend and a wise counsellor.

The physicians and surgeons desire to express their high appreciation of his interest in everything relating to the welfare of the patients and the comfort and convenience of the Medical and Surgical Staff.

A man of sound judgment, of strict integrity, and kind feelings, ready at all times to entertain plans for the benefit of the hospital, ever loyal to its high reputation, and anxious to maintain the same, watching alike the interests of the city, of the inmates, and of the profession, he not only earned universal respect and esteem, but endeared himself to every one connected with the institution.

The Staff, recognizing their own loss, hereby tender their warmest sympathy to the family and friends of the deceased.

George W. Gay,
J. Orne Green, } *Committee.*
M. F. Gavin,

The above was presented at a meeting of the Visiting Staff, held May 31, 1892, adopted, and it was voted that a copy be sent to the family of Mr. Tucker, to the Trustees of the Hospital and to the *Boston Medical and Surgical Journal.*

Edward J. Forster, M.D.,
Secretary of the Visiting Staff.

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THERAPEUTIC NOTES.

Cholera Infantum. — Meinert[2] considers it essential in the treatment of gastro-intestinal catarrh of infants to prevent the increase of bodily temperature, and to replace, as quickly as possible, the loss of water in the body. He recommends cold baths, compresses and fresh air; every five minutes warm water, or sugar and water, or some herb tea. Milk should be diluted at first ten times, later up, to three times. In cholera nostras, also, he has obtained good results by large quantities of water.

Test-tubes for Exploring Wound Cavities. — Fulton[3] advises the use of test-tubes for exploring different wound cavities. The closed end is pushed into the wound and a beam of light directed into it from a head mirror. It can easily be made aseptic and is easily directed. It may be used in the brain, provided the external wound is large enough, and a bullet found and withdrawn with very little injury to the brain.

Niehaus Method of Treating Erysipelas. — This author recommends painting the healthy skin about two hands breadths away from the disease with contractile collodion. This should be applied several times until the skin becomes markedly contracted. In several cases he has seen the inflammation stop as soon as it has reached this wall.

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Correspondence.

A PROPOSAL OF THE "BOSTON DIRECTORY."

Boston, June 4, 1892.

Mr Editor: — The publishers of the "Boston Directory' have issued a circular for physicians, offering to insert in connection with the names in the classified list of physicians, the office hours and telephone numbers for one dollar each in addition to the price of the Directory. To those who do not order the Directory the price is three dollars.

The proposal made in this circular does not seem to me one which the thoughtful members of our profession will care to embrace. My criticism of the plan is briefly this: So far as it is an advertisement physicians have no right to it, and so far as it is demanded for the convenience of the public the publishers of the Directory should be ready to make the innovation at their own expense.

Respectfully yours, V.

RECORD OF MORTALITY
For the Week ending Saturday, May 28, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Diarrhœal diseases.	Diphtheria and croup.
New York . .	1,610,813	845	362	28.62	30.42	5.94	3.06	9.00
Chicago . . .	1,250,000	439	190	12.88	14.95	1.15	.23	4.83
Philadelphia .	1,064,277	404	163	19.26	10.80	4.44	4.44	7.00
Brooklyn . .	880,780	340	111	11.02	19.14	1.45	.58	5.22
St. Louis . . .	460,000	146	41	10.35	5.52	1.38	6.90	1.38
Boston . . .	448,477	195	53	13.77	16.32	4.59	—	6.12
Baltimore . .	455,427	—	—	—	—	—	—	—
Cincinnati . .	300,060	89	27	6.72	11.20	1.12	2.24	—
Cleveland . .	209,000	102	46	12.74	23.52	—	—	5.88
Pittsburg . .	240,000	81	36	18.45	11.07	2 46	3.69	7.38
Milwaukee . .	232,220	70	33	17.04	15.62	—	2.84	12.78
Washington .	250,000	83	33	13.20	10.80	1.20	—	4.80
Nashville . .	76,168	16	3	—	12.50	—	—	—
Charleston . .	65,165	51	22	13.72	—	—	7.84	—
Portland . . .	40,000	20	1	—	15.00	—	—	—
Worcester . .	84,655	31	6	12.92	19 38	3.23	—	3.23
Lowell . . .	77,696	35	11	17.16	5.72	—	8.58	—
Cambridge . .	70,028	27	7	29.60	18.50	11.11	3.70	11.11
Lynn	55,727	23	5	—	12.05	—	—	—
Lawrence . .	44,654	24	0	20.80	20.80	—	4.16	16.64
Springfield . .	44,179	15	2	13.33	6.66	—	—	6.66
New Bedford .	40,733	15	4	—	6.66	—	—	—
Holyoke . . .	35,637	28	14	25.00	25.00	—	11.11	7.14
Salem	30,801	17	7	—	5.88	—	—	—
Haverhill . .	27,412	6	2	16.66	16.66	—	—	—
Brockton . .	27,294	5	1	—	20.00	—	—	—
Taunton . . .	25,445	9	2	—	11.11	—	—	—
Newton . . .	24,379	5	1	—	20.00	—	—	—
Malden . . .	23,031	13	4	30.76	7.69	—	7.69	23.07
Fitchburg . .	22,037	8	1	—	—	—	—	—
Waltham . .	18,707	4	1	—	25.00	—	—	—
Pittsfield . .	17,281	7	2	—	14.28	—	—	—
Quincy . . .	16,723	7	0	—	—	—	—	—
Northampton .	14,990	5	3	20.00	—	20.00	—	—
Newburyport .	13,947	8	3	12.50	—	—	—	—
Brookline . .	12,103	4	2	—	50.00	—	—	—
Medford . . .	11,079	1	0	—	—	—	—	—
Everett . . .	11,068	3	0	—	—	—	—	—
Hyde Park . .	10,193	1	0	—	—	—	—	—
Peabody . . .	10,158	5	1	—	20.00	—	—	—

Deaths reported 3,187: under five years of age 1,200; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 476, acute lung diseases 489, consumption 398, diphtheria and croup 171, scarlet fever 81, diarrhœal diseases 69, measles 52, typhoid fever 44, cerebro-spinal meningitis 24, erysipelas 16, whooping-cough 14, small-pox 3, malarial fever 2.

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[1] Berlin Klin. Woch., No. 6.
[2] Wiener med. Woch.
[3] Univ. med. Woch., June.

From measles New York 36, Philadelphia 5, Brooklyn 4, Chicago 3, Cleveland and Pittsburgh 2 each. From typhoid fever Chicago 14, New York 8, Philadelphia 5, Cleveland 4, Washington 3, Brooklyn, Boston and Lowell 2 each, St. Louis, Cincinnati, Pittsburgh and Charleston 1 each. From cerebro-spinal meningitis Chicago 7, Brooklyn 5, New York 4, Worcester and Holyoke 2 each, Philadelphia, Cincinnati, Washington and Lowell 1 each. From erysipelas New York 6, Boston 3, Chicago and Brooklyn 2 each, Philadelphia, Cleveland and Pittsburgh 1 each. From whooping-cough Chicago 3, Charleston 2, New York, Philadelphia, Boston, Cincinnati, Milwaukee, Cambridge, Haverhill and Newburyport 1 each. From small-pox New York 3. From malarial fever New York and Springfield 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending May 21st, the death-rate was 19.3. Deaths reported 3,769: acute diseases of the respiratory organs (London) 292, measles 197, whooping-cough 119, diphtheria 57, diarrhœa 35, scarlet fever 33, fever 24, small-pox (London) 4.

The death-rates ranged from 10.8 in Croydon to 24.7 in Manchester; Birmingham 21.5, Bradford 15.2, Bristol 23.3, Halifax 16.1, Huddersfield 15 1, Leeds 19.4, Leicester 19.7, Liverpool 22.5, London 19.4, Nottingham 17.9, Portsmouth 16.2, Sheffield 19.5, Sunderland 21.2, West Ham 14.4, Wolverhampton 20.0.

METEOROLOGICAL RECORD,

For the week ending May 28, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: –

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...22	29.82	49	54	43	93	89	91	N.	E.	11	6	O.	R.	.45
M..23	29.54	50	57	43	100	59	80	N.	W.	18	8	R.	C.	.48
T..24	29.76	58	67	49	59	43	51	W.	S.W.	18	10	F.	C.	
W. 25	29.84	66	77	56	48	55	52	S.W.	S.W.	18	7	F.	O.	
T..26	29.76	67	78	56	94	74	84	S.	S.	12	12	O.	O.	.32
F..27	29.54	62	67	57	84	59	72	S.W.	W.	14	11	O.	C.	.11
S..28	29.84	62	70	54	61	46	54	W.	W.	18	9	F.	C.	
☞	29.72	59	67	51	74	70	69			16	9			.02

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 28, 1892, TO JUNE 3, 1892.

Leave of absence for fifteen days to take effect in the early part of next month is granted Major Robert M. O'Reilly, surgeon, U. S. A., Fort Logan, Colorado.

Major David L. Huntington, surgeon, U. S. A., having reported in accordance with Par. 9, S O. 107, c. s. Headquarters of the Army, is assigned to temporary duty in charge of the office of the medical director, Headquarters, Department of Arizona, pending the absence of the medical director, Colonel Jos. R. Smith, surgeon, U. S. A.

Upon the return of Captain Benjamin Munday, assistant surgeon to Fort Sully, S. D., First-Lieut. Allen M. Smith, assistant surgeon, will proceed without delay to Fort Yellowstone, Wyoming, and report to the commanding officer for temporary duty with troops in the National Park during the season. Par. 1, S. O. 80, Headquarters, Department of Dakato, St. Paul, Minn., May 24, 1892.

Captain C. N. B. Macauley, assistant surgeon, U. S. A. granted leave of absence for three months.

SOCIETY NOTICES.

American Neurological Association. — The eighteenth annual meeting will be held at the New York Academy of Medicine, June 22d, 23d and 24th.

New Hampshire Medical Society. — This Society will hold its one hundred and first anniversary meeting, Monday and Tuesday, June 20 and 21, 1892, at Concord, G. A. R. Hall, 15 Warren Street.

American Laryngological Association. — The fourteenth annual Congress will be held at Boston, Mass., June 20, 21 and 22, 1892. The sessions will be held at the rooms of the Medical Library Association, 19 Boylston Place. The profession is cordially invited to attend.

American Association of Andrology and Syphilology. — The sixth annual meeting will be held at the Spring House, Richfield Springs, N. Y., June 21 and 22, 1892.

The meetings of the Association will be held in one of the parlors of the Spring House.

Members desiring rooms may engage them in advance by writing to the proprietor of this hotel at Richfield Springs, N. Y.

RECENT DEATHS.

Ralph C. Huse, M.D., M.M.S.S., died in Georgetown, Mass., June 1st, aged forty-nine years. He graduated from the Harvard Medical School in 1866, having previously served in the army during the war. Since graduating he has practised in Georgetown. He was Vice-president of the Essex North District Medical Society.

Charles E. Delavergne, M.D., died in Brooklyn, June 4th, aged thirty-five years. He was lecturer in the practice of medicine in the Long Island College Hospital, and surgeon of the Thirteenth Regiment.

John E. Kimball, M.D., of Saco, Me., died June 2d, aged seventy-three years. During the war he was surgeon of the Twenty-seventh Maine Regiment.

BOOKS AND PAMPHLETS RECEIVED.

Medical Orthoepy. By J. F. Oaks, M.D., Columbia. Reprint. 1892.

Flint's Encyclopedia of Medicine and Surgery. Vol. i, A to I. New York: J. B. Flint & Co. 1892.

Intestinal Anastomosis and Suturing. Cases of Gall-Bladder Surgery. By Robert Abbe, M.D. Reprints. 1892.

The Removal of Adenoid Growths from the Vault of the Pharynx. By H. Hoyle Butts, M.D. Reprint. 1892.

The Nervous and Mental Phenomena and Sequelæ of Influenza. By Charles K. Mills, M.D., Philadelphia. Reprint. 1892.

Proceedings of the Association of Medical Officers of American Institutions for Idiotic and Feeble-minded Persons. Sessions 1889, 1890, 1891.

The Cure of Stricture Simplified. A Neglected Case of Chronic Pleurisy. By Wm. H. Dukeman, M.D., Los Angeles, Cal. Reprints. 1892.

Influenza and the Laws of England concerning Infectious Diseases. By Richard Sisley, M.D., M.R.C.P. London: Longmans, Green & Co. 1892.

Higher Medical Culture, Medical Science, based on the Four Vital Properties and Laws of Organic Force. By W. R. Dunham, M.D. Cambridge. 1892.

Outlines of Zoölogy. By J. Arthur Thompson, M.A., F.R.S.E. Lecturer on Zoölogy in the School of Medicine, Edinburg. New York: D. Appleton & Co. 1892.

Psycho-Therapeutics; or Treatment by Hypnotism and Suggestion. By C. Lloyd Tuckey. M D. Third edition. London: Baillière, Tindall & Cox. 1891.

The Successful Treatment of Chronic Diseases; A Plea for their more Methodical Management. By Simon Baruch, M.D., New York. Reprint. 1892.

Some Differential Points in the Diagnosis of Syphilis and Tuberculosis with Illustrative Cases. By Prince A. Morrow, M.D., New York. Reprint. 1892.

Diseases of the Urinary Apparatus; Phlegmasic Affections. By John W. S. Gouley, M.D , Surgeon to Bellevue Hospital. New York: D. Appleton & Co. 1892.

A System of Gynecology, based upon a translation from the French of Samuel Pozzi. Revised by Curtis M. Beebe, M.D., Chicago. New York: J. B. Flint & Co. 1892.

The Fourth International Prison Congress, St. Petersburg, Russia. By C. D. Randall, official delegate from the United States. Washington: Bureau of Education. 1891.

Diseases of the Eye; A Hand-book of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, M.D. With two hundred and sixteen illustrations and two plates. Philadelphia: W. B. Saunders. 1892.

Les Tumeurs de la Vessie. Par J. Albarran, Chef de Clinique des Maladies des Voies Urinaires a la Faculté de Médecine de Paris (Hôpital Necker). Preface par le Professeur Guyon, 75 figures et 9 planches. Paris: G. Steinheil. 1892.

Address.

THE MEDICAL PROFESSION AND THE COMMONWEALTH.[1]

BY FRANK WINTHROP DRAPER, M.D.

(Concluded from No. 23, page 568.)

II. But the true test of the value of laws lies in their faithful execution and judicious application. Let us inquire, now, concerning the relationship of our profession to the Commonwealth's executive department.

In two instances, Massachusetts has selected its supreme executive magistrate, the governor, from the medical profession and from the fellowship of this Society. Dr. John Brooks was elected governor in 1816, and continued in office, by annual re-election, until 1823. He was succeeded by Dr. William Eustis, who died in office in 1825.

The second office in the gift of the people, that of lieutenant-governor, has been held by three members of this Society, David Cobb, Henry Halsey Childs and Elisha Huntington.

The executive council of the Commonwealth has had many medical representatives in its membership in the course of its history. They have done excellent service in advancing the interests of our profession whenever occasion offered. This was especially the case in 1877, when the assistance of the late Dr. William Cogswell was of great value in the reform of the methods for conducting investigations of deaths by violence.

In municipal administration, our profession has shown its adaptability for public affairs in numerous instances. Repeatedly, medical men have demonstrated their acceptability in the office of mayor and in various subordinate positions in city and town government.

So, too, we may recall the admirable services of our brethren in the conduct of school-administration and in the interests of free education under the fostering care of the Commonwealth.

Again, in the management of the public institutions belonging to the State, medical men have found a congenial field for the exercise of their wise judgment and executive ability. Ever since the establishment of the first lunatic hospital by the State in 1832, at Worcester, the boards of trustees of these and similar foundations have welcomed the acquisition and assistance of physicians as an essential element of their success. If one desires a demonstration, let him compare the State Almshouse at Tewksbury, as it is to-day, with its scandalous condition before 1876; its discipline, its fine hospital service, its freedom from abuses, are in marked contrast with the methods and results which characterized its management before a physician took charge of it under the authority of the legislature.

Why should not the executive efficiency of men trained as physicians be utilized still further in our public institutions? Doctors of medicine who can manage great hospitals, can govern penal reformatories; and convicts, as well as lunatics, would be none the worse if their full sanitary supervision were in the hands of specially-trained officials. Who can doubt that the discipline of a convict prison would be improved if it were manifest that judicious care were taken to maintain the health of the inmates by the humane and practical methods of medical resident officers?

There is one chapter of the Massachusetts laws whose administration has always been an agreeable duty for the members of our profession. The statutes relating to the public health have been especially interesting to medical men, and the intelligent practical application of them has always had its best agents among physicians. Ever since the Board of Health of Boston, ninety years ago this summer, fitted up an observation hospital on Noddle's Island and invited Dr. Benjamin Waterhouse and other physicians to demonstrate upon the patients therein the immunity from small-pox infection which Jenner's recently discovered operation of vaccination bestowed, Massachusetts has found among her physicians the most zealous advocates of sanitary legislation, and the most faithful servants in executing her enactments. To the public, this paradox has always been a mystery. Why medical practitioners should desire earnestly to hinder or control the spread of disease, when their livelihood and material prosperity depend on its presence and their reputation for skill and success is directly related to its prevalence, is a problem which the ordinary intellect is unable to solve. The reason is that the vulgar apprehension has not grasped the difference between a vocation and a trade. The enterprising tradesman is not accustomed to place obstacles in the way of the successful development of his business, and he cannot understand why physicians do not follow his example. But we are not engaged in the pursuit of a trade, and our methods are on a higher plane than those of mercantile or of mechanic industries. We look to the welfare of humanity as our first and fundamental object and the practitioner who forgets this and seeks primarily the gains which are the objective reward of business methods is not true to the high purposes of his profession. The majority of physicians follow the more unselfish course and are therefore ready always to aid and to adopt measures which will protect the people from preventable suffering. It is, therefore, not surprising that they are earnest allies of the State in the administration of sanitary laws.

And what a comprehensive array of enactments affecting the public health, the statute-books of Massachusetts present! The silence and indifference of the State with regard to curative medicine is in the sharpest possible contrast with the number and variety of laws relating to preventive medicine. Recall the almost bewildering array of laws which are at this moment in force, designed to promote health and resist the encroachments of disease. The board of health of your city or your town has the power, under the statutes, reinforced by decisions of the Supreme Court, to interfere with personal and property rights in the most arbitrary fashion, if only the interference is in the name of the public health.

But the cynic will ask, of what use is all this cumbrous, and complicated sanitary machinery? Of what value has it been to the State? Do not epidemic diseases prevail just as they did before all this legislation was piled up for our admiration? Has not pandemic influenza stalked defiantly around the world again and again in the last three years, without the least hindrance from any source? Do not scarlatina and diphtheria enter our households and take possession in spite of all precautions, official and personal, devised to bar them out? Do not the children die by hundreds in August, and the grand-parents perish by the score in March, just as they did a century ago? Has tuberculosis been controlled?

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[1] The Annual Discourse delivered before the Massachusetts Medical Society, June 8, 1892.

To all such pessimistic questioning, ample answer has been made in the impressive address to which you listened three years ago,[2] and in the thoughtful essay[3] of last evening. It is unnecessary for me to add to their authoritative statements. But it is not improper to remind the sceptic that the general mortality-rate has been made to diminish; that the average duration of life has been appreciably increased; that in communities which use vaccination with reasonable fidelity, small-pox is rare enough to be a luxury. Is it of no consequence, moreover, that dwelling-house architecture has followed the admonitions of physicians and sanitarians and that ventilation and drainage are no longer left to chance? Is it of no importance that the water-supplies of the State are more carefully protected from pollution than ever before, and that every new supply is critically tested in all its relations, physical, chemical and biological, before it is accepted? These are some of the queries that are suggested by doubts of the unbeliever in sanitary teachings and practice. To you, who have always been in harmony with the progressive spirit in Massachusetts which is embodied in her health laws, obstructive criticism will appear unworthy of serious reply. Preventive medicine looks to the future hopefully. Many of its problems will be solved by the trained bacteriologist whose greatest achievements are still before him. And in all measures — scientific, practical, administrative — the Commonwealth, in the future as in the past, will look to us and our successors as its best allies and most efficient agents for the protection of the people from harmful influences affecting life and health.

There is one other department of the State's affairs to which I wish to refer briefly, because in its administration our profession has been conspicuous. I allude to that chapter of the Public Statutes entitled "Of Medical Examiners." The Massachusetts law relating to inquests is no longer on trial as a questionable innovation; it has passed the experimental stage and is now as permanent as any part of the judicial system of the Commonwealth. The practical experience of fifteen years has demonstrated that the legislature of 1877 enacted a law of exceptional value, thoroughly adapted to fulfil the purposes for which it was designed. And the reason for this is easy to comprehend. When the general court determined that the venerable but discredited and abused system of investigating violent deaths by means of coroners and their juries had outlived its usefulness in Massachusetts, it was under obligation to substitute a legal mechanism that should be simple, practicable, economical and trustworthy. And this it did with such consummate success as to challenge admiration. It provided a procedure that accomplished the desired end promptly and without friction. It differentiated the purely medical elements of the inquiry from those which were essentially judicial. It created a medical officer whose sole function should be to determine, in any case of mysterious or violent death, the anatomical proofs of unlawful acts entering into the cause of death; and it made his conclusions upon this purely medical question the basis for further inquest-proceedings by judges trained in the methods of taking and sifting evidence and required to solve the problem of accountability in the case. The initial stage, then, of the inquest is always the medical determination of the cause and manner of the death, and for this determination the law provides ample resources.

That the Massachusetts method of conducting these inquiries is acceptable is shown by the entire absence of real criticism, as well as by the cordial approval of jurists who have studied its details. It has commended itself to the authorities of other States, who find in it the indications of a great advance in comparison with the clumsy and inverted coroner system. It is quiet in its operation. It does not, by the exercise of noisy authority, upset and demoralize households overshadowed by recent grief. Its results are certain and tangible. It secures for use at trials for homicide the testimony of trained men well fitted by experience to be witnesses. It has absolutely eliminated all scandal and sensationalism from inquest proceedings. It has saved money to the county treasuries, at the same time affording better service to the people.

From this allusion to a special medico-legal function of great responsibility which our Fellows are discharging acceptably, the transition is easy to a consideration of the relationship which our profession, in general, bears to the third great department of the Commonwealth's government, the judicial department.

III. To state the proposition broadly, the medical man finds himself in a court of justice under the same exigencies which occur to the ordinary citizen, service on the jury alone excepted. He is either a plantiff seeking reparation for alleged wrong, or a defendant meeting a charge of wrong doing, or a witness summoned to testify in an issue to which others are the parties. Although these are the three varieties of necessity which take him, as they take others, out of the routine of daily life, and subject him to novel experiences more or less unpleasant, he is conscious that his vocation as a physician places him in a peculiar attitude unlike that of the layman. And it is these peculiarities characterizing our position in court that I now ask you to consider with me.

As a plaintiff, the physician is a spectacle of extreme rarity. I think it can be claimed with confidence that medical men, whatever their other characteristics may be, are not noted for litigiousness. They are generally too busy to find in the behavior of their fellow-men the occasion for law-suits. Although there is a certain hyperæsthesia which is said to apply to the profession in connection with the subject of medical etiquette, this never finds its way to the gates of the temple of justice; and in the ordinary affairs of life the doctor of medicine is seldom found on the hither side of the abbreviated Latinism which in the court docket stands as a low barrier over which the parties to a suit defy each other. The doctor in court as a plaintiff, then, need not detain us longer.

But with the doctor in court as a defendant, strenuously bending his energies and using his resources to resent an imputation upon his skill and care, the case presents a theme of serious interest, for it concerns the whole domain of our legal rights as medical practitioners. Most of the suits in which physicians are the defendants are actions instituted by former patients to recover damages for alleged malpractice. This fact suggests, at the very outset, some consideration of the obligations which the law imposes on physicians and surgeons in their treatment of the sick and injured persons who employ them.

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[2] The Annual Address for 1889, by Dr. H. P. Walcott.

[3] The Shattuck Lecture for 1892, by Dr. J. F. A. Adams.

To the medical man as he stands in the presence of a person who has summoned him for professional aid and counsel in time of suffering, the law says: "You were under no legal obligation to respond to the summons which called you to this bedside. But having responded, and having undertaken the care of this case, you have assumed certain obligations which the law fully recognizes, and which you cannot avoid, except at the risk of losing both money and reputation.

"Your obligation is that of an implied contract which, though less formal and specific than an express contract executed in writing, is not less binding in its nature.

"Under the obligations of this contract, you do not warrant or insure that all the results of your attendance shall be satisfactory, that there shall be a perfect recovery, or that your treatment shall effectually stand in the way of unexpected complications.

"But you engage, under the law, to treat this case in such a way that any injury which the patient suffers, in its course or subsequently, cannot reasonably be traced to a neglect of competent and ordinary care and skill on your part as its proximate cause."

Such are the principles established by the common law as the intangible environment of the medical or surgical attendant for his guide and control under the usual circumstances of his employment. They are the rules which underlie and govern those actions of tort, wherein the claim is set up that negligence and unskilfulness on the part of the medical attendant have caused injury and distress to his patient, and that money will be the proper remedy to heal the wrong imputed to him. And it is reassuring to record the fact that these rules and principles, however difficult they may seem to be as practical guides, have been in effect a shield rather than a menace to the interests of defendant physicians, and that the cases are few in number in which it can be said that unjust and unfounded verdicts have been returned by juries upon the issue of imputed negligence and unskilfulness.

But while this is true concerning the issue of suits for damages, it is also true that the law interposes no obstacle in the way of initiating such suits. Let us suppose that the medical attendant has done all that the law requires in the care of his case, that he has to the best of his ability used ordinary and reasonable skill and diligence and has avoided all measures that could be criticised as experimental, he may, nevertheless, through circumstances and conditions over which he has little control, find himself a defendant in an action of tort brought by his patient. Perhaps the dislocated shoulder which he reduced months ago, with proper attention to all surgical details, persists in giving pain and in refusing to resume its mobility. Perhaps the fractured femur is restored to duty with a permanent and irremediable though unavoidable shortening. Perhaps the broken forearm, when taken out of the splints, has an uncomely deformity in spite of the most assiduous care. In any of these events, whatever has happened out of the ordinary course, it is easiest to blame the attending physician for it; and the next step is equally easy, the initial step in the proceedings for what is called "getting satisfaction." The story is an old and familiar one. Too often the motive that initiates the suit and urges it forward is a most unworthy one, and is scarcely to be distinguished from the wickedness of blackmail. Too often it is nurtured and stimulated by lawyers more hungry for plunder than ambitious for a good name. Too often it is encouraged by the unfriendly words and actions of professional rivals. Over these prosecutions, the physician is powerless to bring any control; however strong his defence may be, he cannot prevent a trial, with all its annoyances, risks and costs, except by adopting the course of paying money to settle the claim out of court, — a course which any self-respecting medical man will not adopt, though sorely tempted to escape thereby all the wretched miseries of a jury trial.

It has often been suggested that, in view of their liability to unwarranted claims for malpractice, medical men would do well to organize co-operative defence unions for their own protection. Such a suggestion has much to make it attractive, and it has actually borne fruit in England in a flourishing and fully equipped association prepared to assist its members when they are brought to bar as the victims of irritable, or avaricious, or depraved human nature. But while such a fellowship might serve to deter the unscrupulous from bringing suits against physicians, in such suits as are pressed to trial, the appearance of a medical defendant backed by the money and the sympathy of a numerous company of his professional brethren might have a reactionary effect upon jurymen, who are notoriously ready to render verdicts against corporations and corporate interests.

Let us turn, now, to a far more familiar relationship between medical men and the courts of law — that sustained by physicians as witnesses. Rightly considered, the function of a medical witness establishes one of the most honorable positions in the service of the Commonwealth which a member of the medical profession can discharge. That the function has been abused and has experienced a measure of disrepute, is quite true. That there are certain features of it which are deplorable and most unsatisfactory is also true. But it is likewise true that, with all the criticism and disparagement of which it has been made the subject, medical evidence will continue to be an indispensable element in judicial proceedings, and the medical witness, if he be properly equipped for his service, has it in his power on every occasion to command the respect of all who observe him, and to be, in the court of justice as in the sick-room, the representative of sound learning and of manly deportment.

It has been customary to classify medical witnesses as of two distinct varieties, according to the character of their testimony; they are regarded as ordinary witnesses if they testify to facts, and as expert witnesses if they express opinions or undertake to interpret facts. But if we recall the usual methods under which medical witnesses are employed, we shall see how artificial is such an attempt at classification. The truth is that nearly every piece of medical testimony is a composite of facts and opinions in which the facts largely predominate. But they are medical facts, the correct determination and statement of which require medical knowledge, skilled training, and a special aptitude. When the chemist exhibits to the jury the arsenical mirror which is the result of his analysis of suspected organs or remnants of food, he is submitting, not opinions, but incontrovertible facts. When Prof. Austin Flint testified that in his microscopic and chemical examination of the material found under the fingernails and on the clothing of a degraded criminal accused of the murder of a woman and the mutilation of her body, he detected crystals of tyrosine and other substances which must have come from no other part of the intestinal tract than that found cut open in the victim's abdomen, he was giving an indisputable physiological demonstration of objective facts, which fastened the guilt of the homicide upon the prisoner. When Prof. Jeffries Wyman, in the memorable case which so engrossed public interest in this community in 1850, established by his evidence the identification of a mutilated human body, the work that he did was again a demonstration based upon accurately observed anatomical material.

The same principle is seen in the numerous civil suits growing out of imputed negligence, whereby accidental injuries result. The testimony of medical men connected with these cases is largely directed to the description of symptoms and conditions of a purely physical and objective character. Even in the comparatively rare cases in which a medical man is engaged to answer purely hypothetical questions, and to give his opinion upon assumed facts, of which he has no personal proof, the examination does not end with this exhibition of the expert's technical office, but wanders away into the various regions of medical knowledge pertinent to the questions at issue.

The conclusion, then, which I wish to draw from these considerations is that all medical testimony is of the nature of skilled service, and deserves appreciation as such. It has been held repeatedly that knowledge, in science or art, is its possessor's capital, accumulated through years of study and application; and that neither the Commonwealth nor any individual can make any lawful requisition upon that capital without substantial reimbursement. This is the well-recognized and universally applied rule governing the employment of medical experts, who go to court to state opinions with facts. Why should not the same rule attach to the service of surgeons and physicians who, heeding the peremptory summons, respond as witnesses to give evidence of clinical facts, of physical appearances, and all those other matters the correct observation and description of which require a definite amount of knowledge, the fruit of much patient study or long experience? The demand which in the name of the Commonwealth is made upon medical men, wasting their time in tiresome delay, interrupting their professional routine of duty, subjecting them to disagreeable and irritating experiences, extorting from them facts acquired under the confidential relations of the sick-room, is not one which, under prevailing conditions, is answered with cordiality. It is among the unpleasant incidents of professional life. It reminds us that of all departments of our practical work, the medico-legal service is the only one which we cannot evade, or transfer to others. The call of a judicial summons is imperative, and physical disability will alone excuse its neglect. When, therefore, we consider the nature of medical testimony, and the degree of technical knowledge required for its correct presentation, we do not exceed propriety if we ask that the State shall in some way provide fit methods for the adequate reward of such skilled service, rendered under compulsion.

One other feature of medical testimony solicits attention; it relates to the deportment of the witness in court. The ideal medical witness possesses these qualities: his demeanor is dignified and unconstrained; he has large stores of well-seasoned knowledge; he is quick in apprehension, firm and immovable in his convictions, but conservative and judicial in reaching them; he has a retentive memory, a reserved courage and an imperturbable temper; he is terse, direct, clear and concise in statement, and especially is an adept at translating every technical term into words and phrases clearly intelligible to every juryman; he abhors garrulity, flippancy and trickery; he aims to be candid, impartial, disinterested.

Sometimes, though very rarely, one sees a physician on the witness-stand who represents faithfully all these requirements; he is the object of our emulation and envy. Much more commonly, however, medical testimony illustrates characteristics quite in contrast with the ideal. The physician whose methods on the witness-stand we do not desire to copy, is garrulous, affected, pedantic, flippant, ready to engage in controversy, dogmatic, and above all saturated with partisanship. Of all these faults, the last is the most common and conspicuous and the one which has brought the greatest reproach on medical men as witnesses; it is this which has led judges on the bench to disparage and belittle medical experts; which has caused writers on jurisprudence to discredit their value; and which, in practice, has induced juries to ignore their testimony altogether in trying to reach a verdict. But while admitting that partisanship is a too common element of medical evidence, I insist that it is an evil for which medical men should not be held responsible. It is the unavoidable fruit of the conditions under which the modern practice of the law is pursued. The physician in the sick-room does not exhibit the disposition here depicted; but place him under the novel and subtle influences of the court-room and he becomes another creature. A case, for example, occurs which offers an opportunity for the use of a medical expert. You receive a polite invitation from the counsel, to serve him in that relation. You do not inquire very closely into the grounds that have determined the selection; you feel complimented, at all events, and you consent to be retained. Now, having fully committed yourself to the service of your employer, your independence is almost necessarily laid aside. You are expected in preparing for the trial to develop all the elements in the case favorable to your employer's side only. The advocate consults with you, nourishing in you a controlling partiality, and doing all in his power to stimulate a cordial interest in his client's cause. The witness thus approaches the trial, expert chiefly as a partisan medical advocate. Against the insidious influences which promote this surrender of mental equipoise, few physicians could successfully defend their judgment.

Then at the trial itself, still more compulsory influences encompass him. He now finds himself in the arena, marshalled with others to defend his own side, to defeat the opposing side. He is harassed by the technical limitations of the rules of evidence. Through the inability of lawyers to conduct acceptably an examination on medical subjects, he is made inadvertently to state views which, under other circumstances, he would not think of supporting. Professional pride compels him to defend stoutly his position, a retreat from the ground being deemed worse than the blunder which took him there.

Now, what can be done to modify, or, if need be, to revolutionize these unsatisfactory methods? As may readily be inferred from what has been presented, the first thing to be desired is the removal of the medical witness from the influences and temptations of partisanship; he must be lifted far above the plane of bias. To secure this end, the best way, because it is the most in accord with American notions of fairness, is that which would provide that the medical expert in any action at law, civil or criminal, should be the choice of the two parties interested in the litigation; or, in the event of their disagreement or neglect, the choice of the court.[4] The advantages of such an innovation, both theoretical and practical, are too plain to be mistaken. Theoretically, such a plan would secure experts in fact as well as in name, since it would obviously be for the interest of all concerned that the best available medical judgment should be obtained upon technical questions involved in the issue on trial. Instead of the present deplorable exhibitions, so amusing to lawyers, so discreditable to our profession, so subversive of justice, we should see a true representative of medical science, appearing in court as the interpreter of the facts established in the evidence. We should see him, with the same judicial independence which the presiding justice himself must display, passing judgment, without fear or favor, on matters which legitimately fall to his office as an expert. There would be little danger that this altogether honorable function would fall into unworthy hands under such a system; the man chosen would, from the necessities of the case, be well known as the possessor of special knowledge fitting him to comprehend and to elucidate the points presented in the testimony. The man of pronounced and peculiar views, the man of hobbies, would not be sought; his judgment is already discounted.

In practice, the expert thus selected would make such investigations as the case demanded, would listen to all the testimony, and at the proper time would report his conclusions, either as oral evidence, or, preferably, in the form of a written statement. Here would occur an opportunity for professional distinction. The name of medical expert, instead of conveying with it a questionable flavor, would become a term of good repute, attracting rather than repelling the master-minds in our profession; while the many-sided questions presented in legal suits and actions would offer occasions for medico-legal reports such as have made Germany and France confessedly the leaders in forensic medicine.

But at just this point, the typical barrister, with a gesture and in tones familiar to those of us who have ever served as witnesses, says: "Stop a moment! I object!" And when asked to state his objection, he replies: "I object because such a scheme would interfere with the constitutional right of the individual citizen to defend his life, person, property or character by producing 'all proofs that may be favorable to him.' I object because when I undertake to prosecute a suit at law or when I am engaged to defend a client, I wish to know precisely what the evidence favorable to my cause is to be; I have no intention of remaining wholly ignorant of the medical conclusions up to the time of the expert's appearance in court. I am in court theoretically to see that justice is administered; but I am there in reality to do what I can to win a verdict for my client, and I wish, in order to secure that end, to employ all lawful means, including medical evidence of my own choosing; and if this evidence is skilfully warped and stretched to meet well the exigencies of my claim, it will be so much the more useful and acceptable." This is the lawyer's view of the matter; and it is this spirit which has hitherto stood as an insuperable obstacle in the way of a much-needed reform. It is a purely selfish spirit held by a large part of the legal profession, but repudiated by a few conspicuous and honorable exceptions.

Meanwhile, we as physicians have a plain resource. When required to discharge the duty of medical witnesses, let us diligently aim to illustrate a high standard. Let us avoid well-recognized errors to the utmost of our ability. Let us decline to act simultaneously as medical advocates and medical witnesses. Let us endeavor to give our testimony with the same candor and the same independence which would characterize our statements if instead of the peculiar environment of a court of justice, we were in the presence of an audience of friendly, but critical, medical associates. Difficult as such a duty is, it is not impossible of performance.

IV. This review of the relationship which our profession holds toward the Commonwealth will be incomplete without some reference, in conclusion, to a still higher obligation resting on us. It is the obligation of loyal, patriotic citizenship, involving duties superior to any of those which I have undertaken to discuss. Men sometimes speak of their citizenship as a privilege, to be used or laid aside with easy indifference. Properly considered, it is much more than this: it is a living trust, a priceless heritage, involving duties as well as rights. In the presence of educated physicians, there is no need to emphasize this. They recognize their obligation and their opportunity, — their personal obligation of earnest loyalty, their opportunity, through the place they hold in the community and in the household, to raise the level of civic virtue by precept and example. To them, the service to the State which the best type of citizenship presents is not expressed in political zeal, in greed for office, or in an active partisanship which in medical men is always especially offensive and objectionable. It means, on the other hand, absolute independence of all machine methods in politics. It leaves practical politics to professional politicians, but it never fails or omits to register its convictions through the agency of the ballot. It is found in sympathy with all reasonable methods of moral and social reform, but avoids impracticable radicalism and sensationalism. It stands for popular education and defends the public schools from all assaults, overt or insidious, that would impair their usefulness and freedom. It insists on fidelity and honesty in official station. It aims to aid in shaping a healthy public opinion upon all matters pertaining to the welfare of society and the elevation of mankind. It protests against the fastidious indifference which too often marks the attitude of educated men toward civic affairs. When the nation's life is assailed, it is found at the front represented by such men as Derby and Otis, and Sargent and Hooker, and Bell and Lyman, adding new lustre to the proud title of Massachusetts volunteers.

Fellows, these closing years of the nineteenth century are making an extraordinary record of progress in all that pertains to the science and the art of medicine.

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[4] The practicability of this method was demonstrated by the New Hampshire Supreme Court in a case which occurred during the preparation of this discourse.

The brilliant, almost audacious, achievements of modern surgery and the beneficent triumphs of practical and preventive medicine inspire our admiration and stimulate our zeal. In the rapid movements of our noble profession along all the lines of advanced development, we find it difficult to keep our leaders in sight; star-eyed science certainly does not encourage loitering on the part of her votaries. But while we strive to keep in touch with this spirit of progress in all that belongs to our domain as physicians, let us not forget the claim which the Commonwealth may properly make upon us as citizens. Let us seek earnestly, each in his own community, to illustrate the highest ideals of loyalty and fidelity. So may we, in a double sense, as physicians and as citizens, discharge our duty to humanity.

Original Articles.

THE AMERICAN PHYSICIAN.[1]

BY WILLIAM EVERETT, PH.D.

I FEEL that there is a peculiar right in a society of physicians to call on any man for a speech, when I reflect how completely it is owing to their mercy that one is able to speak at all, or even to exist.

When I sit down to this well-provided board, and am allowed to eat as much or as little as I want to, I cannot but reflect on the times when the doctors of the elder generation would not let me eat half enough, and the doctors of my own wanted me to eat a great deal too much; and I rise to thank them for all their mercies in preserving my life against the consequences of my own folly.

In old times, gentlemen, you are well aware that your profession was associated with that of the barbers, who in more ways than one tried to avert "the natural shocks that flesh is *hair* to." I suppose no man ever got up out of a barber's chair, and heard the cry of "next," without being devoutly grateful that his Figaro had not revived the recollections of his predecessors, the barber-surgeons, and experimented on the precise distinction between the carotid and maxillary arteries.

It is said that the illustrious James Otis, when stricken with dementia towards the end of his life, was under very severe petticoat government, and on one occasion returned thanks after dinner in the form: "We thank Thee for all Thy mercies, and especially that we have not had our noses bitten off." I thank you, gentlemen, to-day, individually and collectively, that I survive to this hour, in possession of the great majority of my physical organs, and the enjoyment of their normal functions.

But I desire to say again, as I have said in public before, that I have exceedingly little sympathy with the popular jokes on the medical profession. They are not even chestnuts, — they are nothing but horse-chestnuts, bitter, but utterly devoid of nourishment. I believe that no theory can be more false than that Nature cures her own ills, or the ills in which man's ignorance and wilfulness involve her, without the aid of science. Worse than false, that theory is wicked which believes that the ignorant practitioner has any secret revealed to him, which the man of medical science does not attain much better by study, by experiment, by observation, by instruction.

Quackery and patent medicine could not survive for an instant, if they did not furnish excellent means for evading the prohibitory laws, and soaking their votaries' frames in alcohol and opium, under the name of bitters and sarsaparilla. I believe, sir, that your educated physician is no ignorant tamperer with half-known drugs and less known bodies; he is the true son of Apollo, the god of light and prophecy. Talk of your Faith Cure and your Christian Science! the true faith cure comes when the sensible patient trusts himself implicitly to the accomplished physician; the true Christian Science is that promulgated by the great army of healers who tread in the Master's steps, who go about doing good, and turning the Sabbath to its nobler use.

I have been in my life, sir, often in the hands of physicians; and I have been disposed to bless the sickness which taught me the meaning of devotion, of patience, of friendship. I have found that they knew every secret of my frame; I have found that they were competent to deal with those deeper secrets which anatomy and physiology, chemistry and bacteriology do not reveal. They were able to deal with the very cases wherein Shakespeare declares the patient must minister to himself. They could extirpate the nerves of morbid sensibility; they could apply a ligature to an aneurism of self-esteem, and divert the current of ambition to a healthier passage; they could dissolve the rasping calculi that obstructed the channels of generous purpose, and they could detect the foramen between the corrupted and the purified chambers of the soul, which is apt to infect the nobler passions of man long after the fœtal heart has closed. Yes, sir, after their skill has set me on my feet, after they have nerved my flaccid arm, brightened my lack-lustre eye and cleared my tuneless voice, I have loved to seek their company, no longer for the paid services of a physician, but the priceless comfort of a friend. I may not introduce here the names of the living, but I should be destitute of all sense of reverent obligation, if I did not record my dues to Henry Holland and James Jackson; and I trust it will be many years before the members of the Massachsetts Medical Society fail to follow one who drops a tear of admiration and love over the grave of Frederick Winsor.

The skill and kindness of the medical profession is one of those eternal facts to which the heart of man bears unshaken testimony. That single line in Homer (you all know Greek; you're not fit to be doctors if you don't),

ἰητρὸς γὰρ ἀνὴρ πολλῶν ἀντάξιος ἄλλων,
"One healer counts for many another man,"

those three blessed words of Paul, "the beloved physician," tell more truth than all the satires of Rabelais and Molière.

Even in the days of starving and blood-letting which seem so strange and cruel to us, the physician was still revered and loved for his kindness. I know no nobler tribute to the profession than that of Sir Walter Scott:

> "I have lain on the sick man's bed,
> Watching for hours for the leech's tread;
> I have listed his words of comfort given,
> As if to oracles from heaven;
> I have counted his steps from my chamber door,
> And blessed them when they were heard no more."

Yet in the light of modern science, it seems amazing that the citadel of Sir Walter's constitution survived the alternate assaults and starvings whereby it was besieged. Yet even under the thin gruel and draining lancet he and his contemporaries loved and trusted their doctors:

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[1] Remarks made at the Dinner of the Massachusetts Medical Society, June 8, 1892.

> "Pleased to the last, they cropped the floury food,
> And licked the hand just raised to shed their blood."

Gentlemen, I beg you to hold fast to this sacred attribute of kindness. I have had some fear in this respect of our younger friends, who like Sol. Gills, are so "chock full of science," that they are apt to look upon the human frame too much as a field for experiment rather than as the residence of a sensitive, quivering soul. They are so proud of their new processes, that they like, I am afraid, to experiment on *corpora cara* as well as *corpora vilia.* I confess I have a preference for physicians of at least my own age, who have more knowledge of patients, if they have less of diseases. I feel nervous about entrusting a case of colic to my young friends and former pupils for fear they should suspect typhlitis, and perform laparotomy before I could turn round. I am afraid in those famous hospitals of Europe, whatever else they learn, they find as Dr. Holmes once said at this very board:

> "Kindness untutored by our grave M.D.'s."

I read an interesting paper in your *Medical and Surgical Journal* the other day (which I read every week, and immediately feel the symptoms of all the diseases described there), wherein a rising practitioner declared he actually discovered, if he administered ether, especially to children, gently and slowly, instead of forcibly and abruptly, he not only got rid of some distressing tracheal irritations, but positively produced more perfect anæsthesia and found the operation proceed more favorably, than if he clapped the towel peremptorily over the reluctant nostrils. I should hope so! But it is sad that any of our young doctors should have ever been trained to think otherwise, or should suppose that mechanical roughness of operation can facilitate their work, instead of, in fact, hindering it.

It may be well, sir, for purely pathological or physiological purposes, to send our medical students to Europe. It may be that Prussia is the best climate in which to track the bacilli which are most likely to infest the air of Boston, or that an Austrian hospital, in wards crammed with what your illustrious *confère*, Dr. Oliver Goldsmith, called "the rude Carinthian boor," presents exactly the field in which to prepare for the diseases of New England. It may be that European practitioners and teachers have a keener eye, a defter hand, a more powerful spirit of guidance than our own. But you cannot acquire among them, what if one does not keep them up there is danger of losing, those qualities so precious for a physician, in which America yields to no nation in the world. The time, I believe, will come, sir, when Europe has learned to know us better, that Vienna and Berlin and Paris and Glasgow will send pupils here to study the highest standard of a physician's dealings with his patient, unknown in the old world; that humanity which treats with equal courtesy and gentleness the poorest and meanest son of God; that chivalry, lost to the monarchies and commonwealths of Europe, but living, thank heaven, among us, which treats every woman with tenderness and propriety, and sees a sister and a princess in every daughter of the great King. It is possible, sir, that for scientific training to the physician's work we yield to other nations; in moral and sympathetic fitness, I believe we surpass them all, and that we should allow nothing to deprive us of this glory.

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THE FOUR YEARS' COURSE AT THE HARVARD MEDICAL SCHOOL.[1]

BY R. H. FITZ, M.D.

In examining the handsome and instructive catalogue of the Harvard Medical School Association, recently published by that body, evidently under the personal supervision of its talented and versatile President, Dr. Chadwick, it appears that more than two-thirds of its members are residents of Massachusetts. I am easily convinced that nearly all of this 700 are members of our greater Society whose annual meeting we delight in attending. It is therefore eminently fitting that a teacher in the Harvard Medical School, however ill prepared he may prove, should make some report of its progress to those who have been satisfied with it in the past, and who, it hopes, will be proud of it in the future.

Only once before in its existence has so radical a step been taken as during the present year. Many of you remember the powerful address of that most illustrious of American surgeons, Henry J. Bigelow, delivered before this Society, in 1871. The discussions in the medical faculty which preceded that discourse were those which led to the establishment of the graded course of medical study extending over three years. The success of that step, then so uncertain even in the minds of some of its oldest and best friends, is now a part of the medical history of this country.

In the meantime a generation has been born and has attained its freedom. Our *Alma Mater*, Fair Harvard, although she denies the right of suffrage to her medical offspring, has decided to keep them a year longer under her maternal care. Perhaps by this means she may learn to place such confidence in their interest and devotion as to be willing to take their advice and aid even in so important a matter as in the selection of overseers. Let us hope that the graduates of the four years' course in the medical school may be considered no less worthy of this honor than their younger brothers who have spent a like number of years at her side, perhaps, in preparing to enter the Medical School.

In and after September, 1892, every student entering the Harvard Medical School, before receiving its degree of Doctor of Medicine, will be required to complete a four years' course of graded medical study. The statement is simple enough but the result has been arrived at only after years of discussion and of patient waiting for the time when such a policy might be regarded as other than suicidal.

It has not been undertaken as a forlorn hope to rescue the school from a stress of financial depression, but has been agreed upon in a season of prolonged, pecuniary prosperity, and at a time when the number of its students is the largest ever assembled.

It has not been announced with the thought that it might result in large benefactions, or as the condition of gifts which would ensure its success. On the contrary, it has been decided upon in the face of a probable diminution in the number of students, a loss which may result in a considerable pecuniary sacrifice on the part of its teachers. All honor to them, and especially to those who are largely dependent for their support upon the fees derived from students, and who anticipate, not without reason, the possibility of a reduction in salary to meet the necessary expenses of maintaining and perfecting the improved plan of education.

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[1] Remarks made at the Dinner of the Massachusetts Medical Society, June 8, 1892.

The essential features of this plan consist, first, in giving up the teaching of general chemistry to the preparatory schools, and in demanding evidence of a knowledge of this subject as a requirement for admission. It is felt that medical chemistry alone should be taught in medical schools, and the time hitherto given to instructing the student in the former subject will, hereafter, be given to enlarging his knowledge of the latter. A wholly new course is to be established, one in clinical chemistry, which is designed to familiarize the student, more than ever before, with the chemical knowledge and manipulations so essential in the recognition of disease.

A second important use is to be made of the gain in time obtained by requiring a satisfactory knowledge of general chemistry when the student is admitted. He will be compelled to train himself in those bacteriological methods especially needed in diagnosis and treatment. He must personally undertake, in the laboratory, to render aseptic his hands and instruments, his dressings and the field of operation. He will be taught experimentally, by personal failures as well as successes, the essentials of modern, surgical, obstetrical and, one may say, general practice. Whatever methods are of value in the recognition of disease-producing bacteria, he must learn, and by appropriate trials, show his familiarity with them.

Finally, a much demanded improvement in clinical teaching is contemplated. Separate courses of instruction will be offered to the beginner and to the advanced student, each adapted to the degree of development which he has attained.

It will also be attempted to give to every student individual opportunities of watching the progress of a certain number of cases of disease in the hospitals, from the time of the admission of the patient to his discharge. He will be expected to keep full and accurate records of these cases and to be prepared at all times to present the evidence which he has accumulated. The end in view is to make every graduate a hospital pupil as well as a medical student.

From this necessarily brief statement of what is planned it is evident that the school will offer the student more than he has ever before received. It will demand from him a better preliminary training, and it will give him, in return, a more profitable employment of his time.

From you, its graduates and friends, it asks only approval and encouragement, and, in the light of past experience, it rests assured that it does not ask in vain.

A PREMATURE announcement that M. Pasteur had succeeded in stopping the attacks of confirmed epileptics by anti-rabic inoculations found its way a short time ago into the daily papers of Paris. The possibility of this has been entertained for some time, and that in a recent case sent to the institute, attacks probably epileptic have disappeared. As yet no positive results have been obtained.

THE ELECTRICAL TREATMENT OF PELVIC INFLAMMATION.[1]

BY W. L. BURRAGE, M.D.

THERE being many practitioners who are sceptics as to the value of electricity in the treatment of the diseases of women, I will begin by quoting from our latest and probably best books on gynecology, namely, the sixth edition of "Thomas on the Diseases of Women."

In this work there is an entire chapter devoted to "Electricity as a Therapeutical Agent." In the chapter we find the following: "It is true there are still many gynecologists who do not believe in its particular efficacy (electricity) partly because they have either had no experience with it or because many of the most startling results have been reported by gentlemen who were not gynecologists, but electricians, or, better, electrologists, who possibly may have been mistaken in their diagnosis and in the results which they claim to have obtained. Still we feel confident from our own experience that we have in the two varieties of the electrical current most potent agents for relief from suffering, and perhaps even cure, in many cases of pelvic disease in the female."

So much for electrical treatment in general. A little further on in the same chapter we read: "Chronic pelvic cellulitis and peritonitis, pelvic neuralgia, local and reflex, pelvic lymphadenitis and lymphangitis — in all these three conditions the local and reflex pains are mostly due to inflammatory indurations and adhesions of the tissues involved. The vaginal roof is hard and rigid, the uterus immovable, perhaps displaced, and the uterine ligaments tense and inelastic. If not of too long duration and particularly if the exudation represents a distinct swelling, the galvanic current may effect decided results."

Gynecological electro-therapeutics conducted with anything like scientific methods dates its beginning from the initial work of Apostoli, only ten years ago. In this country the names of Engelmann, of St. Louis; Mundé, Rockwell, Gunning and Goelet, of New York; Baker, of Boston; Lapthorn Smith, of Montreal; Massey, of Philadelphia; and Martin, of Chicago, are most familiar as workers in the field. My own experience with electricity in gynecology extends over two years, during which time I have made about a thousand applications, including those made in private practice and at the Electro-Therapeutical clinics at the Free Hospital for Women.

Thanks to the introduction of better instruments, to the exact measuring of doses, and to greater attention to detail we are now experimenting intelligently and arriving at definite results, impossible under the old régime.

As regards the treatment of pelvic inflammations with electricity, we have to consider two stages of inflammation, the acute, and the sub-acute or chronic. In the acute stage most authorities are against treatment with galvanism. Experimentally, I have tried galvanism in one case of acute pelvic inflammation with salpingitis. The patient had thirty-six milliampères, negative, for five minutes. The pain was increased, the temperature went up from 100° to 102° and she was made much worse.

Apostoli advocates bipolar faradism, first vaginal, and after increased tolerance, intra-uterine, using the coil of fine and long wire and prolonging each sitting until the relief of the pain. I have found the bipolar vaginal current lessen pain markedly both in the acute and the chronic stage. I cannot see the advantage of intra-uterine application and have not used it.

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[1] Read before the Section for Obstetrics and Gynecology of the Suffolk District Medical Society, March 9, 1892.

In the sub-acute and chronic stage, where there are found no fever, no chills, no sweating, no evidences of pus forming, galvanism, the continuous current, has been, in my experience, of the greatest benefit both as to the relief of symptoms, and in the dissipation of the pathological exudate. As regards the many cases in which we are unable to diagnose with a certainty the presence of pus, it seems to me that the doubt is not a contraindication to the use of electricity. I have not seen it do harm and other observers bear testimony to the same effect. If pus is present we do not expect as much benefit from the use of electricity, that is all.

Massey in his book on "Electricity in the Diseases of Women," second edition, page 175, says: "The existence of pus in a tube or elsewhere in the pelvis may be a contraindication to this form of electrical application (vaginal galvanism), but if so I have never had evidence of the fact." He cites instances of pyosalpinx relieved by vaginal and intra-uterine galvanism.

Treatment with electricity should not be made use of to the exclusion of the time-honored methods of treatment of pelvic inflammation, for example, hot douches, painting the vaginal vault with Churchill's tincture of iodine, and glycerine tampons. I have seen the best results where electricity has been combined with those measures.

The action of the galvanic current on the tissues through which it passes may be divided into two parts, the polar, and the interpolar. At the negative pole, if the metal of the electrode is brought into direct contact with the tissues and a high intensity used, a soft, easily bleeding eschar is formed; hydrogen gas, set free by the electolytic effect of the current on the water, and alkalies, probably the alkaline bases, liberated from combination with acid molecular, gather here. At the positive pole the eschar formed is dry and non-hæmorrhagic, and oxygen gas and acids collect.

The foregoing points can be demonstrated as facts. As to the interpolar action, namely, what takes place in the rest of the tissues traversed by the current we are dependent on theory. It is supposable that the laws that govern the phenomena of the electrolysis of inorganic compounds, hold with reference to the chemically more complex organic compounds of the body tissues. We lack the proof. That electricity should resolve exudates of low vitality and promote nutrition of tissues of high vitality at one and the same time does not appear to me to be an inconsistency. It is probable that the phenomena of electrical osmosis — the passage of fluid through porous material in the direction of the current, from the positive to the negative pole, plays a part in the action of the galvanic current in removing plastic and serous infiltrations.

The form of electrical treatment that commends itself most strongly consists in the application of moderate intensities, from 25 to 75 milliampères, vaginal rather than intra-uterine, and for periods of time varying from five to ten minutes at a sitting; the sittings to be held twice a week or even every other day according to the tolerance in the given case. After a preliminary application or two of perhaps 25°, it is my aim to use a progressively higher intensity that causes not more than an easily endurable amount of pain.

With vaginal galvano-puncture for pelvic inflammations in the stage of infiltration, as practised and recommended by Apostoli, I have had no experience. To my mind the puncture adds an unnecessary risk to the treatment, the risk that attends any surgical procedure of the same character in structures already in a state of inflammation, and this, for me, overbalances the advantage derived from bringing the electricity in more intimate contact with the exudate. As for draining pus-tubes and abscesses by vaginal galvano-puncture, I consider it bad surgery. If an opening is necessary it should be of sufficient size and made according to surgical principles.

Let us now run over the steps in the treatment of a case of non-acute pelvic inflammation. The operator should be provided with a good battery or source of a sufficiently strong current. Anything from a portable battery giving a voltage of 50 to the Edison 110 volt incandescent current will answer. He must have a current controller or rheostat, a milliampère-meter and three electrodes, an abdominal dispersing, a vaginal, and an intra-uterine. Suppose that for battery he has one composed of from 40 to 60 Law cells, for rheostat the Bailey, for milliampèremeter the MacIntosh, for dispersing electrode the Goelet clay, for vaginal electrode the carbon or brass ball covered with clay, absorbent cotton and gauze, and for intra-uterine electrode a two and one-half inch tip of block-tin at the end of a hard rubber handle.

The patient should be on a suitable table or raised couch, on her back with knees flexed. Exceptional cases can be better treated in the Sim's position. If the treatment is to be intra-uterine she should have a small vaginal douche of corrosive (1 to 5,000), or the vagina should be thoroughly swabbed with cotton soaked in the corrosive solution. The internal electrode should be surgically clean.

First test the apparatus. For this purpose connect the negative (zinc) pole of the battery with the meter by means of an insulated conducting cord, and the meter with the abdominal dispersing electrode with another cord. With a third cord connect the positive (carbon) pole of the battery with the rheostat and the rheostat with the vaginal or intra-uterine electrode by means of a fourth cord. See that the plates of the rheostat are raised so that they do not touch the water. Bring the abdominal and vaginal electrodes in contact, that is, short circuit the battery. Turn the handle of the rheostat until the plates touch the water, and note the behavior of the needle of the meter as you raise or lower the plates. If you are satisfied that the current is passing steadily and that you have perfect control over it, bring the rheostat back to the condition of greatest resistance by raising the plates and break the circuit by separating the electrodes.

Having thus tested the apparatus the operator is ready to begin the application. Apply the clay electrode, previously well soaked in water and warmed, to the abdomen, its lower edge being at the symphysis pubis. Disconnect the vaginal electrode from its conducting cord and introduce it by hooking back the perineum with the forefinger of the left hand, or, if the introitus is tight, pass a Goelet speculum, and, pressing strongly backward slide the ball tip along it into the vagina. The tip, by the way, should be an inch in diameter to prevent injury to the vagina from the caustic effect of the electricity at the active pole. It should rest at the point nearest to the inflammatory effusion. The intra-uterine electrode is introduced by locating the os uteri with the left forefinger and passing the point along the finger until it enters the os. Now take a final glance at the rheostat to make sure it is in a position of greatest resistance, and connect the conducting cord with the internal electrode. Note the exact time on your watch. Hold the internal electrode with the left hand while the handle of the rheostat is turned with the other. It is well to have the patient place one of her hands on the clay to improve the contact with the skin of the abdomen.

Keep an eye on the milliampère-meter and on the patient's face. For the first dose, 25° to 35°, positive, for five minutes is generally sufficient. After two or three applications, you can change to negative in the vagina, and gradually increase the dose according to the toleration to 70° or 100°. The positive pole is used in the beginning because it is less painful than the negative. It is seldom necessary to prolong the treatment more than ten minutes. Five minutes is a good average. Increase and decrease the current slowly, using a minute of the five for this. Disconnect the internal electrode before removing it. The treatment may be given twice a week or oftener.

When an endometritis accompanies the pelvic inflammation, as it often does, it is well to make the treatment intra-uterine after tolerance has been acquired by vaginal applications. The positive pole, intra-uterine, is especially indicated when there is a tendency to flowing. Should there be excessive pain as a feature in the case, the faradic current from a coil of fine and long wire applied with the bipolar vaginal electrode, using as strong a current as the patient can bear, and for a period of time until the cessation of the pain, will be found to be of great service.

I want to emphasize the importance of beginning electrical treatments with mild currents. Aside from the need of this caution from a strictly medical point of view, this is the age of the deadly trolley-wire and electrocutions, and the man on the Common, who dispenses painful shocks of faradism for ten cents, adds his mite to a widespread dread of electricity. Two patients out of three are prejudiced against it. It is necessary to show them that electricity is not the awful agent they supposed.

With your permission, I will read a few cases illustrative of this method of treatment.

Case I. E. F. R., forty years old; married eighteen years, widow five years; two children, twenty-two and twenty years of age; one doubtful abortion. Was referred to the electro-therapeutical department at the Free Hospital for Women, by Dr. W. H. Baker in March, 1891. She had been examined under ether in that institution by Dr. Baker February 26, 1891, and the diagnosis made of old tube on the left side, size of a small lemon, sub-involution of uterus and retroversion with adhesions. Her chief complaint was pain in the left groin. She was easily tired; never very strong since the birth of her first child. Both labors were instrumental. Four years previously she had had an operation for lacerated cervix and for two years she felt better. For the last two years had felt as bad as ever. Catamenia regular; painful of late, obliging her to keep her bed. Flow increased in amount to ten napkins, formerly three to four.

March 7th when I first saw her I found the uterus in the second degree of retroversion; not freely movable; a mass behind and to the left, size of a small orange. Endometritis and a long anterior lip to the cervix, the result of a trachelorraphy performed two years before. The uterine canal measured three and one-quarter inches. There was no especial sensitiveness. A beginning was made with negative vaginal galvanism on that day (March 7th). She had 30°, negative, six minutes. March 11th, 30°, negative, five minutes, and March 14th, 40°, negative, five minutes. March 18th, the intra-uterine electrode was passed to the fundus, and a current of 40°, negative, was given for five minutes. This treatment caused considerable pain, both at the time of the application and on the two days following, so on March 21st, I introduced the bipolar intra-uterine electrode and administered faradism to the point of toleration, from a small Gaiffe battery. Eight minutes was the length of the treatment. She had no more pain, and the catamenia came on two days ahead of time. There was the usual amount of pain with the flow, but the pain in the left groin had disappeared and did not return.

April 1st, she had 50°, positive, six minutes, intra-uterine; and April 8th, 55°, positive, four minutes, intra-uterine. Subsequently, she was given two negative treatments of 35°, for from five to seven minutes.

May 6th, two months after the first treatment, having had eight galvanic and one faradic application, the mass on the left side had entirely disappeared and there was left only a slight thickening in the broad ligament on that side. I was able to replace the uterus bimanually, and she was advised to have a pessary fitted. She then passed from under my observation.

Case II. E. A. H., widow, forty-four years old, was referred to me for electrical treatment from the indoor department at the Free Hospital for Women, in April, 1891. She had been examined under ether in the hospital March 17th previously, by Dr. F. H. Davenport, who made the diagnosis of endometritis, old tube or enlarged ovary on the left side size of a small lime, a hard and adherent retroverted uterus. He curetted her for the endometritis at this time.

She was a thin, nervous woman, a hard worker at her profession, that of a masseuse. Her mother died of cancer of the breast; in other respects the family history was negative. She had had five children, whose ages ranged between twenty-three and fourteen years, and seven abortions, most of them induced. She had suffered for many years from leucorrhœa, which for the last two months had been thick and yellow and of a bad odor. She had been in poor health for three months since an attack of acute pain in the left lower abdomen coming on at the time of menstruation. Her chief complaint was pain in the left groin that had persisted since the above-mentioned attack. She had lost some twenty pounds in weight, was nervous and tired; appetite poor, and bowels constipated. The catamenia, usually painless, had been very painful during the preceding three months. There was no excessive flowing.

April 8th I saw her first, and confirmed Dr. Davenport's diagnosis. The abdominal walls being then very lax, I was able to palpate the enlarged ovary or tube on the left side distinctly, the fundus uteri was in the second degree of retroversion and sensitive to gentle pressure in the cul-de-sac. It was firmly glued in place by adhesions. There was an abundant mucoid discharge issuing from the lacerated cervix. On account of her occupation she was unable to take treatment regularly.

During the six months from April to October, she had eighteen applications of intra-uterine galvanism, of from forty to fifty milliampères at a sitting; eleven were negative, and seven positive. There was marked benefit from the first treatment. She was able to do more work and felt better in every way. In a month the leucorrhœa had ceased. In spite of the fact that she worked incessantly, was on her feet a large share of the time, and in addition had two severe colds, she improved in general strength, and got rid of her pain completely.

June 3d, I noted that the ovary or tube on the left was smaller, the uterus more movable and less sensitive to vaginal pressure.

August 22d, the ovary or tube was still smaller, and thickening in the broad ligaments was the only representative of past inflammatory action.

October 28th, the thickening had entirely disappeared; there was no enlargement of tube or ovary to be felt, and the conditions for examination were as favorable as at the first examination six months before. The uterus was apparently replaceable, but as there was a vestige of the tenderness in the cul-de-sac on deep pressure, it seemed best to advise packing before replacing and adjusting a support. She was referred to one of the out-patient surgeons of the hospital with this end in view.

January 27, 1892, she reported to me that she had felt so well that she had not thought it worth while to have the uterus replaced. She had gained twenty-two pounds in weight since September, her catamenia had been regular and painless, she had had no leucorrhœa and no pain in the groin, and had not felt so well for ten years.

During February I saw her again, and physical examination showed the same condition of the pelvic organs as in October.

The result here can fairly be attributed to electricity, as she had no other treatment beside occasional hot douches.

I will not try your patience by reading more cases. The two I have read will serve as fair samples of a large class of cases that every gynecologist meets. Subacute and chronic pelvic inflammation are among the most important factors in uterine disease. The detection of their presence and their proper treatment are of the greatest moment to the patient and may avert years of suffering. If electricity is a valuable therapeutic agent in these affections, and of that there is not the least doubt in my mind, it should not be neglected because for its application there are required special apparatus and a working-knowledge of electro-physics.

Effie. — That is the new doctor, and those are his children.

Maud. — How ugly his children are!

Effie. — Well, naturally! Of course, doctors have got to keep the ugly ones themselves, you know.

— *Punch.*

Clinical Department.

REPORT OF A CASE OF PURULENT SALPINGITIS.[1]

BY GERTRUDE W. VAN PELT, M.D.

Mrs. B., twenty years of age, octoroon, came for treatment in June, 1891, because she had never menstruated. She had been married two years, and was anxious to become pregnant.

Family History. — She is the youngest of twelve children. Her sisters all menstruated regularly. One sister is said to have died of quick consumption, after a cold taken during her first menstrual period. With this exception there is no possible history of tuberculosis in the family. Father died of some heart trouble, mother of cancer of the uterus.

Patient had always been well until five years before, when she began to have attacks of pain in the back, dizziness and nose-bleed, which attacks came about every four weeks. For a time after marriage, she was better of all her symptoms, but for a year they had been present again, and were increasing. Moreover, she was losing flesh and strength.

On examination uterus was found in good position, with a depth of two and one-fourth inches; ovaries were not found. She had some leucorrhœa. Diagnosis made was, endocervicitis — probable endometritis — undeveloped uterus.

She was treated twice with the galvanic current, the negative pole being within the uterus, with a current strength of 25 milliampères. These caused pain for a few days each time; and on the 20th of the month — the date she usually had her unpleasant symptoms — there was severe pain, which lasted several days. She was confined to her bed; and for her relief, hot douches, poultices, morphine, and applications of iodine were necessary. Also in the left cul-de-sac could be felt a rounded mass, about two and one-half centimetres long, which was very sensitive to pressure. All these symptoms, however, gradually subsided, and the mass became much smaller, and was only slightly sensitive. She then received one treatment of faradism, with a bipolar intra-uterine electrode, and a few days later, which was about the 20th of the following month, she had a slight discharge of blood for the first time in her life, and she had no nose-bleed, no unpleasant symptoms and was feeling very well. The faradic current was used six times during the next four months. She continued well, and the depth of the uterus increased to two and one-half inches. There was no flow again at the menstrual epochs, but less pain and general disturbance than formerly.

During all this time the mass in the left cul-de-sac did not entirely disappear, but it was very small, and gave no trouble. Suddenly, at one of the menstrual epochs, the pain became very severe, and the mass in the left cul-de-sac increased in size and became extremely tender. All symptoms steadily increased until she was operated upon, seven weeks later. At the menstrual epoch passed during this period, there was a sudden increase in the tumor, and an aggravation of symptoms. She grew very weak, had fever, tongue brown, and anorexia.

Dr. Cushing performed the operation at the Charity Club Hospital on January 17th, and although the tumor was found to contain enormous quantities of pus, and the patient was in so poor a condition, she has scarcely had a pain since, and has steadily gained.

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[1] Read before the Section for Obstetrics and Gynecology of the Suffolk District Medical Society, March 9, 1892.

After the operation it was learned that the husband had had gonorrhœa before marriage, but had supposed he was cured. Dr. Dexter very kindly examined the pus for gonococci, but they were not found.

The specimen is preserved in chloral, three ounces to one-half pint each of water and glycerine, which has kept very nicely the relative hardness of the different parts. The tube at the inner third is hypertrophied and hardened, looked comparatively bloodless when fresh, and the lumen is very small. The external two-thirds is soft and uniformly distended. There was pus within the tube. The mass behind and below it, which I suppose to be hypertrophied and degenerated ovarian tissue, is riddled with abscesses. On the right side the lumen of the tube is so small, that I have been unable to pass anything through it, and the ovary has numerous small serous cysts.

I suppose there is little if any doubt of the cause of the inflammation in this case, especially as there is a history of infection. The interesting questions unanswered, are: Was there any condition previous to the infection which rendered menstruation impossible? and after infection, by what road did the inflammation travel? Pozzi says, that when the tube and ovary are not fused together, as it were, uniting to form one common abscess, but when the abscess is in the ovary alone, that there has been a previous cystic condition of the ovary, favoring suppuration, by whatever avenue the inflammation may have travelled, whether through the tube, by contiguity of tissue, through adhesions, or by the lymphatics. When there has not been a pre-existing cystic condition of the ovary, he says the inflammation is periovarian. In connection with this statement, the condition of the right ovary seems interesting and suggestive.

I should like very much to have the ideas of the doctors present as to the pathological changes that have taken place.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

(Concluded from No. 23, page 579.)

PIGMENTATION OF THE SKIN CAUSED BY CHRYSAROBIN.

It is known that when chrysarobin ointment is used in the treatment of psoriasis the affected parts of the skin appear white, whilst the surrounding healthy skin appears yellowish-red. Campana[9] examined portions of the skin microscopically and found that the pigmentation in the surrounding skin was caused by the deposit of numerous blackish-yellow particles of chrysarobin within and between the epithelial cells in the basic layer of the horny epidermis.

TREATMENT OF HICCOUGH.[10]

Hiccough is sometimes a very troublesome symptom, and in some cases may be difficult to overcome. Leloir, in a case of a child twelve years old suffering from persistent hiccough, applied digital pressure for three minutes to the left phrenic, between the two attachments of the sterno-mastoid; the hiccough stopped and did not recur. He has since used the method in a large number of cases, and always with success; in some cases pressure for a few seconds has been sufficient, in others a few minutes.

SUBCUTANEOUS INJECTION OF SALT SOLUTION IN DIARRHŒAL COLLAPSE.[11]

Demieville recommends the subcutaneous injection of sterilized salt solution in the collapse produced by acute gastro-enteritis in infants. The apparatus required is simple. The salt solution used is a solution of chloride of sodium (0.6%). As the solution is rapidly cooled by passing through the tubing, it is well to employ a large reservoir, and to be sure that the solution as it leaves the needle is warm. The skin must be thoroughly disinfected, and also the needle and apparatus; the water should be boiled before use.

As to the quantity to be used, a case is related in which a child, aged four and one-half months, received about four ounces; the injections were made into the thighs, and were followed by gentle massage. The patient in the case mentioned appeared to be *in extremis* when the injections were given, but began to improve almost at once, and reaction was established in a few hours. The injection made the child cry, but did not seem to cause much suffering. The good results obtained by this method are believed to be due to the improvement produced in the circulation, especially in that of the nervous centres.

ATROPINE IN ENURESIS.[12]

Dr. Kerley gives an account of a trial with atropia in twelve chronic bed-wetters in the New York Infant Asylum. The ages of the patients ranged from four to ten years. They had been through the usual routine treatment with strychnia, belladonna, etc., without improvement.

They had always been troubled with enuresis; all wet two or three times during the night, and three once or twice during the day in addition to the nocturnal incontinence. The plan of treatment followed was that used by Dr. William Perry Watson. A solution, consisting of one grain of sulphate of atropia to one ounce of distilled water, was ordered; and of this one drop was given for every year of age of the patient, at 4 and 7 P. M. One-half of this quantity was given, however, in each case for the first few days, no unpleasant symptoms followed, and then the full amount was given.

Physiological symptoms were produced in three, but were slight and of no importance. After six weeks of treatment slight improvement was noticed in four, — would go one or two nights in a week without wetting; at the end of the third month these four wet but once or twice a week. Seven were practically well at the end of the fifth month, rarely wetting.

The treatment, however, was continued as before two months longer, when the dose was reduced one-half; this was given two months, and then stopped. It is nine months since the treatment was discontinued, and there had been no return of the trouble. The remaining five, which includes the three girls, showed but slight improvement at the end of the fifth month of treatment, wetting nearly every night.

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[9] Arch. f. Derm. and Syph., H. 6, 1891.

[10] British Medical Journal, March 12, 1892.

[11] Suisse Romande, No. 1, 1892; British Medical Journal, February 20, 1892.

[12] Archives of Pediatrics, No. 88, 1891.

During the next three months the improvement was gradual, and at the end of the eighth month they wet not oftener than twice a week. During the tenth month there was only an occasional wetting. The dose was reduced one-half, and after one year of continuous treatment there was no wetting. The atropia was stopped, and there has been no return of the enuresis in six months. Eighteen months ago there were twelve chronic bed-wetters of the worst order; to-day they are well, — the only medicine used was atropia, given as above.

INJECTIONS OF AMMONIO-CITRATE OF IRON IN CHLOROSIS.[13]

Dr. Alvazzi, of Turin, has successfully treated chlorosis by means of injections of ammonio-citrate of iron. For three months various preparations of iron had been given in considerable doses without benefit, and the patient had became so weak as to be unable to leave her bed. The red corpuscles, which were pale, averaged 4,000,000, per cubic millimetre, and there was slight leucocytosis. As the internal administration of iron had failed, it was determined to try injections of the ammonio-citrate according to the following formula: Ammonio-citrate of iron, grains 17; distilled water and laurel water, one and a quarter drachms each. The injections were given with an ordinary Pravaz's syringe. One-sixth of a grain of the salt was given once a day, the amount being gradually increased till on the ninth day it had reached two grains, still given in one injection. On the sixteenth day, no ill effects having been observed, two injections of two grains each were given each day, and after thirty days the patient was discharged cured. Two or three of the injections were given under the skin, but this having on each occasion caused severe pain, all the others were made into the substance of muscles. The injections were given with strict antiseptic precautions, and were always followed by somewhat vigorous and prolonged massage at the seat of the injection. Pain seldom lasted long, and no abscesses or even swelling followed the injections nor did the temperature rise. When discharged, the red corpuscles had recovered their natural color, and averaged 4,350,000 per cubic millimetre, and the proportion of white corpuscles was normal. The hæmoglobin had risen from thirty-five to over ninety-five and the girl's weight had increased from 72 to 84 pounds. Her appearance and general health had improved immensely.

HYDRASTININ IN UTERINE HÆMORRHAGE.

Falk, in 1890, showed that hydrastinin acts to diminish the size of the blood-vessels, is not a dangerous drug since it does not affect the heart and is free from any toxic action upon the general system.

Dr. Abel[14] now gives the result of the successful employment of hydrastinin in his gynecological clinic. It is, of course, useless to try it in uterine hæmorrhage due to polypi, or to carcinoma; its field of usefulness is in another class of cases, such as patients suffering from metritis and parametritis.

It is necessary to give the drug subcutaneously, since, when given by the mouth its action is not satisfactory. Eight to sixteen minims of a ten per cent. solution is the amount for one injection. Directly after it has been administered the patients complain of a burning pain locally, which does not last long and may be mitigated by cold applications. After some hours there appears at the site of the injection a black and blue area, sometimes as large as a half-dollar, now and then much larger, which disappears slowly and there remains an induration which persists for a longer period and for some time the spot is painful to pressure.

Notwithstanding obvious drawbacks Dr. Abel recommends its use. It has been used to stop hæmorrhage during pregnancy and without the risk of bringing on miscarriage.

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Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

(Continued from No. 23, page 586.)

Annual meeting held in Boston, May 31, June 1, and 2, 1892.

WEDNESDAY, SECOND DAY. — MORNING SESSION.

The morning session was given up to a visit to the Massachusetts General Hospital, where a number of interesting cases were shown and the methods of work demonstrated.

AFTERNOON SESSION.

Dr. Dandridge, of Cincinnati, read a paper on

THE SURGERY OF THE TONGUE.

The paper was confined to a consideration of operative procedures in malignant disease. Our knowledge of lingual cancer was first reviewed. As a rule, it appears in the form of epithelioma. It runs its course in about a year and a half. In many cases it develops from an indifferent lesion which has been subjected to continued irritation. Neighboring glands are usually affected, and this may occur within three months or not for six or nine months after the appearance of the disease. In ulcerated epithelioma the diagnosis will most often hesitate between that and tubercular and syphilitic ulcer.

The history of operations for cancer of the tongue was then considered and the author expressed his agreement with the following propositions laid down by Treves:

(1) The organ should be removed by cutting with the scissors or knife.

(2) The removal should, as a general rule, be effected through the mouth.

(3) Every means should be taken to reduce the hæmorrhage to a minimum.

(4) When the floor of the mouth is involved, or the glands extensively involved, the incision should be carried out through the neck.

The following methods were then described in detail: Whitehead's, Morent's, Baker's, Kocher's and Volkmann's.

Whitehead's. In this operation a gag is used, care being taken to avoid pressing back the jaw and impeding respiration. The patient is in a sitting position. A ligature is passed through the anterior part of the tongue and scissors are used for the section. If the frænus and the anterior pillars of the fauces are completely divided, the tongue can be drawn freely from the mouth. The organ is then separated by free cuts with the scissors until the main artery is reached. This is seized with forceps before division. Before completely severing the tongue, it is desirable to pass a loop of silk through the glosso-epiglotedian fold, in case it may become necessary to make traction on the posterior floor of the mouth. The parts are then rendered as aseptic as possible by swabbing over with 1:1000 biniodide of mercury solution, and painted with iodoform styptic solution — Friar's balsam, in which the spirits are substituted by a concentrated solution of iodoform in ether, one part in ten of turpentine having been added to the ether. This varnish is repeated daily. The patient is not kept in bed but encouraged to go in the open air. Whitehead has reported 104 cases of total removal of the tongue by this method, with 20 deaths, or 19.20%. Of 61 patients, 15 survived the operation one year, four, two years, three, three years, four, five years, and one, six years.

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[13] British Medical Journal, August 29, 1891.

[14] Berliner Klin. Woch., No. 3, 1892.

Baker's operation. In this operation two threads are passed half an inch from the median line of the tongue on each side. The attachments of the tongue on the side are divided with scissors, keeping close to the lower jaw. The mucous membrane is next divided along the median line and the two halves of the tongue separated by the finger. The diseased half of the tongue is then removed with the ecraseur. After this, glands should be searched for and removed either from the floor of the mouth or by external incision.

Kocher's operation has been commended in cases in which the floor of the mouth and the sub-axillary glands are involved, but is too serious an operation for cases where the disease is confined to the tongue. Tracheotomy is first done and the fauces plugged. An incision is then made along the anterior border of the sterno-mastoid muscle. From the first, an incision is made from the middle of the sterno-mastoid muscle to the hyoid bone, and along the anterior border of the digastric to the jaw. The flap is turned up and the facial artery and vein and the lingual artery tied. The sub-axillary fossa is then completely cleaned out. The attachments of the tongue are now divided, and it is drawn through the opening and removed, either in part or in whole, by scissors or galvano-cautery. If the whole tongue is removed, the lingual artery of the opposite side must be ligated through a separate incision. The tracheotomy tube is allowed to remain and the wound is kept packed with gauze soaked in carbolic acid solution. This is changed twice a day, at which times food is given. In fourteen cases thus operated on there was only one death.

Volkmann's method has been attended with extraordinary success, there having been only two deaths in ninety-one operations. The patient is seated in a chair. If the tongue can be brought forward a resection is made with knife or scissors and the mucous membrane brought together, or, if a strip of healthy tongue is left it is turned around so as to make a short broad organ. If the disease is too extensive to admit of this method, a traction thread is passed through the tongue and it is drawn forward. The canine or first molar tooth is extracted and an incision made downward from the corner of the mouth and the lower jaw divided. The portions of bone are separated, and the attachments of the tongue divided. The cut surfaces are covered with mucous membrane and the bone wired. A drainage-tube is placed in the tonsillar fossa and brought out at the lower portion of the incision.

In the after-treatment of removal of the tongue for cancer, the three great factors are: (1st) let the patient be well fed; (2d) let all discharges escape from the mouth; (3d) keep the cavity of the mouth sweet and clean.

The author next referred to the palliative treatment to be employed in cases where operation was not indicated, or where the patient refused surgical interference. For the pain a powder consisting of, iodoform (one grain), morphine (one-sixth to one-half a grain). and borax (three grains), has been recommended applied directly to the painful spot. Cocaine has naturally been resorted to either by application to the surface or by hypodermic injection, but there is danger of the establishment of the cocaine habit. The excision of a portion of the lingual nerve was highly recommended, but the relief thus afforded may be only temporary. For the relief of salivation and fetor, various antiseptic mouth-washes may be employed. Where there is difficulty in swallowing, on account of the pain, relief may be afforded by painting the surface freely with cocaine just before the administration of food, or a soft rubber tube may be passed into the œsophagus.

The following conclusions were considered justified:

(1) Sufficient experience has been accumulated to show that the removal of cancer of the tongue prolongs life and adds to the comfort of the patient and further affords a reasonable hope of a permanent cure.

(2) All operations should be preceded by an effort to secure thorough disinfection of the mouth and teeth.

(3) In the treatment of continued ulcers and sores on the tongue, caustics are to be avoided and all sources of irritation removed.

(4) Persistent sores on the tongue should be freely removed by knife or scissors, if they resist treatment.

(5) When the disease is confined to the tongue, Whitehead's operation should be employed for its removal.

(6) In this operation, the advantage of preliminary ligation of the lingual artery is not definitely settled, but the weight of authority is against its necessity.

(7) The advantage of leaving one-half the tongue in unilateral disease, must be considered undetermined, but the weight of positive experience is in its favor. In splitting the tongue into lateral halves, Baker's method of tearing through the raphe should always be employed.

(8) A preliminary tracheotomy adds an unnecessary element of danger in the removal of the tongue in ordinary cases.

(9) When the floor of the mouth has become involved, or the glands are enlarged, Kocher's operation should be employed, omitting the spray and preliminary tracheotomy.

(10) Removal of the glands by a separate incision after the removal of the tongue, must be considered insufficient.

(11) Volkmann's method still rests on individual experience. Its just value cannot be determined until it has been subjected to trial by a number of surgeons.

(12) Thorough and complete removal should be the aim of all operations, whether for limited or extensive disease.

(13) By whatever method the tongue is removed, the patient should be up and out of bed at the earliest possible moment, and should be generously fed.

DR. D. W. CHEEVER, of Boston, referred to the question of diagnosis of ulcers of the tongue. In the first place we have dyspeptic ulcers. These appear in successive crops. They are not indurated, and can be made to heal by simple treatment. Secondly we have the syphilitic ulcers. Previous history is at times of service. In doubtful cases two weeks of anti-syphilitic treatment should be employed. Third, lupus or tubercular disease. This is not so common as cancer. The test of the examination for the bacillus is not always successful. The tubercular ulcers form and reform; some heal and leave scars. Cancer does not heal, but goes on extending. In lupus the sublingual and submaxillary glands are early infected. True cancer is almost always at the side of the tongue; the infection of the glands is usually speedy.

While he advised removal of enlarged glands, he did not think that the neck should be treated as the axillæ. As to duration, he thought that malignant affections of the mucous membranes are more speedy in their recurrence than malignant affections in the skin and glandular structures. In cancer of the tongue the disease, as a rule, recurs in four to six months. In simple cancer of the tongue without gland involvement, preliminary tracheotomy is not needed. He operates with the patient in the sitting position, and not thoroughly etherized. He had never tied the lingual artery for cancer. Partial amputation of the tongue, where the disease is limited, seems to have been as successful as the total removal. Recurrence is almost always in the glands and rarely in the stump. Reference was also made to the remarkable recovery of the power of talking in cases when the tongue was completely removed.

Dr. L. McLane Tiffany, of Baltimore, said that, in considering the operative interference, we should distinguish between cases where the disease involved the anterior portion of the tongue and where the disease has begun more or less posteriorly and there is glandular involvement. In the latter case he prefers division of the lower jaw, either at the symphysis or at the side. He thought it wise to remove the glands beneath the tongue, even if not enlarged. In this way we get rid of one of the routes of systemic infection. Where the posterior portion of the tongue is involved, permanent recovery is rare; where the glands are involved, it is still more rare. He had obtained his best results where he had divided the jaw and secured drainage from below. The incision is not closed, and ample opportunity for drainage is provided. The operation is done with the patient on the side and the head near the edge of the table, full anæsthesia with chloroform being employed. Where the tongue is excised for tubercular ulceration, the ulcer rarely recurs although the general tubercular disease may progress.

Dr. T. F. Prewitt, of St. Louis, remarked that the solution of the operation depended largely upon the extent and location of the disease of the tongue. Where the cancer is limited to the tongue, an operation through the mouth is sufficient. If the floor of the mouth be involved and the disease extend out to the bones, something more is needed. In one or two instances he had resected portions of the jaw. He did not think that the primary hæmorrhage was to be dreaded, but he had seen death from secondary hæmorrhage in a case of diseased arteries.

Dr. W. H. Carmalt, of Philadelphia, had found a great deal of advantage from preliminary tracheotomy. The most frequent cause of death after operation is septic pneumonia from the inhalation of infective material. Tracheotomy not only facilitates operation, but it obviates the danger of septic pneumonia. In his last case he had operated, doing tracheotomy and packing the fauces. The patient did well. At the end of four days he removed the tracheal tube and allowed the patient to breath by the mouth. The next day the temperature was up to 102°. The tube was immediately reintroduced and the fauces packed, and in twenty-four hours the temperature was again normal. In cases where the glands are involved, he advised the Kocher operation. In regard to after-treatment, he had found that patients bear the presence of the œsophageal tube better than its reintroduction.

Dr. R. F. Weir, New York, had removed the tongue five times by the Whitehead operation and five times by the Kocher operation, and had removed one-half the tongue ten times by Whitehead's operation. Where the floor of the mouth or the glands are involved, he prefers Kocher's operation. He considered it good surgery, where there were signs of glandular enlargement in the submaxillary spare, to cut down in front of and behind the sterno-mastoid muscle and examine the condition of the lymphatic glands in this situation. In the Kocher operation he prefers tracheotomy, and does it a few days before if there is sufficient time. He considers it a great advantage, both at the time of operation and afterwards.

Dr. A. G. Gerster, New York, had extirpated the tongue in various ways in nineteen cases. He thought that the more thorough and radical the operation the better were the results. He advocated removal of the affected glands and the use of tracheotomy. This enables the operation to be more thoroughly done, and with more comfort to the surgeon and less danger to the patient. In this region, as in every other region of the body, thorough operation requires thorough anæsthesia.

Dr. T. J. Dunott, of Harrisburgh, reported a case where the tongue was greatly enlarged, and protruded from the mouth. The operation was done several years ago, and the patient is still living and well.

Dr. Jos. Ransohoff, Cincinnati, reported one case on which he operated by the Mordant Baker method four and one-half years ago, and there had been no relapse. In other cases on which he had operated, he had not obtained the same success. In every case where he did not do a Kocher operation he made an incision in the submaxillary triangle, in order to put in a large drainage-tube reaching to the floor of the mouth. This opening gives an oppportunity for the examination of the glands. If there is enlargement, the gland can be turned out or the incision enlarged if necessary.

CONDITIONS DEMANDING EXCISION OF THE GLOBE OF THE EYE,

by Dr. W. H. Carmalt, New Haven, Conn.

As a rule, the question of the propriety of enucleating an eye will be referred to the specialist, but there are cases of emergency in which the general surgeon is called upon to act promptly. In the consideration of this subject we are at once confronted with it from two different standpoints, according as we have to deal with blind eyes or with those in which there is a more or less useful degree of vision.

In the case of blind eyes the objections to the operation are two, (1) the danger of the operation *per se*, and (2) the cosmetic appearance. Meningitis has occurred in some cases operated on in the acute stage of suppurative panophthalmitis. In these cases, the removal should be made as soon as the evidences of suppuration are unmistakable. In cases of lacerated or penetrating wounds with loss of vision, the operation is better done before suppuration occurs, or as soon as the evidences of suppuration are sufficiently plain. There is no one condition for which eyes are so frequently excised as in sympathetic ophthalmitis (threatened or actual). The pathology of the sympathetic process is still a matter of controversy. In a case presenting the irritative symptoms indicating the beginning of sympathetic ophthalmitis, with the other eye lost from injury, or certain forms of disease yet to be mentioned, it is the duty of the surgeon to advise in the most unqualified manner, the enucleation of the blind eye. The irritative stage is usually short. It is more or less rapidly followed by diminution of vision due to an organic lesion. In the acutely inflammatory stage of the sympathetic disease, the removal of the "excitor" is not so beneficial to the "sympathizor," and may be harmful, adding fuel to an already flaming fire. In these cases the operation should be postponed until the active process is subdued. It must also be remembered that in a small number (perhaps about ten per cent.), the sympathetic inflammation may come on after the removal of the excitor; and in about two per cent. it has been thought to have been the result of operation. The conditions liable to give rise to sympathetic ophthalmitis are (1) injuries, (2) diseases. Injuries: (*a*) lacerating or perforating wounds, so severe that the result will inevitably be atrophy of the globe; (*b*) the lodgement of a foreign body in the interior of the globe; (*c*) a penetrating wound involving ciliary region. Diseases: (*a*) recurring or chronic irido-choroiditis from whatever cause; (*b*) atrophy of globe following purulent keratitis or panophthalmitis, or in which ossific degeneration of the retina has taken place; (*c*) atrophy of the globe from any cause with painful ciliary region. Time does not confer immunity against sympathetic disease. There is considerable difference as to liability to the disease in the various injuries and diseases. This sequence is more frequent after injuries than after untraumatic diseases; and of injuries nothing is so potent as the lodgement of a foreign body in the eye.

The pain which comes from the intra-ocular pressure of a chronic glaucomatous degeneration is frequently so excessive as to justify the removal of the offending organ, all other treatment having failed.

Various diseases of the eye leave the organ in conditions so inconvenient or repulsive in appearance that the surgeon's aid is sought for purely cosmetic purposes. Are there, however, no procedures that may be substituted and avoid so severe a mutilation? In earlier days of ophthalmology abscission of the anterior segment of the globe was often practised. In this operation more or less evisceration of the contents of the globe take place. As a matter of fact, the result is about the same as after enucleation, and sympathetic ophthalmia may follow the operation. The opinion of the author was decidedly against such risky procedures, enucleation of the misshapen eye, with the introduction of an artificial eye, is the only admissible operation. The modern expedient of tattooing a white cicatrix of the cornea without staphyloma has resulted in sympathetic disease.

The enucleation of blind eyes that are the seat of phosphènes, like many other operations undertaken to relieve a symptom of nerve irritation, is of doubtful utility.

In regard to the enucleation of eyes only partially blind, it goes without saying that a condition of things which can allow it to be seriously contemplated must apply with greater force to eyes already blind. The chances of accident or independent disease to the remaining eye are sufficiently great to justify the statement that nothing short of the certainty of ultimate blindness to both, or of death, can permit one to consider such a procedure.

Most of the intra-ocular tumors are sufficiently dangerous to life to demand the removal of the organ in which they are contained as the only hope that can be entertained of successfully combating their encroachment. They are of two classes, the granulomata and the sarcomata.

The extra-ocular growths are of greater variety of histological structure. In sarcomata of the orbit, removal of the globe is often required, even when not implicated in the disease.

Should an eye which retains an appreciable degree of vision be removed in order to arrest a threatened or prospective attack of sympathetic disease in the fellow? It is certainly unjustifiable to remove an injured but still-seeing eye, though it may be an excitor of sympathetic disease. The result of the operation has not been sufficiently successful, in averting the progress of the malady after it has begun, to warrant its recommendation. The only condition in which it was considered justifiable to remove a still-seeing eye for sympathetic disease, is where a foreign body remains in the eye. In these cases sympathetic disease is very apt to follow.

EXECUTIVE SESSION.

The following officers were elected: President, Dr. N. Senn, of Chicago; Vice-Presidents, Dr. W. W. Keen, of Philadelphia, and Dr. Chas. B. Porter, of Boston; Secretary, Dr. J. R. Weist, of Richmond, Ind.; Treasurer, Dr. John B. Roberts, of Philadelphia; Recorder, Dr. J. Ewing Mears, of Philadelphia; Members of Council, Dr. Roswell Park, of Buffalo, and Dr. R. F. Weir, of New York. Member of the Executive Committee of the Congress of American Physicians and Surgeons, Dr. L. McLane Tiffany, of Baltimore — Alternate, Dr. James McCann, of Pittsburgh.

It was decided to hold the next meeting in Buffalo, in May, 1893, and Dr. Roswell Park was elected Chairman of the Committee of Arrangements.

The following were elected to membership: Dr. John B. Deaver, Philadelphia; Dr. Frederick H. Gerrish, Portland Me.; Dr. Wm. S. Halstead, Baltimore, Md.; Dr. Charles B. McBurney, New York, and Dr. Henry R. Wharton, Philadelphia.

THURSDAY, THIRD DAY.

A number of papers were read by title.

The morning session was held at the Boston City Hospital, where some interesting cases were shown.

In the afternoon, at the invitation of the President of the Board of Health, the Association inspected the method employed for the disposal of the city sewerage and visited the hospital under the charge of the Board of Charities.

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from No. 23, page 583.)

The Seventh Annual Meeting, held in the Army Medical Museum, Washington, D. C., May 24, 25, and 26, 1892.

FIRST DAY, TUESDAY. — AFTERNOON SESSION.

TREATMENT OF FOLLICULAR TONSILLITIS,

by Dr. G. M. Garland, of Boston, was read by title.

A BRIEF SUMMARY OF THE CLINICAL HISTORY AND TREATMENT OF 2,012 CASES OF ALCOHOLISM, OF WHICH 87 WERE MANIACAL,

by Thomas S. Latimer, of Baltimore.

No attempt is made to discuss the pathology of alcoholism, nor any of the symptoms, except those directly connected with debauch in the habitual drinker. Nearly all of these patients were arrested for drunkenness and disorderly conduct. They were all drunk when arrested, and many of them had not yet become sober when brought to jail. They were cases of almost continuous drunkenness, culminating at short intervals in a severe debauch, leading to some act of violence or to a condition of drunken stupor. All used some form of alcohol when obtainable, but many were habituated to the use of other intoxicants such as chloral, opium and cocaine. There were only two deaths. One of these was a patient who was brought in in a condition of alcoholic coma and died before I saw him. The second case died from the effects of a fall.

No distilled or fermented drink was given in any one of these cases. No drug but the bromide of potassium, except in a few cases where great cardiac weakness prompted the use of tincture digitalis (ten drops) and amonium carbonate (five grains) or occasionally in very noisy subjects, where morphia (one-fourth of a grain and atropia one one-hundredth of a grain) were administered hypodermically, at night.

The study of the foregoing cases leads me to the following conclusions:

(1) That the clinical phenomena attending excesses in the use of alcohol are the direct result of overstimulation, and are not due to the abrupt withdrawal of the stimulus.

(2) That though ability to swallow and retain stimulants is frequently wanting, the desire for them almost uniformly persists.

(3) That alcohol in any form or quantity is unnecessary in the treatment of such cases and is usually hurtful.

(4) That the absolute and immediate withdrawal of alcohol is of the first importance in the treatment of all the symptoms due to its excessive use, even in cases characterized by great feebleness and inability to partake of food.

(5) That forced feeding is rarely necessary, and is of doubtful utility in most cases.

(6) That for the protection of the patient no kind of bonds is called for, and, when necessary for the protection of others or for the contents of the room, they injuriously affect the mental state of the patient.

Dr. G. M. Garland: I would like to ask if vomiting of blood is at all frequent in alcoholism. I have had two cases in my own practice where vomiting of large quantities of blood occurred, and in one case with fatal result. The fatal case was a young man of about twenty-five years of age and of superb physique. He had been on a debauch for four or five days. He endeavored to stop on a Saturday forenoon and at eleven that night began to vomit blood. He died at ten o'clock the next forenoon. The autopsy revealed no lesion in the alimentary tract.

Dr. T. S. Latimer: I have observed vomiting of blood in but one case, and that was obviously from the throat from retching.

Dr. William Osler: Such a case occurred in my practice in Philadelphia. A man who had been on a prolonged debauch had eaten heavily and taken a great deal of stimulant at his club-house. On his return to his home, at 1.30, he was taken with severe vomiting and hæmorrhage of the stomach, from which he died before eight in the morning. I would like to ask Dr. Garland if there was any evidence of liver or portal engorgement in his case, and if the œsophageal veins were engorged.

Dr. G. M. Garland: I do not know about the œsophageal veins. Nothing was found in the abdomen.

PRACTICAL RESULTS OF BACTERIOLOGICAL RESEARCHES,

by Dr. Geo. M. Sternberg, Lieutenant-Colonel and Surgeon, U. S. A.

Science does not demand practical results, but investigates for the purpose of establishing facts and explaining phenomena; but medicine is eminently practical in its aims, and practising physicians, as well as intelligent laymen, meet every announcement of a new discovery in pathology with the question, "Does it aid in the cure of disease?"

Heretofore, the bacteriologist has been compelled to admit that the discovery of the specific cause in a considerable number of infectious diseases has not resulted in the discovery of a specific treatment for these diseases. But recently experimental evidence has been obtained which gives us reason to believe that in a number of infectious diseases, at least, the toxic bacterial products, which give rise to the morbid phenomena characterizing these diseases, may be neutralized in the infected individuals by the administration of anti-toxines, obtained from the blood of immune animals.

The practical results of bacteriological researches in the field of preventive medicine are also briefly referred to.

The establishment of aseptic surgery on a scientific basis also depends on bacteriological researches relating to the pyogenic micrococci commonly concerned in wound infection. And the treatment of localized infectious processes, when these are accessible to local treatment, has been favorably influenced by the exact knowledge relating to antiseptic and germicidal agents obtained by the researches of bacteriologists.

Reference is made to the recent experimental evidence relating to anti-toxines in the blood of animals which have an acquired immunity against virulent cultures of the bacillus of tetanus, the micrococcus of croupous pneumonia, the bacillus of diphtheria, the bacillus of tuberculosis, and against the virus of rabies; also to the recent experiments of Ehrlich, showing that animals may acquire an immunity against the pathogenic action of certain vegetable toxalbumins — *ricin* from the castor-oil bean, and *avrin* from the jequirity bean.

Finally, an account is given of experiments recently made by Dr. Sternberg, in Brooklyn, which show that the blood of a calf which has been vaccinated, and consequently is immune against vaccinia, contains a substance which neutralizes the specific virulence of vaccine lymph, either bovine or humanized.

Dr. Sternberg closes his paper by stating that it is his intention to follow up this line of investigation, and to endeavor to isolate the anti-toxine of vaccinia; also to test the question of its possible specific action in neutralizing the small-pox virus in infected individuals before or after the development of the disease.

Dr. W. H. Welch: The most striking results which have been obtained by the application of this method (the use of anti-toxines) are those reported by Italian observers. These reports are open to some doubt. Dr. Kitasato has expressed a great deal of scepticism. He considers, as do other authorities in Berlin, that no positive results have been obtained in the application of the method to human beings. The final experimental results reported by Dr. Sternberg are very interesting, and I congratulate him on his interesting communication.

Dr. F. P. Kinnicutt: It is difficult to judge in regard to the reported results of these cases from Italy. The last case, the sixth one, is the fullest and perhaps the most convincing of the reports that have been published. It was a well-developed case of tetanus. The urine on the evening before the inoculation or injection of the anti-toxine of tetanus was injected into a series of five or six guinea-pigs and mice. In all it is claimed that death followed in twenty-four hours with well-marked symptoms of tetanus. On the third day after the injection of twenty-five centigrammes of the anti-toxine, the urine when injected into a series of animals was absolutely without result. The blood also was injected before and after the treatment with the tetanus anti-toxine. Those animals inoculated before, are all claimed to have developed tetanus and died within twenty-four or thirty-six hours. Those inoculated three days afterwards with blood from the same patient, who had shown most marked symptoms of improvement, produced no effect.

Some tetanus anti-toxine is being prepared in the pathological laboratory of the College of Physicians and Surgeons, in New York, and a few of us are very much interested in securing cases of tetanus in which to use it.

Dr. V. C. Vaughan: I wish to express my high appreciation of Dr. Sternberg's paper, and especially of his own experimental work with regard to vaccine. Of course the number of experiments is too limited yet for positive conclusions to be drawn.

There are many ways in which immunity can be secured, and we must distinguish between producing an immunity and curing the disease. There is no evidence that the two are the same although the Klemperers try to make it appear so in their work. I think the action of Koch's tuberculin should make us a little slow about accepting and drawing positive conclusions from experimental work. Experimental immunity and experimental cure is one thing, and cure in man is another thing.

Dr. Henry M. Lyman: The results of laboratory experiments have been rather discouraging as showing the transient character of much of the immunity obtained by the inoculations alluded to. Vaccination against small-pox seems to be almost the only case where permanence of immunity is secured.

G. M. Sternberg: I did not purpose to say that it had been absolutely demonstrated that tetanus could be cured by anti-toxine; I merely reported the cases. Why Dr. Kitasato should be so very conservative about the results obtained upon man when they correspond so entirely with the results which he and others have obtained on the lower animals, I do not understand. I think that the future of scientific medicine is in this direction, and that we have entered upon a field that is to be cultivated vigorously and which will give results that will knock conservatism from under our feet before many years.

I believe that there is something in the blood of the immune calf that neutralizes the vaccine virus. This rests upon very few experiments, but these are so satisfactory and decided that I am thoroughly convinced that I shall get similar results on repeating them.

THE TREATMENT OF EXPERIMENTAL TUBERCULSIS BY KOCH'S TUBERCULIN, HUNTER'S MODIFICATIONS, AND OTHER PRODUCTS OF THE TUBERCLE BACILLUS.

by E. L. Trudeau, Saranac Lake. (Read by W. H. Welch).

The present research has been undertaken with a view to obtaining some more definite evidence, — first, as to the curative effect said to be exercised by Koch's tuberculin over inoculated guinea-pigs; second, as to the curative value and dangers in experimental tuberculosis of the modifications of tuberculin prepared by Hunter.

As the result of carefully conducted experiments with Koch's tuberculin upon guinea-pigs, the details of which are given, Dr. Trudeau has concluded that injections of tuberculin exercise a marked remedial influence on the tubercular lesions of the guinea-pig, and can cure the primary one. But contrary to Koch's belief, they cannot "protect the tissues from further invasions of the germs." For infection in these animals may spread from one point to another, even while a cure of the primary lesions is being effected by the treatment.

Koch, from the first, has insisted that the curative substances are inseparable from those that produce fever and local reaction. Klebs, on the other hand, asserts that he has produced from tuberculin a material entirely free from fever-producing or dangerous effects, capable of destroying the tubercle bacillus in the living bodies of men and animals, and of curing the disease. As yet, however, he has furnished no evidence which can be subjected by others to scientific tests.

Hunter, in a recent communication on the chemical constituents of tuberculin, gives the results which he has attained in producing a modified form of this substance, in terms so clear and concise as to invite other investigators to test his conclusions. As a result of his research, he proposes two modifications which he designates merely as B. and C. B., both of which bring about in lupus certain reparative changes tending to cure but unaccompanied by fever, and each varying greatly in the degree and intensity of the local reaction it produces.

Dr. Trudeau found no difficulty in the manufacture of Hunter's two modifications, and conducted experiments in the same way as in his experiments with tuberculin. From the evidence obtained the following conclusions seem justified: (1) In Hunter's modifications the curative principle of tuberculin has been retained. This is especially true of modification B. (2) The fever-producing elements have been to a certain extent eliminated, but C B. may favor, rather than hinder, the tendency to generalization. (3) Modification B. is as efficient and safer than either C. B. or crude tuberculin. Thus far Dr. Trudeau's clinical experience with modification B. has confirmed this conclusion.

Experiments were also made with the object of proving whether the remedial principle of tuberculin is to be sought in the bacilli themselves, or in the culture medium in which they have grown. The liquid cultures of the tubercle bacillus were filtered through hardened filter paper. To this filtrate one per cent. of carbolic acid was added to preserve it and it was then ready for use. This fluid contains all the soluble albumoses and toxines, but no bacterio-protein, and nothing which may have been extracted from the bacilli by heat, as in the manipulation for producing Koch's tuberculin.

Bacterio-protein solution was obtained from the mass of bacilli left on the filter paper by the process described in detail.

With these two solutions several sets of tubercular guinea-pigs were treated. Another method of experimentation carried out, was the inoculation of rabbits in the anterior chamber of the eye according to the plan proposed by Cohnheim and Salamonsen and adopted by Baumgarten for the study of tuberculosis.

The conclusions derived from these experiments are:

(1) Solution of bacterio-protein obtained as described, from well washed bacilli have a doubtful, and at best, feeble remedial influence on experimental tuberculosis.

(2) They produce suppuration and serious constitutional impairment, which may result in organic disease and death.

(3) The liquid culture medium in which tubercle bacilli have developed, but from which they have been removed by filtration, contains the elements which bring about reaction, and cure, in tubercular tissue.

(4) Experimental tuberculosis in the rabbit's eye can be cured by injections of the filtered culture medium.

(5) The permanancy of such a cure has not yet been established.

Dr. Kinnicutt: This is one of the most valuable contributions that has yet been made to the subject of Koch's discovery. Dr. Trudeau has certainly made a new departure. The last time when he was in New York, it was agreed that he experimentally, and I clinically, should undertake investigations with the modifications of tuberculin that had been proposed by Dr. Hunter. The preparations were made for both of us in the laboratory of the College of Physicians and Surgeons, and they consisted of the preparations B. and C. B. Since that time, purposely no communication has passed between Dr. Trudeau and myself in regard to the results of our work. We preferred to test individually the correctness or incorrectness of Dr. Hunter's observations and then compare our results and this is the first communication that I have received in regard to Dr. Trudeau's results. As they are entirely experimental it may be interesting to hear what results I have obtained clinically from the use of the same modifications.

The first proposition which Dr. Trudeau inserts in his conclusions is, that Koch's tuberculin does not cure experimental tuberculosis in guinea-pigs, although its specific influence on the primary lesion is indisputable. My clinical experience of eighteen months has convinced me that tuberculin does contain a remedial principle; that tuberculin is a complex substance and the remedial principle is associated with other substances which are harmful in their nature.

His second proposition is that Hunter's modification C. B. contains less of the remedial preparation than tuberculin and is apparently quite as dangerous.

That same conclusion has been reached by me from clinical study. It not only seems to have less remedial principle but it is a dangerous modification to use. In a single case in my wards in which it was used, after an injection of eight milligrammes was given, an acute apex catarrh was developed which ran a favorable course and terminated at the end of the tenth day. It followed very certainly in consequence of this C. B. preparation.

The third proposition of Dr. Trudeau is that Hunter's modification B. is as efficacious as tuberculin and free from some of its bad effects.

That, too, has been my clinical experience. Dr. Hunter claims that this modification B. is as nearly as possible a pure albumose, that it is free from the alkaloidal substances which he believes to be the harmful properties in the crude tuberculin. The clinical results that have been obtained are as follows: Seven cases of well-marked pulmonary tuberculosis were very critically examined before and throughout their treatment. In two of the cases there has been no appreciable difference in the physical signs of disease during the two or three months that they have been under treatment; although there has been an appreciable difference in the physical condition, which is improved somewhat. In one case the improvement is most marked. In a fourth case the improvement is distinct but not as marked. In the fifth and sixth cases the improvement (and by improvement I mean an improvement in physical signs of disease) has been most marked; and in the seventh case — and it is the only case that I have seen in a pretty large experience in pulmonary tuberculosis — there has positively been an arrest of the disease. The patient, after having presented signs of infiltration at the apex of one lung, anteriorly and posteriorly, with abundant subcrepitation and other signs, is to-day absolutely free from them, and with the exception of impaired resonance he goes out of the hospital as a case of arrested tuberculous disease of the lung.

While these studies are too small to enable us to express a positive opinion as to any specific action which this modification may possess on tuberculous lesions, they are large enough to demonstrate that the modification C. B. has apparently a specific beneficial effect.

In regard to the liquid culture medium — of that Dr. Trudeau alone can speak. It is quite a new departure and certainly the reports that he gives to us are most noteworthy, and it seems to me that in his work more than in that of any one else in this country, we are to look forward to what I believe is certainly to come, that is, a specific remedial treatment of tuberculosis.

It may be interesting to the members of the Association to know that Dr. Trudeau has made some experimental investigations in regard to the alleged specific effect of creosote in experimental tuberculosis. His experiments have not been published but he has very kindly given them to me to publish in connection with some work of my own in this direction.

The summary of his experimental work was, that creosote given in the largest possible dose in guinea-pigs, had absolutely no effect either in controlling the development of experimental tuberculosis or in arresting its progress.

Dr. W. H. Welch: Dr. Trudeau, if here, would doubtless express his gratification with the similarity of Dr. Kinnicutt's results with his own. It seems to me a most gratifying turn in this subject, that it has passed out of newspaper notoriety, and we are getting down now to what we should have had in the beginning, — quiet laboratory work. There is every reason to expect results of practical importance.

Those who are familiar with the literature of the subject know that it has been recently claimed that it is exactly the bacterio-protein that possesses the curative action. Dr. Trudeau has shattered that view conclusively. This is a very gratifying result. It began to look as if the peculiar properties of the tuberculin were not due to the growth of the tubercle bacillus at all but were due to the growth of all sorts of bacilli.

As Dr. Kinnicutt has said, it is impossible to say anything in the way of criticism with regard to the experiments with liquid culture media.

(To be continued.)

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MASSACHUSETTS MEDICAL SOCIETY.

The One Hundred and Eleventh Annual Meeting was held in Boston June 8, 1892, the President, Dr. Amos H. Johnson in the chair.

The report of the Treasurer showed that during the year the total receipts had been $12.318.63. There is a balance in the treasury of $10,456.98. The total funds of the Society now amount to $68,701.

The committee on the subject of making permanent provisions for chronic epileptics reported that the matter had been brought to the attention of the Legislature, but owing to the fact that the subject of an institution for the chronic insane had taken precedence, the committee thought it would be well to defer action for another year. The subject was therefore recommitted to the committee.

Dr. F. H. Drew read a paper on

AN OUTBREAK OF TRICHINOSIS IN COLERAIN.

Short papers on the subject of trichinosis were read by Drs. C. W. Macdonald and J. H. McCollom.

Drs. H. L. Burrell and E. W. Dwight presented a paper on

THE TREATMENT OF COMPOUND FRACTURES BY MODERN METHODS.

Appliances were shown and patients presented.

Dr. S. W. Abbott read a paper on

THE REVISION OF THE MEDICAL NOMENCLATURE EMPLOYED IN THE VITAL STATISTICS OF MASSASETTS.

The following resolution was presented and adopted:

> That a committee of three be appointed by the President, to report at the next annual meeting of the Society, upon the question whether any changes are necessary in the classification and nomenclature employed in the vital statistics of Massachusetts, the same committee also to report what changes should be made, if any.

The President appointed Drs. C. F. Folsom, S. W. Abbott and F. W. Draper.

THE ANNUAL ORATION[1]

was delivered by Dr. F. W. Draper, of Boston.

The President then introduced the President-elect, Dr. J. C. White, of Boston.

THE ANNUAL DINNER

was served at one o'clock, there being about eight hundred Fellows present.

At the close of the dinner, the Anniversary Chairman, Dr. E. H. Bradford, spoke as follows:

The task of welcome is never a difficult one; it is certainly not so to-day, at this anniversary meeting of our Society.

If there is truth in the old Latin saying, that there is no solitude like the absence of friends, surely there can be no festival like their company. If fellowship and organization give strength to all human institutions, and friendship is the cement of societies, our annual dinner needs no justification or explanation.

We meet each year in obedience to an old and worthy custom, hoping to place ourselves under the influence of collected ideas in the current of fresh thought, seeking the mental stimulus for the coming year. Each time has its new suggestions and problems. The causation and the effects of influenza; the nomenclature of disease; the importance of bacteriological investigations; the value of various surgical interventions; the valuable work in the prevention of disease done by our State Board of Health; the improved methods in the study and teaching of pharmacy and of the sciences of ventilation and drainage; the chemical investigations of air and water; the relation of applied chemistry to cooking, — all these topics have been especially brought to our attention this year, and their importance and value demonstrated.

But now, before we separate, we come together in the character of Fellows, to meet old friends and make new ones, to exchange congratulations for the health and welfare of those we meet of our organizations, and to extend a hearty welcome to our honored guests.

The first sentiment at our annual meeting is one of loyalty to our Society, an organization that has a worthy history and a valuable influence. To-day I have the privilege of presenting to you our new leader, one whom we honor and trust, President White.

Dr. J. C. White spoke of the great advances made in medical education since he became a teacher, in 1858. The Harvard Medical School then offered as good opportunities for medical instruction as were to be found anywhere in the country, yet there were only six desks in the school for laboratory work in chemistry, while now there are two spacious laboratories provided. Anatomy was then taught during only four months in the year, and even a part of that time was taken up with physiology, while now the anatomical course covers two years, and a year is devoted to physiology.

Then only a fugitive glance was given to histology, while now there is a laboratory for its study, and embyology is also taught; then a small room in the Massachusetts General Hospital was the only place where autopsies could be seen, now there are two hospitals with amphitheatres specially provided for students.

A new department of bacteriology has been established. In the clinical branches there are twenty teachers instead of two or three. Midwifery was then studied by books and lectures, while now a student is required to take charge of at least six cases before he graduates.

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[1] See page 565 of the Journal.

To this list of studies ten or more special departments have been added, and the term of study has been extended to four full years. He had no doubt that this advance would exert an important influence, not only in this city, but in other large cities as well.

As our Society owes its charter to the Commonwealth, so we are never to forget our duty as citizens. We are honored to-day, not by the presence of His Excellency, the Governor, who was prevented by the press of official work from joining us, but by his worthy representative, the Surgeon-General of the State, Dr. Kittredge.

The **Surgeon-General**, in responding for the State, brought the cordial greeting of the Governor, who was not able to be present on account of the press of official business. He then spoke of the military service of the State, and outlined a proposed extension of the usefulness of the medical staff. The service is of great value to the young practitioner who enters it, teaching him obedience, promptness, activity and other things useful to him in his profession. There have been two ambulance corps established of fifteen men each, one stationed in Lowell and the other in Boston. The corps are to be enlarged to fifty men, and placed at the service of the community at large. The men are trained to render first aid in case of accidents, and are equipped with all needed appliances. The address of every officer and man will be registered, and in case of a railroad accident or other disaster this trained corps can be dispatched at once to the scene to afford immediate help.

It has been said that republics are ungrateful, and that we Americans should do well to kill off our ex-presidents. Perhaps there may be truth in this, but the Massachusetts Medical Society is organized not to kill but to cure, and we all are united and banded to secure health and welfare for our retiring president, Dr. Johnson.

Dr. Amos H. Johnson reviewed briefly the changes which have taken place in medical practice since the foundation of the Society, one hundred and eleven years ago; the abandonment of old methods, the era of therapeutic scepticism, and the advantages and disadvantages of modern pharmacy. This Society has taken an active part in the advance of medical science, and has counted among its members several men who have contributed much to medicine.

In introducing our next speaker, I am reminded of an anecdote. Two Boston girls were talking, and one asked the other what kind of a doctor her father was, a homœopath or an allopath. "Oh, he is not that kind of a doctor: he is another kind of a doctor; he is a mugwump."

I have pleasure in introducing to you the original mugwump, Dr. Wm. Everett.[1]

The medicine-man was once both a priest and a doctor. I, myself, have met a worthy gentleman who united in his own person at the same time the duties and responsibilities of both the homœopathic physician of the village and the pastor of the village church. I did not learn whether his theology was homœopathic. We members of the Massachusetts Medical Society are more modest, we are glad to accord honor and welcome to the chaplain of the day, Rev. John Cuckson.

Rev. John Cuckson spoke of the intimate relations existing between physicians and the clergy. Ignorant people should be protected from their own ignorance in medical matters by the State, which should see to it that any one professing to practice medicine is properly qualified.

We all of us respect lawyers, and fear them, when they put us upon the witness-stand and ask us questions in obscure anatomy and of the hypothetical case. You all remember the utterance of one of our honored and gifted members,

> "Strong is the moral blister that will draw,
> Laid on the conscience of the man of law."

That this is not true we shall learn from the Hon. Fred. Greenhalge.

Hon. Frederick Greenhalge, in speaking for the legal profession, entertained the Society with the humorous relations of the two professions. Seriously the medical profession is making advances on every hand. This great Society has a vital function, for it stands as a helper and sponsor for patient labor and investigation, and for the highest professional honor among physicians.

Two years ago the eyes of the medical world were "turned to Berlin." Delegates from all over the world went there, and addresses were made by great leaders in their departments. Billroth, in his address on surgery, referred to one American who had been foremost as a surgeon. We are fortunate in the presence of this surgeon, whose skill and achievements you all know, Dr. William T. Bull.

Dr. William T. Bull said that he had received his first inspirations in surgery, while an undergraduate in Harvard College, by watching the surgeons of the two Boston Hospitals. There have been established in Massachusetts, with the aid of the Society, some institutions which are superior to anything of the kind in New York. The coroner has been abolished, and his duties placed in the hands of men eminently qualified to discharge them; one of the best medical libraries in the country has been built up, and with it is combined a registry for nurses, which does much to lighten the labor of the physician; the Boston training-schools for nurses have taken a lead, which has made it necessary for New York on several occasions to send to Boston for assistance in founding a school. The requirement of four years in medical study is a movement forward which is being contemplated by Columbia College.

Dr. Holmes once said that performing an autopsy was like inspecting the remains of a fire-work the day after the Fourth of July. One of our honored guests has mastered this subject, and is now ready to speak of the Fourth of July itself, and of the day before. I take pleasure in presenting to you the new Professor of the Theory and Practice of Medicine, Dr. Fitz.[3]

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[1] See Dr. Everett's remarks, on page 598 of the Journal.

[3] See remarks of Dr. Fitz, on page 599 of the Journal.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION IN OBSTETRICS AND GYNECOLOGY.

DR. GEORGE HAVEN, SECRETARY.

Regular Meeting, Wednesday, March 9, 1892, Dr. C. M. Green in the chair.

Dr. Gertrude Van Pelt reported

A CASE OF PURULENT SALPINGITIS.[1]

Dr. Lena V. Ingraham: I have been very much interested in the case. I was present at the operation. I think the specimen does not give an idea of the amount of pus which was present. The sac was so adherent that it seemed probable that some of it was left. I should think fully a pint of very thick pus flowed out over the abdominal wound. We found two small abscesses next to the lumen of the tube near the abdominal end of the tube. On close examination you will see that there are a great many abscesses and it seemed to me that it was possible that there had been a number of foci of inflammation in the ovary from which a number of abscesses started and that the walls of some had broken down and become two or more large abscesses with some smaller ones whose walls are still intact.

Dr. Burrage read a paper on

THE ELECTRICAL TREATMENT OF PELVIC INFLAMMATION.[2]

Dr. Hare: Personally, I am a strong believer in electricity in these cases. I have had the privilege of seeing many cases, and I have hardly ever failed to see them improve. I have had this winter two cases which were very interesting to me. One was the case of a woman forty years of age, who had an operation upon the cervix and for the cure of hæmorrhoids, in May, 1890, and after that was never as well as before — was completely incapacitated from pursuing anything pleasurable in life. The first time I saw her she had on the right side a tube which could be readily felt, the ovary being about double its size and adherent. She had galvanism, in all, eight applications, after which the tenderness which at first was so much as to make examination very painful, had entirely gone and there was nothing whatever to be felt.

The second case dated from a year ago last November, at which time there was an attack of pelvic trouble on the left side which kept her in bed four months, and after getting up she never recovered to the extent that she could walk more than an eighth of a mile without resting and having severe pain. There was a mass on the left side, the size of a small lemon. She had the same treatment for about three months. She has gone home and nothing can be felt. There is no tenderness, and she walks one-half an hour to an hour without any pain whatever.

Dr. Reynolds: I am very glad that this subject should have been brought up, not only because it is one in which I have been for some time interested, but because it seems to me strange and a reproach to Boston that so powerful a therapeutic agent, and one which is in such general use all over the world, should have been as much neglected as I think it has been here. Personally, I have grown to believe it the most powerful of all the conservative minor gynecological methods. I think we notice at once, in Dr. Burrage's paper, what has seemed to me to be characteristic of the writings of all the authorities who advocate the use of electricity in gynecology: careful statements of dosage and of the different therapeutic effects of the different currents, and I think it will be noticed that those who have failed to obtain good results with electricity generally speak of it as electricity *per se.* Considering that there are six to eight different actions of the current, according as it is used, it is evident why one should have good results and another not.

In one particular my experience has differed a little from that of the reader and that is in preferring to use the positive pole in the vagina on account of its being less painful. There is no doubt that the positive pole is sedative, is less painful than the negative, but upon the other hand, the skin of the abdominal wall is more sensitive than the vagina, and it has been my experience that patients complain much more of pain when the positive pole is used internally, that is, when the painful negative pole is external. I prefer to use the negative current internally throughout unless the patient is somewhat profuse at her menstrual periods, or is otherwise losing blood. The effect of the negative current in increasing the flow of blood is as marked as that of the positive in decreasing it. If she is losing too much blood we must use the positive pole; otherwise I prefer the negative. I think a further distinction in the use of the current than I understood the reader to draw is to be made; it is in the careful distinction between the galvanic current of high tension and that of low. So far as I know that distinction has only been emphasized by Englemann. Personally I think it is an important one. I believe the use of the current of high tension concentrates the action of the electrical force on the tissues in immediate apposition to the electrode and the use of the current of low tension tends to disseminate it toward more distant tissues. For that reason where we use it for the dispersion of exudates I think it is important to work without a rheostat with large cells with small internal resistance, and to use every effort to decrease the resistance of the patient's body. I have been accustomed to use for an abdominal electrode what I think I very much prefer to the clay — that is the large woven-wire electrodes of Waitt and Bartlett covered by absorbent cotton and wet in warm water. It is not dirty, you can use a fresh surface for each patient, and as far as low resistance goes, I find that with these electrodes I can get a current of from 30 to 40 milliampères with six or seven bichromate cells.

I think it is important to distinguish in the character of the electrodes used. It is a matter of the most ordinary observation that a metallic electrode cauterizes the surface extensively, while a moist non-metallic pole does not cauterize. I believe that where the metallic electrode is used and extensive cauterizing effect is produced there is far less intrapolar effect on the more distant tissues. That point also was first made I think by Englemann and so far as one can judge from clinical experience I believe it is a strong point. The use of the non-metallic electrode within the uterus presents difficulties. The introduction is difficult except in a pretty patulous uterus, and I have not infrequently been compelled to use the metallic one because I could not without pain and bleeding introduce the cotton-wrapped applicator. Where that can be introduced I think it is of much more value for electrolysis. In vaginal applications there can be no question that the cotton-wrapped applicators which Dr. Burrage recommended are preferable.

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[1] See page 603 of the Journal.

[2] See page 600 of the Journal.

I think a good deal can often be gained by preceding the galvanic current by the faradic current of high tension for from one to two minutes using a very fine, long coil. That has seemed to me to very much lessen the pain and somewhat lessen the fatigue which often follows these applications, and in that connection I should like to emphasize my belief in what I do not hear Dr. Burrage refer to, the importance of making the patient lie down a considerable length of time after each application of the current. Most patients are considerably tired after the treatment. If they get up out of the chair and at once go home I think they are apt to feel badly worn out the rest of the day and often longer, to feel disgusted with the treatment and not get as much good from it. But if they rest for 15 to 20 minutes after the application they are apt to miss all that tired feeling, to feel, if anything, better through the day, come back with great readiness, and be benefited much more by the treatment.

It is going a little outside of the subject of the paper, but before sitting down I want to add to the general subject of electrical treatment my belief that the galvanic current furnishes by far the best method of treating endometritis and endocervicitis. The application of tincture of iodine, carbolic acid, etc., is very disappointing, and their intra-uterine use not altogether free from danger. There is always the bugbear of driving fluid into the tubes. That won't happen with the electrode. They are unsatisfactory also because the only surface that is opposed to their action is that of the superficial portion of the uterine mucous membrane. The crypts in which the inflammation lurks and which are the source of its resupply are not affected by these chemical agents. When the electrode is passed into the uterus it affects all the surfaces with which the intra-uterine secretions are in contact, by simple electrical conduction. It affects the bottom of the crypts about as much as the uterine surface between them. That is the theoretical ground for believing in its superior efficacy and practically it seems to me a much more satisfactory and hopeful method of treating these inflammations. It is outside of the paper to speak of the faradic current of low tension in subinvolution of the uterus and laxity of the ligaments, etc., but that I believe also to be of much importance.

Dr. Van Pelt: I am very much interested in this discussion because I have used this treatment considerably. I spent three winters with Dr. Apostoli, and have treated a number of cases at home. I believe very thoroughly in the application, and have had a great deal of success, I think, in cases that have not been benefited by the ordinary applications. I have not found the same difficulty in using the positive pole that Dr. Reynolds speaks of, and I have thought possibly it is because I use the clay electrode. The patients do not complain of pain over the abdomen. There is a point in connection with the electrodes that I would like to ask Dr. Burrage about, that is, the value of the clay on the outside of the vaginal electrode. I do not understand it.

Dr. Burrage: I think it is supposed to spread out the current better than absorbent cotton and prevent injury to the vagina. It is a little bit dirty, but if the clay is included in absorbent cotton and then in the gauze, there is not very much chance of its coming out. I dip the electrode into boiling water each time before applying, and it certainly acts better than coverings of absorbent cotton alone or chamois skin which I used before. With a current of 30 milliampères I have made a very considerable ulcer in the vagina on several occasions, using a chamois skin covered electrode.

Dr. Reynolds: I should like to state that for nearly two years I used the clay vaginal electrode prepared as Dr. Burrage has described, but for the last year I have used the cotton. The cotton is cleaner, its action has seemed to me to be in every way as satisfactory, and I have never made an eschar with it, though I once did with the clay.

Dr. Burrage: In reference to the point Dr. Reynolds brought up about using the positive pole in the vagina, I have found also that it does cause pain in the abdomen if you use the wire-gauze electrode of Waite and Bartlett. I have used that electrode a great deal but with low intensities. With the higher intensities I have been unable to use it because of the irritation of the skin of the abdomen. With the clay I have not found that there is any increase in the amount of pain complained of when using the positive pole.

In reference to the rheostat, I like it better than the collector, although I have used both. There is next to no danger of getting a shock with the rheostat or current controller, and with the collector there is some danger. Now and then one of the cells happens not to be working properly, and as the lever passes over that one there is a shock.

As regards the faradic current preceding the treatment I have not used it in that way, but I have often used it after the treatment to allay pain, and have found it of great service.

As to the matter of patients lying down, at a large out-patient clinic it is a difficult matter to bring about unless you have very commodious quarters. Patients are directed to sit down and rest awhile, but as a rule I think they wait very little. At my office I have them lie down. If they are sensitive I have them wait an hour or two before going away, particularly after the first few treatments.

Recent Literature.

A System of Gynecology. Based upon a translation from the French of Samuel Pozzi. Revised by Curtis M. Beebe, M.D., Chicago, Ill. New York: J. B. Flint & Co. 1892.

The value of the original work of Pozzi is attested by the fact that two translations of it should have appeared within a few months of each other. The present one, unfortunately, suffers by comparison with the one edited by Dr. Wells, inasmuch as it is not complete, either in respect to the text or the illustrations. We have no doubt that the most important parts have been retained, still it hardly seems fair to call this Pozzi's System of Gynecology, and by no word of preface to intimate that it is not given entire. The only possible ground on which it can commend itself to the profession is that it is somewhat cheaper than the superb two volume edition which we have reviewed earlier.

THE BOSTON

Medical and Surgical Journal.

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THE AMERICAN MEDICAL ASSOCIATION.

The forty-third annual meeting of the American Medical Association, held at Detroit last week, was as usual largely attended. About eleven hundred doctors from all parts of the country were on hand, and the hotel accommodations of Detroit were taxed to their utmost capacity. The extremely cordial injunction of Gen. R. A. Alger — lately a "dark horse" at Minneapolis — who, paraphrasing the hospitable Spaniards, in his address of welcome, said, "If any of the medical guests did not see what he wanted, he had only to send for it, and if he did see what he wanted, he was to take it," was of little comfort to the late comer.

The city of Detroit is charmingly situated, and everything was done by its inhabitants to make the time which could be taken from the business of the occasion pass pleasantly. Good weather, however, may be desired and deserved, but cannot be had to order. A succession of heavy showers and the mugginess of August are not conducive to activity, and are not what one counts upon in June. Notwithstanding this unexpected drawback, the fact that this was the third time the Association had met in Detroit indicates the favorable regard which its members have for that city.

The President, Dr. H. O. Marcy, addressed the Association upon "Evolution in Medicine." He referred in a spirit of liberality to schisms in medicine, and deprecated any manifestation of jealousy between the national medical societies of this great country. There is room for all the work which they all may desire to undertake. The evil of intemperance and the scourge of consumption were touched upon. The establishment of a national board of health with representation in the cabinet by a secretary of public health, was advocated. Reform in coroner's laws was recommended, and supervision of food supplies and civic hygiene were strongly urged. The relation of the Association to the medical profession in foreign countries received attention, and hearty co-operation in international congresses was suggested.

In General Session provision was made for the election from the Sections of a General Business Committee to facilitate the transaction of the Association's affairs and to minimize the loss of time in general debate. The duty of the General Business Committee will be to give especial attention to the interests of the Association, and to promote the welfare of the various Sections; to consider all matters of business referred to it by the Association, and report upon them at the earliest possible moment, when the Association may adopt or reject the report as it may deem best.

On the second day, in General Sessions, the meeting was convulsed by a report of the Judicial Council, declaring that Dr. W. W. Potter, of Buffalo, was ineligible as a member of the Board of Trustees on account of his connection with the New York State Medical Society. This is the outgrowth of the old trouble about the Code. A wordy rumpus arose, but what threatened for a time serious trouble was finally shelved by reference of the whole subject to a committee of five which is to confer with committees of the same number from the New York State Society and Association.

The address on Surgery was by Dr. J. B. Hamilton, on the General Principles of the Surgery of the Brain; and the address on General Medicine by Dr. A. L. Gihon, U. S. N., on Intellectual Progress in Medicine.

The Association wisely avoided Chicago, and selected Milwaukee as the next place of meeting.

THE FOUR-YEARS' COURSE AT THE HARVARD MEDICAL SCHOOL.

Something more than a year ago it was announced that the faculty of the Harvard Medical School had taken the important step of increasing the compulsory course of study from three years to four. Editorial reference was made in the Journal, May 28, 1891, to this change and to similar proposals which were then under consideration by the medical faculties of the University of Pennsylvania and of Columbia College. At that time the details of the new course at Harvard had not yet been arranged.

The change goes into actual operation in September of this year. A provisional announcement of the graded four-years' course of instruction, applicable to students entering the first class at that time, has now been issued.

General chemistry will be a requirement for admission on and after June, 1893. Medical Chemistry alone will be taught in the School. Students conditioned in general chemistry at the examination for admission will be furnished, in the School, during the first year, with opportunities for making up this condition.

Applicants for admission to the Medical School who shall have studied three years in recognized colleges technical or scientific schools, in which courses in anatomy, physiology, histology, and general chemistry are a part of the instruction, may be admitted to advanced standing provided they pass an examination in these subjects.

The Lawrence Scientific School at Cambridge has established a course in anatomy, physiology, and hygiene, the first two years of which are approved as a preparation for the four-years' graded course in medicine now offered.

In the fourth year, in addition to the regular work of the year, not less than three hours of examination in electives are obligatory. Students intending to elect dermatology, neurology, or gynecology in the fourth year need not pass an examination in these subjects at the end of the third year, provided their choice is made at the beginning of the second half of the third year. Students electing ophthalmology, otology, or orthopedics in the fourth year are obliged to pass only the two-hours' examination in these subjects at the end of the year. Only one hour of these two can count as an elective. Candidates for the degree who shall have served satisfactorily as internes in the Massachusetts General Hospital, Boston City Hospital, Carney Hospital, or Children's Hospital, for a period of not less than one year, may be exempt from examination in the electives of the fourth year.

The fees for the first three years remain as at present, two hundred dollars for each year, and the fee for the full year to all students entitled to be classified as fourth-year students will be one hundred dollars. These fees cover all school expenses, except a sum not exceeding $10 for anatomical and chemical material.

At the end of the four years of study the degree of Doctor of Medicine will be given to those students who have fulfilled its requirements. This degree *cum laude* will be conferred upon candidates who have obtained an average of over seventy-five per cent. in all the required examinations.

Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the advanced classes must pass an examination in the branches already pursued by the class to which they seek admission, and furnish a satisfactory certificate of time spent in medical studies. No student may advance with his class, or be admitted to advanced standing, until he has passed the required examinations in the studies of the previous year, or a majority of them; nor may he become a member of the third class, until he has passed all the examinations of the first, in addition to a majority of those of the second year; nor of the fourth class, until he has passed all of the examinations of the first and second, in addition to a majority of those of the third year.

Further explanations of the change are given on another page (Dr. Fitz's paper) of this issue. We do not doubt that the results, and those not remote, will justify the School in the courageous and unselfish forward step it has made in medical education, and that the lead which it has taken will be soon followed by other schools of the country.

MEDICAL NOTES.

Officers of the American Medical Association for the Ensuing Year. — President, Dr. Hunter McGuire, of Richmond, Va.; First Vice-President, Dr. H. O. Walker, of Detroit; Second Vice-President, Dr. H. Brown, of Kentucky; Third Vice-President, Dr. Henry Janes, of Vermont; Fourth Vice-President, Dr. Jesse Hawes, of Greeley, Col.; Treasurer, Dr. R. J. Dunglison, of Philadelphia; Secretary, Dr. W. B. Atkinson, of Philadelphia; Assistant Secretary, Dr. Montgomery; Librarian, Dr. George W. Webster, of Chicago. To fill vacancies on the Board of Trustees: Dr. Alonzo Garcelon, of Lewiston, Me.; Dr. Leartus Connor, of Detroit; Dr. Perry H. Millard, of Minnesota, and Dr. Patterson, of Washington. Members of the Judicial Council: Dr. N. S. Davis, of Chicago; Dr. John Morris, of Baltimore; Dr. H. D. Didama, of New York State; Dr. John B. Roberts, of Philadelphia; Dr. A. M. Emmert, of Iowa; Dr. W. T. Briggs, of Nashville, Tenn.; Dr. C. W. Voorhes, of Coldwater, Mich.; Dr. W. E. B. Davis, of Rome, Ga.; Dr. A. Morgan Cartledge, of Louisville.

Section on Surgery and Anatomy. — The following were elected officers of this Section: Dr. James T. Jelks, of Hot Springs, Ark., Chairman; Dr. Ernest T. Tappey, of Detroit, Mich., Vice-chairman; Dr. Liston Montgomery, of Chicago, Secretary.

Section of General Medicine. — The officers chosen are as follows: Chairman, Dr. Charles Stockton, Buffalo, N. Y.; Secretary, Dr. Charles Webster, Chicago; Executive Committee, Drs. Hobart A. Hare, Philadelphia, Isaac Atkinson, Baltimore, and N. S. Davis, Jr., Chicago.

Drunkenness as a Virtue. — Dr. George Foy, in a letter to the *London Medical Press*, refers to a book published in London, in 1723, as tending to show that the habits of the general public have changed very much during the last century and a half. The title of this book is as follows: "Ebrietatis Encomium, or the Praise of Drunkenness; wherein is authentically and most evidently proved the necessity of frequently getting drunk; and that the practice of getting drunk is most ancient, primitive and catholic. Confirmed by the example of Heathens, Turks, Infidels, Primitive Christians, Saints, Popes, Bishops, Doctors, Philosophers, Poets, Freemasons and other men of learning in all ages. By Boniface Oinophilus de Monte Fiascone, A. B. C."

NEW ENGLAND.

Death-Rate in Boston for May. — There were 895 deaths reported in May making the death-rate 23.39. The number of deaths reported as due to consumption was 129; diphtheria, 39; scarlet fever, 34; typhoid fever, 9; pneumonia, 105.

Boston Asylums. — The Suffolk County Grand Jury have presented a report to the Judge of the Superior Court on the subject of some of the public institutions of Boston. A committee of the jury visited the Insane Asylums at South Boston, Austin Farm and the Charlestown Almshouse. They found and commented upon the same bad conditions which have previously been noticed by the special committee appointed by the Mayor, an account of which has been published in a previous number of the Journal.

The Convalescent Home of the Children's Hospital. — The new Home at Wellesley Hills was dedicated on the 16th by the Rt. Rev. Phillips Brooks. A large number of persons interested in the Home were present at the ceremony.

The Massachusetts Registration Report for 1891 will be edited by Dr. F. A. Harris. For several years these reports have been edited by the secretary of the State Board of Health.

Christian Science in Beverly. — A good deal of excitement appears to have been caused in Beverly, Mass., by the death of three children who were said to have been under the medical care of Christian Scientists. The first two were believed to have died of diphtheria; in the third case, a death certificate, in which the cause of death was given as heart-failure, was not accepted by the Board of Health. The Board has announced that hereafter heart-failure will not be accepted as a cause of death.

Rabies in Lynn. — One of the men bitten by a dog supposed to be mad, an account of which appeared in the Journal of May 19th, has died. A portion of the brain and spinal cord have been sent to the Harvard Medical School for examination.

The Maine Medical Association met in Portland on June 9th. The following officers were elected: President, Dr. Alfred Mitchell of Brunswick; Secretary, Dr. Wm. Cammett, of Portland.

NEW YORK.

Columbia College. — At the one hundred and thirty-eighth annual commencement of Columbia College, held at the Carnegie Music Hall, June 8th, there were 116 graduates in the Medical Department. The biennial prize of $500, of the alumni of the school, for the best essay embodying the results of original investigation, was awarded to Dr. Wm. Hallett Parke, of New York, and two $500 annual fellowships, also provided by the Alumni Association, to Drs. Parke and Alexander Lambert.

Miscellany.

THERAPEUTIC NOTES.

Anti-septol[1] (cinchonine iodosulphate) represents one of the various recent attempts to obtain an efficient substitute for iodoform without the objectionable features of the latter. It is odorless, and is made by the addition of a solution of iodine and iodide of potassium to sulphate of cinchonine. Its use is largely confined to continental Europe.

Antinervin[2] was introduced into medicine a couple of years ago as being analytically salicylbromanilid, and similar in its effects to acetanilid. Its recommended efficiency in diabetes has not been verified, and we hear little of it professionally. From a careful examination, it is now concluded to consist of a mixture of 50 parts acetanilid, 25 parts salicylic acid, and 25 parts of bromide of ammonium.

Correspondence.

LETTER FROM DETROIT.
AMERICAN MEDICAL ASSOCIATION MEETING.

Detroit, June 11, 1892.

Mr. Editor.— During the past week it has been impossible to walk the streets of Detroit without every moment running against a man with a lapel button bearing the cabalistic device, "A. M. A., '92, Detroit." There were delegates everywhere. The number registered was between one thousand and eleven hundred. Many were accompanied by their wives, so that the total number probably reached fifteen hundred. The quantity of literary material provided was simply overwhelming. There were three hundred and fifteen papers on the programme, so that every third man went to Detroit armed with a paper. In five of the sections the papers prepared for the delectation of the members ranged between forty and forty-seven, and in some of the sections nearly the entire number was read. The section on State Medicine enjoys the distinction of having had the least number, only eight titles appearing on the programme.

The arrangements for the meeting were all that could be desired. The committee had secured the Opera House for the general sessions and meeting-places for the sections were provided in close proximity. The stage of the Opera House had been handsomely decorated with palms, hydrangeas and other flowering plants, behind which sat ensconced the genial secretary, Dr. William B. Atkinson, who has every detail of the Association work at his fingers' ends.

The sections began their morning sessions at nine o'clock and continued until eleven o'clock, when they were expected to adjourn to meet in general session, but some of the sections seemed to take more interest in their scientific work than in the medico-political work of the Association, continuing their meetings long after the hour of adjournment. The afternoon sessions were held from three to six o'clock. Several of the sections had exhausted their programmes by Thursday evening, while others were still at work on Friday afternoon. The section meetings were well-attended during the first few days, but many of the members started for home Thursday evening or Friday morning, so that the last day's sessions showed the presence of only the more enthusiastic or more conscientious members. An immense amount of work was accomplished, and the man who went to Detroit with the idea of having an easy time, made a mistake. The work began at nine A. M., and continued with little interruption until six P. M., and every other available hour was taken up with the meeting of delegations, committees and the like. Some confusion was caused by the variations in the time as shown by the different watches. The watches of the western men showed central time, while those of the eastern delegates showed eastern time an hour later, while the meetings were regulated by Detroit city time which was about half an hour faster than the one and half an hour slower than the other.

A very pleasant incident in connection with the opening exercises was the presentation to the president of the Association by Dr. H. O. Walker, of Detroit, of a gavel fashioned from the wood of the celebrated Pontiac tree.

Dr. Marcy won for himself distinction as a presiding officer. There were times when the Association seemed in danger of being capsized through the ill-balanced efforts of some of the members. Most of the storms or more correctly speaking, whirlwinds, arose in connection with questions relating to the status of delegates from the New York State Medical Society. The first occasion was when the report of the Judicial Council was presented declaring that the New York State Medical Society and the Medical Society of Erie County, New York, were not entitled to representation in the Association. There then arose a great hubbub, motions and amendments were hurled at the president with bewildering confusion, while several gentlemen with stentorian lungs were trying to express their views on the subject. An attempt was made to have the report referred back to the council, but the president decided that the report of the council was final, and in this decision he was sustained by the vote of the Association. Later on in the session the question was asked as to the status of the permanent members of the Association who were also members of the Societies mentioned above. This gave rise to another effort to graft upon the Association methods that would do credit to a political ward meeting or to a convention for the nomination of a president. In the end a conclusion was reached which seemed to give universal satisfaction. This provides for a committee of conference consisting of members from the American Medical Association, the New York State Medical Society and the New York State Medical Association, this committee to report at the next annual meeting; to this was added the proviso that in the meantime the permanent members of the Association who were also members of the Societies in dispute, but who had registered in good faith, should be entitled to the rights of permanent members.

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[1] Squibbs Ephemeris.

[2] Squibbs Ephemeris.

It was then thought that the matter was ended, but the next day one of the gentlemen who had advocated the passage of the resolutions put his foot in it by calling for their reading. It was then found that the names of certain gentlemen from New York had been incorporated in the proviso. These names had not been read when the resolution was presented and voted upon. This gave rise to some pretty positive remarks, in which the insertion of the names after the adoption of the resolution was characterized as falsification of the record. Dr. Gihon who had presented the proviso referred to, attempted to gain the floor to reply, and a personal discussion was only prevented by the President insisting that as the hour had arrived for the delivery of the Address on General Medicine, Dr. Gihon should take the floor and address the Association on the subject of *Medicine.*

The social features of the meeting were extremely enjoyable, every effort being made by the profession of Detroit to make the visitors feel that they were welcome. On Tuesday evening a reception was tendered the members of the Association and their ladies at the Light Infantry Armory by the profession of the city. This was well attended and thoroughly enjoyed. On Wednesday evening there were receptions at the residences of the Hon. H. S. Pingree, Mayor of Detroit, Gen. R. A. Alger, Mr. George S. Davis and Mr. Frederick K. Stearns. During the day the ladies were entertained with carriage rides around Belle Isle Park and with yacht rides on the river.

Thursday afternoon the members of the Association and the ladies accompanying them, spent the afternoon in an excursion on the Detroit River and Lake St. Clair, at the invitation of the local profession. Two river steamers were lashed together, and from fifteen hundred to two thousand persons enjoyed the trip, which lasted four hours. Entertainment, solid, liquid and musical, was provided on board; and by the time the boat reached the wharf, there was little left but the musicians, while a stack of cases of empty Apollinaris and champagne bottles stood a silent witness of the appreciation of the party of the good things provided for their enjoyment.

The meeting of 1892 will long be remembered by the Association, as much for the generous manner in which it was received as for the extent and quality of its scientific work.

METEOROLOGICAL RECORD,

For the week ending June 4, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...29	30.05	64	76	52	43	85	64	W.	S.	4	15	C.	O.	
M..30	30.13	64	65	62	75	85	80	S.W.	S.	21	10	O.	O.	
T..31	30.41	69	77	61	81	85	83	S.	S.E.	6	2	F.	C.	
W. 1	30.16	64	88	60	88	71	80	S.W.	S.W.	10	20	F.	C.	
T.. 2	29.56	80	91	68	67	58	62	S.W.	W.	17	10	C.	F.	
F.. 3	30.11	66	72	60	79	59	69	N.	S.E.	15	6	R.	O.	.33
S.. 4	30.43	55	67	58	67	58	62	E.	S.E.	9	6	O.	O.	
☞	30.12	67	76	60	71	72	71			12	9			.04

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 4, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,515,301	868	374	20.10	20.41	1.69	4.29	3.38
Chicago . . .	1,099,850	428	205	11.73	20.79	1.53	5.94	2.70
Philadelphia .	1,046,964	362	117	14.10	13.20	2.40	4.20	2.10
Brooklyn . .	806,343	329	136	13.67	18.04	2.48	4.34	2.17
St. Louis . . .	451,770	150	46	14.74	6.03	4.02	.67	2.68
Boston . . .	448,477	209	61	8.10	11.25	.45	3.15	1.80
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	—	—	—	—	—	—	—
Cleveland . .	262,000	102	54	17.64	3.92	6.86	.98	2.94
Pittsburg . .	249,000	106	53	26.32	10.34	7.52	8.46	2.82
Milwaukee . .	240,000	—	—	—	—	—	—	—
Washington .	230,392	94	24	6.36	12.72	3.18	—	—
Nashville . .	76,168	26	10	19.25	7.70	11.55	—	—
Charleston . .	65,165	34	16	41.16	—	41.16	—	—
Portland . . .	36,425	12	5	—	—	—	—	—
Worcester . .	84,655	28	12	3.57	10.71	—	—	3.57
Lowell . . .	77,696	34	6	14.70	5.88	5.88	—	—
Cambridge . .	70,028	34	11	—	14.70	—	—	—
Lynn	55,727	25	6	24.00	20.00	—	12.00	—
Lawrence . .	44,654	19	9	26.30	—	5.26	5.26	—
Springfield . .	44,179	16	0	6.25	6 25	—	—	—
New Bedford .	40,733	7	2	—	42.84	—	—	—
Holyoke . . .	35,637	—	—	—	—	—	—	—
Salem	30,801	12	3	8.33	8.33	—	—	—
Haverhill . .	27,412	9	4	—	—	—	—	—
Brockton . .	27,294	—	—	—	—	—	—	—
Taunton . . .	25,445	3	1	—	—	—	—	—
Newton . . .	24,379	8	4	25.00	—	—	—	—
Malden . . .	23,031	8	4	37.50	—	—	12.50	12.50
Fitchburg . .	22,037	14	5	—	—	—	—	—
Waltham . .	18,707	5	0	—	20.00	—	—	—
Pittsfield . .	17,281	3	3	—	—	—	—	—
Quincy . . .	16,723	6	0	—	—	—	—	—
Northampton .	14,990	3	0	—	—	—	—	—
Newburyport .	13,947	3	0	—	—	—	—	—
Brookline . .	12,103	1	0	—	—	—	—	—
Medford . . .	11,079	3	0	—	33.33	—	-	—
Everett . . .	11,068	9	4	—	—	—	—	—
Hyde Park . .	10,193	1	—	—	—	—	—	—
Peabody . . .	10,158	1	0	—	—	—	—	—

Deaths reported 2,971: under five years of age 1,175; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 424, acute lung diseases 385, consumption 334, diphtheria and croup 111, diarrhœal diseases 73, scarlet fever 68, measles 65, typhoid fever 45, cerebro-spinal meningitis 19, whooping-cough 13, erysipelas 13, malarial fever 10, small-pox 5, puerperal fever 2.

From measles New York 38, Brooklyn 12, Philadelphia 5, Chicago 4, Cleveland 3, Boston, Pittsburgh and Newton 1 each. From typhoid fever Chicago 14, Philadelphia 7, St. Louis and Cleveland 4 each, Pittsburgh 5, Boston 3, New York 2, Washington, Nashville, Lowell, Lynn, Salem and Newton 1 each. From cerebro-spinal meningitis New York 7, Chicago and Lawrence 3 each, Lynn 2, Boston, Cleveland, Washington and Malden 1 each. From whooping-cough New York, Chicago, Philadelphia and Brooklyn 2 each, St. Louis, Boston, Pittsburgh, Washington and Nashville 1 each. From erysipelas New York and St. Louis 4 each, Boston 3, Philadelphia and Lowell 1 each. From malarial fever New York 5, Brooklyn 3, Cleveland and Pittsburgh 1 each. From small-pox New York 4, Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending May 28th, the death-rate was 19.4. Deaths reported 3,797: acute diseases of the respiratory organs (London) 285, measles 203, whooping-cough 113, diphtheria 51, scarlet fever 49, diarrhœa 44, small-pox (London) 1.

The death-rates ranged from 8.7 in Derby to 27.5 in Sunderland; Birmingham 23.7, Bradford 17.1, Cardiff 18.0, Croydon 13.8, Hull 18.6, Leeds 15 6, Leicester 22.3, Liverpool 24.8, London 18.8, Manchester 25.2, Newcastle-on-Tyne 18.7, Nottingham 14.8, Plymouth 17.1, Preston 23.4, Swansea 19.2, Wolverhampton 25.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 4, 1892, TO JUNE 10, 1892.

APPOINTMENT.

To be chief of the Record and Pension Office of the War Department, with the rank of Colonel, in accordance with the Act of May 9, 1892, Major Fred C. Ainsworth, surgeon, May 27, 1892, to fill an original vacancy.

COMMISSION VACATED BY NEW APPOINTMENT.

Colonel Fred C. Ainsworth, chief of the Record and Pension Office, his commission is surgeon, with the rank of Major, June 1, 1892.

Leave of absence for four months, to take effect after June 30, 1892, is granted Colonel Anthony Heger, surgeon, U. S. A.

The following assignments to duty of assistant surgeons, U. S. A., recently appointed, are ordered:

First-Lieut. Champe C. McCullock, Jr, will proceed from Charlottesville, Va., to Fort Sam Houston, Texas, and report in person to the commanding officer of that post for duty.

First-Lieut. Frederick P. Reynolds, will proceed from Elmira, N. Y., to Fort Monroe, Va., and report in person to the commanding officer of that post for duty.

First-Lieut. Isaac P. Ware, will proceed from North Anson, Me., to Fort Douglas, Utah Territory, and report in person to the commanding officer of that post for duty.

First-Lieut. Robert S. Woodson, now at Fort McPherson, Ga., will report in person to the commanding officer of that post for duty.

First-Lieut. Madison M. Brewer, is relieved from temporary duty in the Surgeon-General's Office, Washington, D. C., and will proceed to David's Island, N. Y., and report in person to the commanding officer of that post for duty.

First-Lieut. George D. Deshon, now at Columbus Barracks, Ohio, will report in person to the commanding officer of that post for duty.

First-Lieut. Samuel R Dunlop, assistant surgeon, U. S. A., is relieved from duty at Fort Supply, Indian Territory, and will report in person to the commanding officer, Camp Pena Colorado, Texas, for duty at that station, relieving Major John O. Skinner, surgeon, U. S. A. Major Skinner, upon being relieved by First-Lieut. Dunlop, will rejoin his proper station, Fort Clark, Texas.

Captain William B. Davis, assistant surgeon, is relieved from duty at Fort Clark, Texas, to take effect upon the return of Major Skinner to that post, and will report in person to the commanding officer, Fort Sam Houston, Texas, for duty.

Major Edward B. Moseley, surgeon, is relieved from duty at Fort Sam Houston, Texas, to take effect upon the arrival at that post of Captain Davis, and will report in person to the attending surgeon, Washington, D. C., for duty in his office.

Leave of absence is granted Captain Freeman V. Walker, assistant surgeon, U. S. A , Fort D. A. Russell, Wyoming, until June 30th, to take effect on arrival at Fort D. A. Russell of Captain Julian M. Cabell, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 11, 1892.

E. R. Stilt, assistant surgeon, detached from Naval Hospital, Philadelphia, and to examination for promotion, and then to Bureau Medicine and Surgery.

T. B. Bailey, assistant surgeon, detached from Receiving-ship "Minnesota" and to examination for promotion, and then to Naval Hospital, Philadelphia, Pa.

J. C. Byrnes, passed assistant surgeon, ordered to special duty at Norfolk and Portsmouth, Va.

H. D. Wilson, assistant surgeon, ordered to the Receiving-ship "Minnesota."

G. B. Wilson, passed assistant surgeon, ordered to temporary duty at Naval Hospital, Chelsea, Mass.

INTERNATIONAL DERMATOLOGICAL CONGRESS IN VIENNA.

The second meeting of the International Dermatological Congress will be held in Vienna from the 5th to the 10th of September, 1892.

Many of the most distinguished representatives of dermatology and syphilography from all countries have promised to present papers and the indications are that the meeting will be a great success from a scientific standpoint.

The Committee on Organization, through the President, Professor Kaposi, has extended a cordial invitation to the members of the American Dermatological Association and of the New York Dermatological Society and others interested in dermatology in this country to be present.

The membership fee (five dollars) should be sent with titles of papers intended for presentation, to the Secretary for North America, Dr. Prince A. Morrow, 66 West 40th Street, New York, or to the Secretary-general of the Congress, Dr. Gustav Riehl, Wien 1-20, Bellaria Strasse 12.

BRITISH MEDICAL ASSOCIATION.

The sixtieth annual meeting of the Association will be held at Nottingham on Tuesday, Wednesday, Thursday and Friday, July 26, 27, 28 and 29, 1892.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

The ninth annual meeting will be held at Richfield Springs, N. Y., June 23, 24 and 25, 1892.

Several delightful excursions are arranged for members and their families who desire to see this picturesque country. Ample accommodations will be provided for members and their families at the Springs House, for the nominal charge of two dollars per day.

Willis E. Ford, M.D., Utica, N. Y., *President.*
J. B. Walker, M.D., Philadelphia, *Secretary and Treasurer.*

APPOINTMENT.

William Henry Howell, Ph.D., M.D., of the University of Michigan, has been appointed Associate Professor of Physiology in the Harvard Medical School.

RECENT DEATHS.

William R. Birdsall, M.D., died in New York, June 7th, aged forty years. He graduated in the University of Michigan and from the College of Physicians and Surgeons, New York, in 1887. He was for several years Professor of Nervous and Mental Diseases in the Woman's Medical College, and was President of the New York Medical Neurological Society in 1885–86. He was a member of several societies, and the author of several papers on nervous diseases.

Philip E. Donlin, M.D., died in New York, June 12th, aged forty-three years. He graduated from the University of New York in 1870. He was made coroner's physician in 1883, and has been re-appointed by each successive coroner.

Theodor Meynert, M.D., Professor of Mental and Nervous Diseases in the University of Vienna, died May 30th, aged fifty-nine.

Cesare Federici, M.D., Professor of Clinical Medicine at Florence, died May 29th, aged fifty-four years.

BOOKS AND PAMPHLETS RECEIVED.

Medical Education and Legislation. By Geo. J. Engelman, M.D., St. Louis. Reprint. 1892.

Myelitis in a Case of Incipient Posterior Spinal Sclerosis. By J. T. Eskridge, M.D. Reprint. 1892.

Nephrectomy for Calculus Pyelitis. By W. W. Keen, M.D., and David D. Stewart, M.D. Reprint. 1892.

The Etiology, Diagnosis and Treatment of the Prevalent Epidemic of Quackery. By George M. Gould, M.D., of Philadelphia. Reprint. 1892.

Cystic Degeneration of the Muscular Fibres of the Heart; A form of disease hitherto undescribed. By Arthur V. Meigs, M.D. Reprint. 1892.

Original Articles.

CASE OF ALLEGED NAPHTHA POISONING IN A RUBBER FACTORY, WITH AN INQUIRY INTO THE EFFECTS OF THE INHALATION OF NAPHTHA VAPOR.[1]

BY R. H. CHITTENDEN,
Professor of Physiological Chemistry in Yale University,
AND JOHN W. FARLOW, M.D., BOSTON.

Michael Kirby, about thirty years of age and weighing one hundred and sixty pounds, whose previous history is not well established, but who was considered healthy and not a drinker, while engaged in cleaning out a churn containing a mixture of rubber and naphtha was found dead in the churn at 2 P. M., although he was seen alive and apparently well about five or ten minutes before. He was removed from the churn and a doctor summoned, who pronounced it death from naphtha poisoning. No autopsy was held.

The churn, open at the top, was five feet one and one-half inches deep, and three and one-half feet in diameter, its capacity being about forty-eight cubic feet. In this receptacle was placed a mixture of rubber, whiting and very little sulphur with considerable naphtha, the whole being agitated by paddles which revolved in the churn. In the present case, the paddles for some reason stopped revolving, and it was decided to clean out the churn in order to learn the cause of the trouble. A trowel was found clogging the paddles, that Kirby had presumably let fall into the mixture. This was on September 4th, and Kirby was at once directed to clean the churn. As is customary in such cases, he drew off all that he could, namely, the more fluid portion, then got into the churn and baled out the rest. No trouble was experienced from this. The work was resumed the two following days, and on September 7th he was told to finish it. There was then about three-quarters of an inch of the compound in the bottom of the churn, although it was nearly dried out, that is, there was little or no naphtha in it; and it was while he was at work on this, after his dinner, that he was found dead. It was not necessary for him to have his head nearer than arm's length from the bottom of the churn.

Very soon after this, two men got into the churn and remained about the same length of time that Kirby did after he was last seen alive, and they felt no ill effects from it. A week later, a man got in and finished cleaning it, and he, likewise, experienced no ill effects. Later, a man got into it when it was half full of "rubber stock," and worked there for half an hour. He did not notice the naphtha any more than he did when he was in the covering-room, where most of the men work.

The churn-room is 24¼ feet long, 15 feet 11 inches wide, and 12½ feet high, and contains 4,650 cubic feet. It has five large windows each 5 feet 5 inches wide and 7 feet 10½ inches high, two on the south side and three on the west. On the east is a door, 6 feet 9½ inches high and 2 feet 11½ inches wide, opening into a passage-way which leads to the outer air, the passage being 3 feet 10 inches wide and 13 feet 8 inches long. Huxley, in his "Elementary Physiology," page 100, says, "to be supplied with respiratory air in a fair state of purity, every man ought to have at least 800 cubic feet of space to himself, and that space ought to be freely accessible by direct or indirect channels to the atmosphere." The churn-room contained nearly six times the space needed for one man.

The churn was on the east side of the room on a raised platform two feet three inches from the door-way. The top of the churn was five feet eleven inches below the ceiling and three inches below the top of the door-way, hence there was ample opportunity for circulation of air between the top of the churn and the ceiling, aided by the close proximity to the door-way.

At the time of Kirby's death, the door on the east side of the churn-room was wide open and also the outside door at the end of the passage; a south window was open six inches top and bottom, while another south window had a pane gone and one west window nearly opposite the door was down six inches from the top.

According to the weather report of that day, the wind averaged ten miles per hour from the north-east. The highest temperature was 77° F. in the afternoon. The humidity was high, 89 per cent. at 8 A. M., and 92 per cent. at 3 P. M. There was no rain.

In a room of the given size, with free access, by means of open doors and windows, to a wind blowing ten miles an hour, there could not have been any accumulation of vapor even if considerable naphtha had been exposed to evaporation. On the contrary, the evaporation of naphtha from the rubber stock in the churn at the time of the fatal accident must have been comparatively slow. First, because the amount of residual stock was small; secondly, because the residual stock could not have contained more than 20 to 30 per cent. of naphtha; and, thirdly, because the naphtha which remained in the stock was only slowly volatile.

The more fluid portion of the contents of the churn was drawn off on the afternoon of September 4th; on the 5th and 6th, more of the thick mixture was removed; and on the 7th, there was only a small layer of residual stock. During all this time evaporation was going on; that is, the dangerous element in the mixture was gradually diminishing during the three days in which Kirby worked without detriment, until finally a residue was left from which evaporation of naphtha took place very slowly.

This is plainly indicated by the following experiment: 128 grammes of rubber stock from the bottom of a churn, after standing three days, were placed in a suitable retort, and the naphtha distilled and collected. It was heated by contact with boiling water for five hours, and as a result 25.5 grammes or 22.2 per cent. of naphtha distilled over; on raising the temperature still higher, to above 200° C., 12.9 grammes or 10 per cent. more naphtha was obtained, making a total of 32.2 per cent. of naphtha.

Naphtha is a volatile fluid, but when in contact with rubber and other material making up the rubber stock it is apparently held tenaciously by this material, and its evaporation rendered a long and slow operation. In the experiment quoted above only a small quantity of material was taken and the mixture was heated for hours in boiling water, under conditions by which free naphtha would have been quickly evaporated off, yet it required over six hours continuous heating, a portion of the time at a temperature more than three times above the boiling point of naphtha before all of the latter could be removed from the rubber mixture.

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[1] Read before the Boston Society for Medical Improvement, March 14, 1892.

Further, the evaporation of the naphtha was throughout the entire experiment a gradual process; at no time did a rapid distillation occur. Other experiments leading to the same result are as follows:

Two specimens of rubber stock, of the same thickness and consistency as that in the churn at the time of Kirby's death, were placed in sealed jars, and one labelled "No. 1, February 16th," the other, "No. 2, February 17th"; 524 grammes of the mixture from No. 1 yielded, by long-continued distillation, 144 grammes of naphtha or 27.4 per cent., while 641 grammes from No. 2 gave only 133 grammes of naphtha or 20.7 per cent as a result of several hours' heating at a high temperature. These last two experiments confirm the preceding in showing that the naphtha held in the churn stock does not evaporate readily as free naphtha would, but is held tenaciously by the rubber mixture: further, the experiments show that there had evapoated 6.7 per cent. of naphtha as a result of one day's exposure of the rubber stock in the churn.

These results lead to the conclusion that on September 5th and 6th Kirby must have been exposed to a more dangerous atmosphere, or at least one more charged with naphtha, than on September 7th, when there was a much smaller amount of stock, and this contained a much smaller proportion of naphtha.

Let us now look at the nature of the naphtha in the churn. Naphtha is made up of a number of closely related hydrocarbons from the distillation of petroleum. These hydrocarbons are of low specific gravity, that is, are lighter than water and have a comparatively low boiling point, the naphtha representing the lighter and more volatile portions of petroleum, in distinction, for example, from kerosene and other higher boiling products. Commercially, naphtha and benzine are essentially the same, but naphtha, or as it is sometimes called, petroleum ether, is, strictly speaking, a lower boiling product and hence more volatile than benzine. But, as a matter of fact, the naphtha used so extensively for manufacturing purposes in this country is a mixture of naphtha No. 0, No. 1, No. 2 and benzine.

The naphtha used in the factory where Kirby was employed was examined, and it was found to have a specific gravity of 0.681, and contained about 37 per cent. by volume of hydrocarbons with a boiling point below 70° C.; in other words, 37 per cent. of the naphtha was volatile at a temperature of 70° C. The great difference in volatility between that portion of the naphtha distilling below 70° C. and that portion boiling or distilling above 70° C. — a point of considerable significance in this case — is made strikingly manifest by the following experiment: Two equal portions of naphtha, one the fraction distilling below 70° C., and the other the fraction distilling above 70° C., were exposed to the air, side by side in uncovered dishes at the ordinary room temperature, for six hours. As a result, it was found in measuring the naphtha remaining in the two dishes, that of the portion distilling below 70° C., 25 per cent. had evaporated, while of the portion distilling above 70° C., only 8.5 per cent. had evaporated. Now, the more volatile portions of naphtha are obviously the most dangerous. In all cases where persons are exposed to naphtha vapors the lower boiling hydrocarbons would be the first to volatilize, and their action would naturally be the most pronounced, and under ordinary circumstances the larger the proportion of these more volatile products, the greater would be the danger from naphtha fumes. Dragendorff, Professor of Toxicology in Russia, says, "The higher boiling constituents of petroleum are hardly to be classed with poisons. There are cases where they have been borne in large quantities without harm."

A sample of rubber stock from the bottom of a churn of the same consistency and character as that in the churn at the time of Kirby's death, yielded only two per cent. of naphtha boiling below 70° C. In other words, the exposure of naphtha in an open churn for two or three days, is followed by a fairly rapid evaporation of the most volatile hydrocarbons, leaving a residue in which the heavier hydrocarbons predominate. Hence, it is obvious that the naphtha which remained in the residue of the churn stock Kirby was occupied in removing, must have been nearly or entirely free from those more volatile and dangerous portions of the naphtha which distil below 70° C.

Let us now consider the toxic action of naphtha as indicated by the result of experiments with animals. Over twenty distinct experiments were tried with rabbits and dogs, and where any toxic effect was produced the symptoms were essentially the same in every case. The animal was placed in a large can open at the top; on the bottom of the can was placed a quantity of naphtha, the animal sitting or standing on an inverted wire sieve, which raised him a few inches from the naphtha and kept him out of it, although allowing free passage of the vapors. At times, the top of the can was covered with wire netting to prevent the animal from jumping out. There was no rubber to retard the evaporation and the naphtha (76° Baumé) contained the full amount of the more volatile hydrocarbons.

Restlessness was the first symptom noticeable and in no experiment did the action of the naphtha at first extend to such a point that the animal could not jump out of the can if allowed to do so. In fact, the animal always attempted to leap out. On being restrained, it gradually became weaker and ceased to attempt escape, the teeth grinding together and then, sooner or later, there invariably came a point when the animal fell over and was attacked by violent convulsions, the body being curved or arched, the legs rigid, the facial muscles drawn back, exposing the teeth and jaws, the mouth stretched open and the legs often quivering with convulsive tremors. On being removed from the can after a minute or two, the animal always recovered after a short time, say thirty minutes. In no case were these attacks followed by death; weakness remained apparent for a short time, but the animals soon hopped about as usual. There was apparently no true anæsthesia, no direct narcotic effect produced, no tendency to fall into a stupor and sink away into a quiet death, but always, at the end, there came the terrible convulsion of marked opisthotonic character, shrill cries and effects which point plainly to spinal action, or to irritant action on the motor centres in the brain.

In Kirby's case there was no evidence of a violent, convulsive death, no clinched fingers, staring eyes, distorted features, and he made no outcry. With rabbits, when the fumes of the naphtha have nearly taken possession of the animal, he instinctively raises his head above the top of the can and by breathing a little of the purer air above obtains a new lease of life.

Animals do not quickly succumb to the action of naphtha fumes, even when they are exposed to comparatively large quantities of free naphtha for some time. This point is well illustrated by the following experiment: A large dog, weighing twenty-eight pounds, was confined in a wooden box or cage lined with galvanized iron, two feet wide, three feet four inches long and two feet eight inches high; the bottom on which the dog stood was of heavy wire netting; under this was a tightly fitting iron tray, the bottom of which was five inches below the netting. The top of the tray was of wire netting and during the experiment was partially closed by towels laid over it.

The dog was placed in the cage at 9.30 A. M., and a little more than a quart of naphtha (76° Baumé) poured into the tray. The vapor rose through the cage, and the atmosphere in the room was charged with it. The animal remained there five hours without being noticeably affected.

In order to see how quickly death would result from naphtha under circumstances most favorable for its action, the same dog was held by two assistants, and a sponge and cotton saturated with the same naphtha were continuously held to his nose. Within five minutes he began to tremble, the pupils widely dilated, quickly followed by a violent convulsion, the limbs rigid, the facial muscles contracted, showing the teeth and jaws, blood oozed from the nose, frothy mucus or slime from the nose and mouth, and shrill cries. Fresh naphtha was continuously applied to the nose. Involuntary discharges of urine and fæces followed. The convulsions were so great that the two men could hardly hold him. It was a continual struggle, convulsion passing into convulsion, with occasional moments of comparative quiet with labored breathing. After twenty-five minutes, at the end of a violent convulsion, he sank down dead, without showing any tendency to sleep or stupor.

In order to note the different effects of the low and high boiling naphthas on animals, the following is instructive. Two rabbits of equal weight were taken. In the previously described can were placed 200 cubic centimetres of naphtha distilling below 70° C., that is, naphtha which was almost entirely wanting from the churn stock. The rabbit was placed on the sieve, and the top of the can covered by an inverted sieve. This was at 8.55. The rabbit became uneasy and restless at once. At 9.06 he was unsteady and swaying to and fro, head low down, jaws and teeth grating. At 9.07 he fell over in convulsions. At 9.08 he lay limp, breathing heavily. At 9.11, a slight convulsion, followed by a heavier one. At 9.12 he was taken out of the can and laid on the floor. At 9.14, recovering, but unable to use his legs, trembling on trying to walk. At 9.16, hopping about, apparently well.

In the same apparatus and under exactly the same conditions, the other rabbit was placed with 200 cubic centimetres of naphtha boiling above, instead of below, 70° C. This was at 9.27. At 10.15 he was unaffected. At 11.30, still all right, though apparently somewhat drowsy and weak. At 12.00, very quiet on the bottom of the sieve. Touched lightly he fell over, lay quietly for a moment, then fell over on his side without a convulsion. Finally, had a strong convulsion with shrill cries. Taken out and placed on the floor, he lay for some minutes scarcely breathing, then gradually recovered, though still weak in the legs. At 12.15 he was on his feet again, and hopping about as usual.

In this latter experiment, where the naphtha corresponds to that present in the residue of churn stock, we see that two and one-half hours elapsed before the animal was sensibly affected, while in the first experiment where the lower boiling naphtha was used the rabbit was in convulsions in twelve minutes. In both cases the mode of action was the same, the main difference being the rate of action. One other important point is brought out by the following: 200 cubic centimetres of naphtha distilling above 70° C. were poured into the can, a good-sized rabbit placed on the sieve, and an inverted sieve covered over the top of the can. This was at 9.55. At 10.58 the animal was quiet on the bottom of the can; at 11.18, ditto; at 12.00, fell over on his side; at 12.02, slight convulsion, then lay quietly on the bottom of can, eyelids and facial muscles twitching; at 12.05, heavy convulsion.

In most of the experiments, the rabbits were removed from the can at this point and an opportunity given for their recovery. In this case, however, the animal was allowed to remain in the can. At 12.07, there were convulsive tremblings continuously, most pronounced in the forelegs. The animal lay on its side, its head on the sieve, not more than three inches above the layer of naphtha, pupils contracted almost to a point. This condition continued till 12.35, when the convulsive tremblings were succeeded by a violent convulsion followed immediately by death, the head thrown well back, the mouth stretched wide open, and the lips drawn back. In the first part of this experiment we have simply a repetition of previous results; but after the heavy convulsion at 12.05, we see that death did not follow immediately, although the animal lay near the bottom of the cage with its head almost in the naphtha. Death was delayed half an hour, although the bottom of the can was covered with a layer of free naphtha.

In Kirby's case he was seen ten minutes before his death; the naphtha then in the churn must have been similar to that used in the last-mentioned experiment with the rabbit. We are obliged to conclude that, if these experiments illustrate the way that naphtha acts, then Kirby could not have been killed by naphtha.

Naphtha is used very extensively throughout New England, but we have been unable to learn of a single fatal case of naphtha-poisoning that has come to the notice of the medical examiners and chemists. At a large rubber factory in the vicinity of Boston, we were told that in the cloth-covering room, where a great many times as much naphtha is used as in the churn-room, there were formerly among the working-girls, many instances of "naphtha-drunk" or silliness, sometimes followed by unconsciousness. When the girl was taken into the air, she soon recovered and went to work again. It was principally hysterical girls and those who ate no breakfasts who were thus affected. More ventilation in the room and obliging the girls to eat breakfast, put a stop to these unpleasant attacks.

In the *Revue des Sciences Médicales*, for 1888, Sury-Brienz publishes what he calls the first case of death from the vapor of benzine. A man, twenty-four years old, was working in a chemical factory. It was very cold out-of-doors. Against the rules, he went into a place where the toxic vapors were being formed, without opening doors and windows in advance. He fell dead immediately after coming out, but it is not stated how long he was there. The autopsy showed some softening of the brain, old adhesions of the lungs and some thickening of the cardiac valves from former disease. The other lesions, probably due to the benzine, were fluid blood, great lividity, congestions and some hæmorrhages. In this case, then, which is supposed to be the first fatal case in France, there is evidence of old disease of the brain, lungs and heart, and the benzine was inhaled in a fresh state, in a room where there was no ventilation.

Poincaré, a French authority, says there have been many cases of unconsciousness among workers in naphtha, but only one death. He gives no particulars of this one case, but it was before 1879. Lewin, a famous German writer on poisons, says that workers on rubber fabrics stand benzine without detriment to their health.

Felix, in the *Oeffentliches Gesundheitspflege*, for 1872, page 231, gives some experiments on healthy men. Into a paper cone, loosely filled with cotton wool, of which the point was cut off, pure benzine was poured, and held before the noses of several healthy men, as in giving chloroform. In the first eight minutes, the pulse rose and later fell. Five to fifteen grammes of benzine, inspired for from seven to twelve minutes produced dizziness, nausea, desire to vomit, cough, burning in the chest and sleepiness. Twenty to forty grammes inspired for eight to twenty minutes produced sleep and full anæsthesia as by chloroform. The stupor lasted two to eight minutes, and after coming to, they complained of nausea, sleepiness, and headache. The very slow pulse returned to normal in ten to twenty minutes. Some persons bore the inspiration of fifty to fifty-five grammes without lasting disturbance.

Hirt, "Diseases of Occupation," 1875, Band 2, page 183, says he examined a great many workers in rubber, benzine and naphtha, and was astonished to find them exceptionally healthy. After a stay of several hours in benzine air, there was no trouble with pulse or respiration.

Poincaré, "Hygiène Industrielle," 1886, page 207, attributes the headache, pain, exhilaration followed by depression, to the bi-sulphide of carbon rather than to benzine. But bi-sulphide of carbon is very volatile, with a boiling point of 45° C., and cannot be present in the churn residue, which does not begin to boil until about 70° C.

In *L'Union Médicale*, Paris, 1861, page 92, is an article by M. Perrin. After some experiments on animals with benzine, he concludes that intoxication by benzine is very different from that by chloroform. In chloroform and ether the ultimate and deadly period of intoxication does not exceed three or four minutes, while with benzine it may last five times as long without the death of the animal following. Benzine seems incapable of producing that complete and remarkable inanition and insensibility of the whole body which is a characteristic of the anæsthetic proper. The persistence of sensibility, which is only weakened, *the heavy convulsions* and the functional exaggeration of the circulation and the respiration, indicate that the nerve-centres are affected in a particular way, and that the physiological effects resemble closely those which result from animals breathing the essential oils, a toxic dose of which causes drunkenness, convulsions and death without the animal passing through the state of true anæsthesia.

It would be possible to multiply experiments and quotations; but, in our opinion, we are justified in concluding that Kirby's death was not due to naphtha, because —

(1) He was accustomed to it.

(2) He had worked in the churn for several days without bad effect, when the naphtha was much more abundant, more volatile, more dangerous, than when he was found dead.

(3) The churn room was well ventilated, and there was no possibility of accumulation of fumes.

(4) Experiments on animals, even with free, low-boiling naphtha, and continuously applied, show a mode of action and death entirely unlike the Kirby case.

(5) We are unable to find in medical literature any similar case to Kirby's, where it was known that death was due to naphtha.

(6) Cases of sudden death, particularly soon after dinner, in persons who were not known to have any cardiac or other serious disease, are sufficiently common to justify us in concluding that Kirby's death was due to some natural cause, and that it was not caused by naphtha.

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ABDOMINAL AND PELVIC EMERGENCIES CAUSING SUDDEN DEATHS.[1]

BY J. C. IRISH, M.D., LOWELL, MASS., AND A. K. STONE, M.D., BOSTON.

The chief duty of the medical examiner, and what he especially owes to the State, is to make inquiries into each case to which he is called, why the State has lost its subject. When he can say that the State has lost its subject through nobody's fault, his investigation as medical examiner has ceased. The State is not interested to know of what one subject or another has died, only that there has been no foul play. It simply limits its inquiries by its desire to know whether it has lost its subject by the fault of another.

Now, in the number of cases in which a medical examiner is called during the year, there will be but a very small percentage of them in which the State has lost its subject by the fault of another; probably not one-tenth of them. Therefore in the remaining nine-tenths, when the medical examiner has established the fact that death was due to natural causes, one portion of his duty is fulfilled. In addition, however, he is not only to find that these subjects died from natural causes, but also to certify of what particular disease they died.

Hence, in connection with our office we are confronted oftentimes by simple, sudden deaths, with no preceding history of any illness in the few hours previous to death. For instance, the patient has gone to bed apparently well, and is found dead the next morning, and we are asked to decide what was the cause of death, or its most probable cause. This is one of the questions that we must answer to the best of our ability, and answer oftentimes with the aid of very little evidence.

So far as our absolute knowledge goes, we do not know the cause of death in many instances, and we have not data enough to make a reliable or probable conjecture as to its cause. Yet, there is no suspicion that the deceased came to his death by anything than by natural causes, so there is no reason for asking for an autopsy. Fortunately, however, we often have the preceding history perhaps of one or two days' illness, which was not thought to be dangerous, to give us very considerable aid in forming our conclusions, and in those cases we are able to sign the certificate of burial intelligently, and probably correctly.

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[1] Read before the Massachusetts Medico-Legal Society, February 3, 1892.

Still, as I have said before, there are very many of them in which the cause of death, is a matter of mere conjecture, which is entirely unsupported by any testimony. It therefore behooves us to investigate with all possible care the various causes of sudden death, and whatever investigation can throw any light on these various causes is of great assistance, and of great value in aiding us to arrive at correct conclusions in particular cases.

In the subject which has been assigned to me to-day, there are very many interesting inquiries to be made. The experience of any one man as to what causes sudden death due to any accident occurring in the pelvic abdominal cavity must be very slight. The ordinary practitioner, or medical examiner, who has seen two or three such cases, has had really a very large experience. Therefore in drawing any conclusions upon this subject relative to the frequency of those accidents, or, upon the occurrence of any given case, it is simply necessary to investigate as thoroughly and exhaustively as possible the combined experience of all our writers. I therefore avail myself of the recorded experience of others that has come readily within my reach.

It is not my purpose in this paper to touch upon the subject of hæmorrhages into the pancreas, which has already been treated so ably and exhaustively by the President of this Society, Dr. F. W. Draper. Neither do I intend to consider abortion, for complicated as it is with questions of law and morality, it deserves a place entirely by itself in the transactions of this Society. I shall, however, call your attention to-day to those non-traumatic conditions in the abdominal cavity and pelvis which may cause death in such a manner as to demand our attention.

I shall run over briefly the cases which have come to my notice in glancing over the literature of the subject, and then add a few cases which have fallen under my own personal observation.

First of all I shall take up the cases which have occurred in the course of typhoid fever, where death has occurred in the so-called walking or ambulatory cases.

Dr. Fitz[2] in his recent investigations upon the subject of perforations has collected 4,680 cases with 5.58 per cent. of perforations, thereby agreeing with Holscher[3] whose report of 2,000 cases observed by him showed perforation in 6 per cent. of the cases. Murchison[4] gives a percentage of nearly double this, while Schulz[5] and Liebermeister[6] in the hospitals of Hamburg and Bale report a percentage of only 1.2 per cent. and 1.3 per cent. respectively.

All these taken together would make a trifle less than 5 per cent. in a total of 14,087 cases. What the exact data, from which Dr. Fitz obtained his 4,680 cases, is, we have no means of knowing, but it would seem from a number of other statistics that we have seen, that he made no attempt to tabulate all that has been written on the subject, and that if all were collected, that the percentage would be on the whole less by one or two per cent. than the 6.58 per cent. which he is inclined to consider the true percentage of perforations. But whatever the real percentage may be, every one has the idea firmly fixed in his mind that a large number of these cases occur in the lighter cases of typhoid. Murchison[7] states that this is due to the fact that this assertion was originally made by Louis and Chomel (1834), who found the disease latent, previous to the perforation, in 10 out of 12 cases examined by them. This statement was copied into all text-books, and it was only later after long investigation that perforations were found to be more common in severe cases of typhoid. Fitz's paper supports Murchison, for of the nearly 200 cases of perforation collected by him, only 14 cases occurred in walking typhoid.

Many of our instructors have taught what has been so strongly asserted, supported as it is by autopsies, and probably backed by unreported cases which have occurred in the course of their own consulting practice, that there is a prevailing sentiment through the medical profession that perforation is specially common in ambulatory typhoid. In spite of this general belief cases of sudden death often occur in persons who have had a mild form of the disease, and whose death has doubtless resulted from the carelessness of the physicians, who neglected to remember that perforation must always be borne in mind in the treatment of typhoid fever.

A case that will serve to illustrate this is one narrated by Louis,[8] where a man with a mild case of typhoid was allowed to walk about the hospital garden each day. He was improving until the twenty-third day when perforation with the usual symptoms of collapse and peritonitis set in, and the patient died within thirty-six hours.

Two similar cases are reported to have occurred at Guy's.[9]

Many people have not known just what has been the matter with them, and have gone to the hospital only to die in a short time from perforation. Murchison [10] relates a case of this kind where the patient walked three miles to the hospital in order to find out what was the matter with himself, and died within thirty-six hours of his entrance from collapse. And Louis is said to have seen a similar case. Such cases are always a great shock to the friends, but they do not specially interest us, for the cause of death in such cases is usually apparent. The same is true in those cases which occur late in the stage of convalescence. The history of the previous illness, together with the sudden onset of severe symptoms referable to the abdomen, leave little doubt as to the true cause of death.

The case of Tweedie [11] is in point. Here the patient had had an ordinary case of typhoid, and was up and about, apparently convalescent, and had been allowed to leave the house. The stools were well formed, and perfectly natural. Suddenly, symptoms of perforation occurred, and the patient quickly died.

Another similar case is recorded by Murchison. Here the patient, a laborer, had been convalescent for two weeks, and had returned to his work. One day while working he was suddenly attacked, and died in a few hours. The intestine showed typhoid ulcers nearly cicatrized, one of which had perforated and caused the fatal peritonitis.

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[2] Boston Medical and Surgical Journal, October 1, 1891.
[3] Munch. Med. Woch., 1891, xxxviii, 64.
[4] Murchison : Treatise on Continued Fevers.
[5] Schultz Cbl. fur. Allg. Path. u. Path. Anat., 1891, ii, 289.
[6] Ziemssen's hbd. d. sp. Path. u. Thera., 1874, ii, 1, 161.
[7] Murchison : Continued Fevers, 2d Ed., 1872.
[8] Murchison. Continued Fevers, 2d Ed., 1872.
[9] Transactions of the Medical Society of London, 1862, ii, 120.
[10] Murchison, 1872, p. 75.
[11] Recorded by Murchison.

In spite of their rarity, cases do occur when the typhoid gives no signs, or such obscure signs that they are overlooked, and treatment meant to meet certain more manifest symptoms is inaugurated, which may work most disastrously upon the typhoid lesions.

Bennett[12] reports a case of this kind where a man who was supposed to have cardiac disease with dropsy was purged. He was allowed a liberal diet, as he had an extremely good appetite. After a fortnight the bowels became loose for a couple of days, then there was complaint of general distress with some abdominal tenderness, which was taken for peritonitis from inflammation of the kidneys. Sudden death took place the next day from perforation of the ileum.

Sevestre[13] reports a case where there had been absolutely no symptoms till the sudden advent of perforation symptoms, and the patient died four days later.

A very interesting case is reported from the Hants County Insane Asylum,[14] and one where the charge of neglect might give considerable trouble to the authorities. The patient, a woman, was confined in the asylum for mild mania and delusions, and having some dementia. She was up and about the wards, and was not considered sick until two days before her death. Till then made absolutely no complaint to the nurses.

July 17th she refused her breakfast, and complained of abdominal pain. By night she showed signs of peritonitis, and died the next day at noon. At the autopsy the ileum and large intestine were found to have numerous and undoubted typhoid ulcers, and one of the former had perforated.

Any one who has had experience with the difficulties of diagnosis in light cases of typhoid will readily see how much, on account of her mental condition, the difficulties would have been increased had she made complaint, as she did not.

A case reported by Kleinwachter[15] shows how a really secondary matter can absorb the whole attention. A patient entered the hospital with an abortion well under way, and signs of peritonitis already present. A four months' fœtus was delivered without any difficulty, but in spite of all treatment the patient died the next day. The general course of the case lead the physicians to think of induced abortion, and they were much surprised to find at the autopsy numerous typhoid ulcers, and a perforation from which the peritonitis had started. The abortion had started as secondary to the disease, or been induced at the time of the perforation.

November 21, 1891, I was called by a member of the Board of Health to investigate the cause of death in the case of Mrs. K., who had died suddenly, the preceding night. She was taken sick about five weeks before. The first physician who attended Mrs. K., pronounced the disease typhoid fever. A second medical attendant doubted this diagnosis. The fever was of very mild type. Her physician had not seen her for the ten days before her death and refused to sign the certificate for burial. Mrs. K. had for several days been about the house and in the street.

In the night of November 20th, she was seized with extreme pain in the abdomen and great prostration, and died three hours later. Although no autopsy was made, there can be no doubt that this patient's death was caused by intestinal perforation.

Murchison[16] gives some cases where sudden symptoms have followed exposure to foul air of vaults, etc., and as some of them have resulted in sudden death with symptoms which might have been attributed to poison, they are of value here.

In August, 1829, twenty out of twenty-two boys who were attending the same boarding-school were seized within three hours with fever, vomiting, purging and excessive prostration. One boy, three years old, had been attacked two days before, and had died comatose in twenty-three hours. Another, five years old, had died in twenty-five hours after being attacked. It was found on investigation that a choked-up drain had been opened two days before the first case of illness, and the contents spread on the boy's play-ground. At the autopsy the Peyer's patches and solitary glands were enlarged like "condylomatous elevations," and in one case the mucous membrane was slightly ulcerated. The mesenteric glands were enlarged and congested.

A little girl of nine had been playing over the grating of a choked-up cesspool, from whence such foul smells came that sometimes the horses had to be removed from the stable. She was shortly after attacked with febrile symptoms, vomiting, purging, and intense headache followed by acute delirium. She died forty-seven hours after the commencement of the attack. After death the characteristic lesions of early stage of enteric fever (typhoid) were found in the intestines.

Ulcerations in the stomach and upper intestine may give but little trouble, so much so that patients have no idea that anything serious is the matter, and think that they are only run down.

A case bearing on this point has been presented by Harman.[17] A boy of ten years was playing in Central Park, New York, when he stumbled and rolled down the hill on which he was. Half an hour later he was brought to the hospital. He was slightly dazed, his temperature was 101.4°, and his pulse 110, the abdomen was slightly tympanitic and tender on pressure. Four hours later he began to get pale, the pulse quickly became imperceptible, the tympany and tenderness increased, the respiration became weak and shallow, and vomiting set in, and the patient died within three hours after the onset of the collapse.

The autopsy disclosed an ulcer of the duodenum ten inches from the pyloric opening, which had perforated, and the peritoneal cavity was full of intestinal contents.

There had been no hæmorrhage. No other ulcers were to be found. Investigation of his parents showed that the boy had made no complaint, and had no symptoms referable to the gastro-intestinal tract.

A class of cases will next present themselves for attention where there is usually sudden pain in the pelvis followed by severe collapse, blanching and general appearance of internal hæmorrhage. These cases have been recognized as a source of danger for a long time, but their frequency has been understood only since the advent of abdominal and antiseptic surgery.

Since 1872 there has been a great mass of literature on the subject of ectopic gestation, yet but little of it is of value to us at the present time except that anything that will throw light upon the diagnosis of obscure pelvic symptoms of course aids us in establishing our opinion as to the cause of death. But the question of abdominal operation *vs.* electricity, etc., which have occupied so much space have no interest for us except as clinicians. Therefore we are obliged for the purposes of this paper to throw out the great mass of brilliant operations which have been accumulating in the last few years. The number of cases of ectopic gestation which are now seen and recognized make it probable that in the past there must have likewise been a great many. But the fact that there are so few lithopædia to be found in museums,[18] etc., make it probable that only a comparatively few cases pass to full term, and that from the small number of autopsies to be found that only a small per cent. die of either hæmorrhage or shock. In by far the greatest number of fatal cases death seems to come from exhaustion, or from peritonitis, and follows some time after the first attack. Even in those cases that Barnes calls "cataclysmic," the patient usually survives long enough to allow of medical consultation.

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[12] Trans. Path. Soc. Lon., 1866 [Fitz].

[13] Bull. Soc. Anat., 1871.

[14] Lancet, October, 1889.

[15] Wiener Med. Presse, 1880, xxi, 337.

[16] Murchison, p. 472.

[17] Medical News, August 1, 1891.

A case reported by Dr. Trush gives a very fair idea of the usual course of an extra-uterine pregnancy. Dr. Trush's[19] patient was attending to her ordinary household duties when she was suddenly seized with excruciating pain in the lower part of the abdomen, and almost immediately everything turned dark. When the syncope disappeared she vomited freely, and an intense sickening pain in the abdomen continued. This was the attack, and gradually, after a long tedious convalescence the patient recovered, an invalid.

In spite of the fact that death so sudden that it does not allow of diagnosis is extremely rare, yet enough cases do occur to make it necessary that the examiner should have the subject of extra-uterine pregnancy in his mind in cases where the history in any way points to the pelvic organs.

Dr. Draper[20] has reported a case where an unmarried girl of eighteen was brought to the City Hospital in a state bordering on collapse. She was greatly blanched, and complained of severe pain starting in the pelvis and extending down the thighs and to the back. The hypogastric region was extremely sensitive to palpation. In spite of all stimulation the patient died five hours after her admission to the hospital.

The clinical data were insufficient to establish a diagnosis, and as irritant poison and criminal procedure were thought of, the case became one for medico-legal examination. The abdominal cavity was found filled with three quarts of clotted blood. The left tube was distended at its outer end to the size and shape of a small olive, and in this distended portion was a rent, from whence the ovum had escaped, and the fatal hæmorrhage had occurred. The gestation was probably in its second month.

A very similar case is recorded by Jordan,[21] of Buda-Pesth. A mill-girl soon after beginning her day's work fell to the floor complaining of severe pain in her abdomen. She quickly became unconscious, and remained so until she died. At the hospital she was unconscious, very much blanched and lay slightly turned to the right side. The right leg was perfectly quiet as if paralyzed. The left leg was drawn up flexed on the body. The patient moaned most of the time, and any attempts to examine the abdomen caused increased moaning, when the left leg was moved.

Physical examination showed the organs of the body normal excepting the presence of œdema in the lungs was noted. In the pelvis a tumor was felt upon the right side. The breasts were slightly enlarged, and later it was learned from friends that there had been no menstruation for two months. After some delay diagnosis of extra-uterine pregnancy was made with rupture on the right side. As preparations were being made for operation the patient suddenly died. A medico-legal examination followed. The left tube was found ruptured, and a solid clot weighing about 1,000 grammes was found on the right side of the pelvis.

(The writer draws the conclusion from this case that the patient lay instinctively upon the unaffected side just as a person with acute pleurisy. The blood consequently gravitated to the right side making the tumor appear upon that side. Therefore Jordan thinks that the position of lying should always be taken into consideration in establishing a diagnosis as to which tube is affected.)

The following case of Zweifel,[22] of Leipzig, though operated upon, illustrates very well the suddenness of the attack, and the difficulties in the way of making a diagnosis. The patient was taken with very sudden and severe symptoms of abdominal pain while she was in the garden. She fell to the ground, and from there was removed to the hospital. She had recently had her third child, and there had been no signs of pregnancy present. Clostrum was found in her breast, and a pelvic tumor was felt on vaginal examination. Laparotomy was performed, and a ruptured tube was found, but the patient only lived a short time after the operation.

In June, 1890, I was called to Meredith, N. H., to operate upon a patient who was suffering from hæmorrhage into the abdominal cavity. I reached the patient about two o'clock in the morning five hours after the summons, when I found a woman apparently almost entirely exsanguinated with sighing respiration, and an almost imperceptible pulse. The history of the case is as follows:

This woman had been apparently well. Had missed one menstrual period, and a day or two before had commenced to menstruate. She was left in the morning alone in the house. When her husband returned at 5 o'clock in the afternoon, he found her lying upon the floor entirely unconscious. On examination an ill-defined solid mass was found in the abdominal cavity. There could be no doubt that this was a case of ruptured ectopic pregnancy. The patient had so much the appearance of being in articulo mortis that I regarded any surgical interference as absolutely hopeless. The patient, however, went on to a complete recovery, except that there has since remained in the pelvis a distinct solid mass. Although this patient did not die, and the diagnosis was not verified, either by operation or post-mortem examination, still there can be no question as to its correctness. When she fell to the floor, had she died instead of making a narrow escape, and had been found in this condition, the medical examiner who would have been called in, would probably never have suspected the real cause of death, and in no other way could this have been determined than by a post-mortem examination.

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[18] Tabs, quoted by Cushing, Boston Medical and Surgical Journal, 1891, No. 2.

[19] Trans. Obs. Soc. N. Y., 1886, p. 1283.

[20] Boston Med. and Surg. Journal, January 8, 1891.

[21] Allg. Cent. Zeit., November 14, 1891.

[22] Zweifel: Archiv. f. Gynæ., 1891.

A case reported by Fœrster[23] is very suggestive, as similar cases could easily occur among a class of patients where foul play might be suspected. The woman was twenty-nine years old, and had one child a year before. Menstruation was regular until one month before, when the duration was six instead of three days, but was very scanty throughout. The patient stated that she did not believe herself pregnant. With the approaching menstrual period she had had greatly increased sexual desire, which her husband had been gratifying to excess. During this procedure the patient felt a sharp pain in her right side, which she supposed to be due to indigestion, and various household remedies were used. Three hours later the physician was called. The patient was then in complete collapse, with pulse hardly to be felt, blanched, and with cold, clammy perspiration. The lower part of the abdomen was sensitive, The husband denied cohabitation for some months past, and refused an operation asked for on the diagnosis of extra-uterine pregnancy. The patient died in a few hours. After death two litres of blood were found in the abdominal cavity. The right tube was distended, and a rent was present large enough to allow of the escape of the head of the fœtus. A right corpus luteum was present.

SUDDEN DEATH FROM AFFECTIONS OF THE NERVOUS SYSTEM.[1]

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AN inquiry into the causes arising within the nervous system which may give rise to sudden death is by no means easy. Registration reports and vital statistics seldom separate such cases from the total number of deaths attributable to any given cause, and a study of clinical records with autopsies would require an enormous expenditure of time before a sufficient amount of evidence could be accumulated. I can offer, therefore, only a few *a priori* considerations as to the possible occurrence of sudden death in affections of the nervous system, basing my statements rather upon the probable events in any given disease than upon statistics. In such a study I exclude traumatic affections of the nervous system, and poisons which cause death by their action upon the nervous system, whether they be taken into the system from without, as in the case of opium, or be generated within as in the case of the poison of uræmia.

Before beginning the inquiry, however, a word of definition seems necessary. I shall limit the consideration to cases of death occurring within an hour from the onset of symptoms; only in such cases will I speak of sudden death, using the term speedy death for cases where death occurs within twenty-four hours.

I shall consider sudden death as occurring from affections of the peripheral nerves, the spinal cord, the brain, and in the neuroses.

I. PERIPHERAL NERVES.

Sudden death is not uncommon where there is inflammation of the vagus. It is due undoubtedly to paralysis of the heart. Such a vagus neuritis is not uncommon after the acute infectious diseases, especially diphtheria, and to it are now generally attributed the sudden deaths which are so common after these affections. In multiple neuritis arising from other causes such a sudden cardiac paralysis rarely, if ever, occurs. When death ensues as a result of vagus neuritis, as is not uncommon, it is of gradual onset, and is attended by various respiratory and circulatory symptoms. It would seem, therefore, that some other factor beside the vagus neuritis, is requisite; and this factor is probably the degeneration of the cardiac muscle, which is also not infrequent in such cases. Only in the last instance can these cases be attributed to affections of the nervous system, for the acute infectious disease has a large share in their causation. They may therefore be excluded from this inquiry, the more in that they seldom have any medico-legal interest.

II. SPINAL CORD.

Lesions of the spinal cord rarely, if ever, give rise to sudden death. Lesions of the medulla will be considered with lesions of the brain. It is, of course, obvious that lesions high up in the cord, close to the medulla, may act very like lesions of the medulla itself, but such lesions need no separate consideration.

Spinal meningeal hæmorrhage. — Ollivier long ago contended that meningeal hæmorrhage, unlike cerebral hæmorrhage, could not produce death by a "stroke." Leyden[2] later contested this statement, and Gowers[3] thinks it very common for death to ensue in a few hours. Death, however, seems to be speedy rather than sudden; it usually takes place, at the soonest, after a period of three to six hours, with symptoms of spinal pain, paraplegia, etc. In a part, at least, of the fatal cases, especially those where death has come on the quickest, the hæmorrhage was high up, involving the medulla, or there was co-existing cerebral hæmorrhage, or the patient died of shock.

Spinal hæmorrhage. Hæmato-myelia. — This affection is extremely rare, and it seems to cause death rather less speedily than meningeal hæmorrhage, unless the lesion be high up. The shortest time in which Leyden[4] found that death occurred was thirteen hours.

Acute hæmorrhagic myelitis. — Death in this affection is distinctly of slower onset than in hæmorrhage. Strümpell[5] thinks it not impossible that, in some cases where children die in a short time with fever, convulsions, etc., there may be an acute polio-myelitis; but that is purely an hypothesis. Unless the myelitis involve the upper part of the cord death seldom occurs until a week or more has elapsed.

III. BRAIN.

Meningitis. — Even in the fulminating forms of cerebro-spinal meningitis, and the rapid cases of tubercular meningitis and meningitis from ear disease, we rarely meet with cases of sudden death. Stillé[6] finds the shortest duration of any case of cerebro-spinal meningitis (Gordon's) to be five hours. Meningitis of tubercular origin or from middle ear disease may come on suddenly, with paralysis, etc., as if from a "stroke," and the patient may rapidly become comatose, and die; but in such cases the period of coma is more or less protracted and the patient usually lives several hours or even days.

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[1] Read before the Massachusetts Medical-Legal Society, February 3, 1892.

[23] Fœrster: Jour. Amer. Association, 1890, p. 1204.

[2] Leyden: Klinik der Rückenmarkskrankheiten, i, 382.
[3] Gowers: Diseases of the Nervous System, i, 207.
[4] Leyden: Op. cit. ii, 80.
[5] Strümpell: Text-book of Medicine, p. 632.
[6] Stillé: System of Medicine (Pepper), i, 819.

Meningeal Hæmorrhage. — Hæmorrhage into the meninges of the brain, whether it be dural or pial, usually does not give rise to sudden death. In fourteen cases of surface hæmorrhage Dana[7] found the limits within which death occurred to be from one to eight days. If, however, the hæmorrhage be due to a rupture of a large vessel at the base (notably the basilar artery, the favorite seat of aneurisms), the resultant pressure upon the medulla will cause sudden death, sometimes within two or three minutes.

Cerebral Hæmorrhage. — This may be regarded as the chief cause of sudden death in affections of the nervous system. Sudden death is, of course, most common in hæmorrhages into the medulla, the pons, or the cerebellum; most sudden, of course, in hæmorrhage into the medulla. In addition to these distinct focal hæmorrhages, which may from their proximity to the vital centres in the medulla, give rise to sudden death, hæmorrhages higher up may rupture into the ventricles. Dana found that out of thirty-two cerebral hæmorrhages, twenty-six ruptured into the ventricles; Charcot and Bouchard[8] found this only in eighteen out seventy-seven cases. In only a small proportion of these ruptures into the ventricle is death sudden, although it is usually speedy. Dana gives the average duration of life as from one to three days.

Cerebral Softening. — Cerebral softening is, as a rule, less dangerous to life than cerebral hæmorrhage, and much less frequently can it give rise to sudden death. Hunt[9] notes a case where embolism of the only large artery that supplied the brain did not cause death for several hours. As with hæmorrhage, sudden death occurs chiefly from thrombosis in the arterial supply of the cerebellum, pons, and medulla, and thrombosis of these arteries is far less common than hæmorrhage from them. Out of fifty fatal hæmorrhages Dana found the average duration of life to be a week, if the hæmorrhage were not ventricular, but with softening the duration was from one to ten weeks.

Abscess. — Cerebral abscess need be mentioned only to note the relatively rare occurrence of rupture of its contents into the ventricle, which may give rise to sudden or speedy death, as in hæmorrhage.

Tumor. — It is not unusual in cases of cerebral tumor to see coma set in, without any apparent cause, and death to ensue in a comparatively short time, twelve to forty-eight hours. The cause of such a condition is uncertain; but it is very likely due to vascular changes. Only in the rarest cases may some vascular change in a new growth close to the vital centres lead to sudden death.

Encephalitis. — The few cases of acute hæmorrhagic inflammation of the medulla to which Wernicke has given the name of acute polioencephalitis are the form of encephalitis in which we should most naturally look for sudden death, but even here death has occurred only after an illness of several days.

Sclerosis. —In disseminated sclerosis and in general paralysis of the insane, pseudo-apoplectic seizures and convulsions are not infrequent, and they may bring about death. Sudden death, however, is in all probability extremely rare from such a cause.

Insanity. — Sudden death is occasionally seen in cases of acute mania, but it is due to conditions outside of the nervous system, and need not be considered here.

IV. NEUROSES.

Convulsions. — Beside accidental causes, such as asphyxia and injury, death may occur suddenly, in very rare instances, in the epileptic fit. The precise cause is unknown, but there is probably some profound vascular disturbance. It is not, however, solely in the true epileptic fit that sudden death may occur, but also in the fit due to gross cerebral lesions, tumor, general paralysis, or multiple sclerosis; and Raynaud[10] reports a case of death from spasm of the larynx and pharynx in what was probably an hysterical convulsion.

Exophthalmic Goitre. — In this affection death is occasionally sudden, and the cause is obscure. Recent hypotheses as to the nature of this disorder tend, however, to remove it entirely from the diseases of the nervous system; and, considering the profound cardiac disturbance, it is most probable that sudden death is due to some affection of the heart.

Shock. — Finally, we must speak of those cases of sudden death from emotional disturbance, from slight injury, etc., which are usually ascribed to "shock." The nature of the process is far from understood, but it is usually ascribed to inhibition of the vagus centre from cortical or reflex stimulation, and in some unknown way the nervous system plays a part.

From this very imperfect review we see, therefore, that sudden death may ensue from certain disturbances of the nervous system, — vagus neuritis, hæmorrhage, convulsions and shock. Excluding the first of these, for reasons already given, we find that the chief and by far the most frequent cause is hæmorrhage, and that when hæmorrhage into the central nervous system causes sudden death, its seat is almost always in the brain, involving the important centres in the brain-stem. Speedy death may arise from various other conditions, — spinal hæmorrhage, softening, new growths or sclerotic processes.

In the ultimate analysis, therefore, we find that sudden death in so-called affections of the nervous system, is to be referred not to changes in the nervous system itself, but to changes in the vascular system — the system primarily responsible for the majority of cases of sudden death.

At the beginning of this century apparently many of the cases of sudden death were attributed to apoplexy. As a matter of fact the nervous system is apparently responsible for only a few of the cases. Such few statistics as I have been able to gather are of old date, but they may be of interest.

Granville,[11] found in the English reports from 1847 to 1851, 17,478 cases of sudden death, out of a total of 2,028,145, nine-tenths of one per cent. or one in one hundred and sixteen. Francis[12] out of 733 deaths of persons over ten in the Manchester work-house found nineteen, or one in 38.57 which were sudden, within a quarter of an hour. Of these three died of apoplexy, and two of epilepsy. Devergie,[13] in forty cases of sudden death at the Paris morgue found one from hæmorrhage into the pons, three from meningeal hæmorrhage, two from "serous apoplexy with pulmonary congestion," and three from "cerebro-spinal congestion." Only four of these can certainly be assigned to the nervous system. Out of seventy-four cases of apoplexy collected by Dana only one involved the pons and three the cerebellum, and sudden death was not noted.

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[7] Dana: New York Medical Record, 25 July, 1891.
[8] Wernicke: Lehrbuch d. Gehirnkrankheiten, ii, 47.
[9] Hunt: Birmingham Medical Review, April, 1880.
[10] Gowers: Epilepsy, p. 161.
[11] Granville: Sudden Death, London, 1854.
[12] Francis: Guy's Hospital Reports, Second Series, iii, 76, 1845.
[13] Devergie: Bull. de l'Acad. de Med., ii, 824, 1837-38.

It is probable, from these figures, that not one death in a hundred is sudden, and only about one-tenth of these are to be attributed to affections of the nervous system.

Clinical Department.

SOME ANOMALOUS CASES OF SCARLATINA.[1]

BY J. RICHMOND BARSS, M.D., MALDEN, MASS.

I offer the following cases of scarlatina as interesting from a diagnostic point of view, important from a sanitary standpoint, and possibly of value to the younger members of the profession. Every gentleman present, of course, claims to be able to diagnosticate a case of scarlet fever, yet each one probably has had at times grave doubts as to the lesion, or even failed to make a correct diagnosis through lack of symptoms or sufficient data of local conditions to fill in the missing link. While two of the cases I am about to report are records of my own blunders, fortunately harmless both to patients and myself, I trust they may be a reminder to you, if caught under circumstances which might be more deleterious to your reputations; bearing in mind two medical friends — both capable men — who suffered more or less professional injury from false diagnoses in somewhat similar cases. To those who have made these errors, certainly to myself, comes like balm to the wounded pride, the statement of a German author who says, "one of the most remarkable peculiarities of this disease is the great variety of symptoms which it presents; a variety so great, in fact, that in consequence of the lack of sufficient evidence, there is still some doubt whether some of its forms should be included under the general designation of scarlet fever."

These reasons, and the fact that these different forms occurred in one family at the same time, seem to me to make them worthy of report. On August 16, 1891, Annie C., aged fifteen, with very fair sanitary surroundings, was taken with sore throat, which grew worse, and on the 18th, I was sent for.

I found her with temperature 102° F., and a follicular inflammation of both tonsils, no symptoms other than those of an ordinary case of tonsillitis, no eruption, no enlargement of lymphatics; ordered a gargle and phenacetine to relieve fever. Next day, 19th, found temperature nearly normal, about 99.5° F., and throat so much improved that parents thought it unnecessary for me to call again. On the second day, namely, the 21st, was sent for to see a younger child, Mary, aged seven, who had had attacks of vomiting during the day, and found temperature of 103° F., with an eruption over different parts of body, photophobia, and sneezing a good deal, no sore throat; made a diagnosis of measles; the next day I felt confirmed in my diagnosis, in spite of the fact that I now learned that there had been several cases of scarlet fever in the neighborhood, and that a child had been visiting at the house, said to be convalescing from measles, but with anasarca, peeling and other symptoms to forcibly remind me of scarlatina. Still, I believed my case to be measles, and reported it as such. On the 26th, while still attending Case II, I was asked to see the brother, Tim, aged fifteen years, who had been purging and vomiting for several days and whom I found so thoroughly jaundiced, that he looked as dark as an Indian. The 27th he began to complain of fever and sore throat, and on examination, I found, in spite of the hue of the skin, a well-marked scarlatinal eruption. I then began to reinvestigate Mary, Case II, and found her eruption had gone, but that her temperature had kept up pretty well, averaging 101.5° F., with very rapid pulse, no swelling, no albumen, but quite sick with acute articular rheumatism, affecting wrists, knees and ankles. At this time, Annie, Case No. 1, had recovered from her sore throat and was feeling well, her urine was found free from albumen, but some of the lymphatics of neck were slightly enlarged and the skin on ends of the fingers began to peel in very large flakes, so that they were very tender, no desquamation on other parts of the body. On the 28th, namely, seven days after first visit to Case II, she also began to peel, and on left half of back and belly had a liberal crop of varicella-like vesicles or pustules.

This, in brief, is the history of these cases which were all undoubtedly cases of scarlatina. No. I was probably a case of scarlatina without eruptions, the enlarged lymphatics and marked desquamation pointing to this conclusion; No. II was probably what Thomas means, when he says: "The exanthem may be very unlike the normal eruption of scarlatina, as, for instance, when it consists in discrete large roseola," this was probably the condition that I mistook for measles. The pustular eruption can be accounted for by the fact that "now and then the scarlatina eruption is followed by other forms of cutaneous disease, as herpes labialis, acne, urticaria, pemphigus, ecthyma, varicella-like and pustular eruptions, etc.; there is no connection, however, between them and the scarlatina exanthema; they belong to the domain of complications and sequelæ"; as also the slight apparent rheumatism in Case No. II, which passed away in about a week. These cases all finally recovered.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 21, page 531.)

GASTROSTOMIE A LA HAHN.

V. Hacker reports two cases in which he followed the technique recommended by Hahn, of Berlin,[27] and placed his opening in the left eighth intercostal space. He found that the gastric fistula in this position was always above the level of the stomach contents, whether the patient was sitting, standing or lying, and that it also formed practically a diverticulum from the anterior wall of the stomach. He would choose this site for operation for those patients who would require the permanent use of a gastric fistula. The action of the ribs in closing the opening when not in use was effective only when the intercostal space was narrow and the fistula small. This required the introduction of a Nélaton catheter at each feeding. There was found difficulty in preventing pressure necrosis of the ninth costal cartilage. This was noticed in both v. Hacker's cases, and is exceedingly liable to occur if a tube is allowed to remain in the intercostal space for any length of time.[28] V. Hacker also reports the results of twelve cases of gastrostomy[29] where the operation was performed according to his plan for forming an external sphincter to the gastric fistula by making the external opening through the fibres of the rectus muscle.[30] He prefers the "delayed" opening of the stomach, also a small fistulous opening, and says that primary union is necessary since suppuration destroys the sphincter position and action of the muscular fibres. All of v. Hacker's cases bore the operation well. It is also shown that a suitable apparatus for closing the opening, notwithstanding its continual dilating effect, can be permanently worn in the fistula without dilating the opening and without leaking of gastric contents or causing eczema. Girard has also operated though the rectus.[31]

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[1] Read before the Malden Society for Medical Improvement.

[27] Boston Medical and Surgical Journal, 1890, vol. cxxiii, 320.

THE SURGICAL TREATMENT OF PYLORIC STENOSIS, WITH A REPORT OF FIFTEEN OPERATIONS FOR THIS CONDITION.

N. Senn,[32] after a careful record of these cases, submits the following propositions for consideration and discussion:

(1) Pyloroplasty, as devised by Heineke-Mikulicz, is the safest and most efficient operation for cicatricial stenosis of the pylorus.

(2) Pylorectomy in the treatment of carcinoma of the pylorus is a justifiable procedure when the disease is limited to the organ primarily affected and the patient's general condition furnishes no contra-indication.

(3) Gastro-enterostomy by the aid of large, moist, perforated plates of decalcified bone should be resorted to in the treatment of malignant stenosis of the pylorus as soon as a positive diagnosis can be made; and a radical operation is contra-indicated by local or general conditions of the patient.

In this connection the article entitled "Contribution to the Surgery of the Stomach," of Navarro, a valuable abstract of which has been written by Pick,[33] is of interest.

OPERATIVE TREATMENT OF INTESTINAL STRICTURE AND STENOSIS.

König (Göttingen) reports a group of 14 laparotomies done during the past ten years for intestinal stenosis due to intestinal tumors.[34] The cases are classified as follows:

Constriction from a band, 1. Diseases of the intestine, 13 (cancer 10 — colon descendens 4, cæcum transversus 3, colon transversus 2, colon ascendens 1); sarcoma small intestine 2; tuberculosis 1. There were 13 operations: 3 exploratory only; 3 artificial anus, 3 deaths; 7 intestinal resection. Of these seven cases, immediate suture was performed on four, with two deaths; the gut could not be united and an artificial anus was made in three instances, all of which resulted fatally (two died immediately and one from recurrence one year after operation).

The cancerous tumors being in the colon were next to the abdominal wall and movable; if adherent, could be mistaken for tumor of abdominal wall. The symptoms are varied; sometimes increasing constipation, colic-like pains from accumulation of fluid above stenosis or by invagination in vicinity of growth. Hæmorrhage only in one-half the cases. Operation is the only effective treatment, and is resection with immediate union by suture, or an artificial anus, or an artificial anus without resection. König prefers to open the abdomen over the the tumor. The tumor is exposed, freed, brought outside the abdomen, and operated there. Mesenteric glands should be removed if possible. In uniting the resection wound he sutures the mucous membrane, then superimposes the usual suture of the muscle and serous coats.

INTESTINAL ANASTOMOSIS BY MEANS OF VEGETABLE PLATES.

Dawbarn[35] has brought forward a serviceable emergency plate.

A pair of the potato plates can be made, he states, by his method in ten minutes. The material can always be procured. It has no tendency to swell; it is rigid, and remains so longer than the majority of other materials devised for this purpose. For use upon the human gut the plate should be made about one-third of an inch in thickness, and should be cut so long that the opening is about twice the normal diameter of the gut to be operated upon. To prevent the threads from cutting through, they should be very coarse, and the needle before passing through the plate should transfix a scrap of rubber drainage-tube or a minute bit of cloth, which, by its broad surface, prevents the large knot tied on the end of the thread from pulling through. Instead of first making the incisions into the gut, which subsequently serve as the artificial opening, the plate is inserted into the lumen of the bowel, through its divided end and the needles are made to traverse the gut-wall at their proper positions. When the two plates are thus placed in the two extremities of the bowel, at least two inches from the cut extremity, the corresponding threads of the two plates are tied together, thus apposing the two peritoneal surfaces covering the plates. These surfaces previously should be well scraped with a knife, so that prompt adhesions may take place. After the plate-threads are tied, at least one line of sutures should be run around the plates, great care being taken not to pass the needle into the lumen of the bowel. The author prefers a basting-stitch, since it is easier to apply, employing three stitches to the inch. When these stitches are placed, a strip of wood is passed into one open gut-end; this is for the purpose of cutting against; the opening is then made through the apposed gut-walls enclosed by the rings. To do this a scalpel is inserted into the unoccupied open end of the gut, and as long an anastomotic opening is made as the plates will allow. The strip of wood prevents cutting too deeply. After this incision is made, water should run freely into one end and out the other. Under gentle hydrostatic pressure for a few minutes, the outlet end closed with the finger and thumb, the line of suture will not leak if properly made. The free ends of the bowel are next scraped, inverted, and secured in this position by a double line of running sutures. Finally a stitch or two fastens together the blind ends and the gut against which each rests, first scraping the opposed peritoneal surfaces. This prevents the possibility of another loop forcing its way into this angle with the result of undue tension of the stitches at the plate-ends.

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[28] Wien. Klin. Wchnschr., 1890, iii, 43.

[29] Wien. Klin. Wchnschr., 1890, iii, 36-37.

[30] Surgical Reports: Boston Medical and Surgical Journal, 1887, vol. cxvi, 257.

[31] Surgical Reports: Boston Medical and Surgical Journal, 1888, vol. cxix, 248.

[32] New York Medical Record, November 7 and 14, 1891.

[33] Annals of Surgery, 1891, vol. xiii, p. 214.

[34] Centbl. f. Chir., Beilage, 1890, No. 25.

[35] New York Medical Record, vol. xxxix, No. 26; American Journal of the Medical Sciences, September, 1891, vol. cii, No. 3.

LAPAROTOMY FOR INTESTINAL PERFORATION IN TYPHOID FEVER.

Still another case is recorded of recovery following this operation. Dr. Weller Van Hook[36] answers the question, "Shall laparotomy be performed for intestinal perforation in typhoid fever?" by recording a successful case. Besides this, he records two unsuccessful cases, making to date, 19 recorded laparotomies with four recoveries. Van Hook's conclusions with those of Dr. R. H. Fitz in a thorough *résumé* of the subject read at the 1891 meeting of the Association of American Physicians are already published.[37]

CIRCULAR ENTERORRHAPHY.

Paul,[38] in cases in which end-to-end apposition is indicated, employs a decalcified bone-tube from an inch to an inch and a half long, from one-half to three-fourths of an inch in diameter, and from one-sixteenth to one-eighth of an inch thick, the lower end of which is perforated for suturing the proximal end of the bowel to it. A double thread, carrying a needle, is fastened to the tube to facilitate invagination. The tube is entirely introduced into the proximal portion of the bowel, the free margin of which is sutured to the tube through the perforations by means of fine chromicized catgut. Care should be taken to include in the suture the severed edges of the mesentery. Next, the needle armed with the double thread is introduced on a director into the distal segment of bowel, and, at a distance of three inches, made to emerge through the wall of the intestine. Then the distal end is sutured all around to the proximal end through the muscular and serous coats by means of chromicized catgut, special attention being again given to the mesentery. An assistant now makes traction on the double thread and resists the operator as he draws the distal end of the bowel back over the tube, thus invaginating the proximal end. The parts are retained in position by a few Lembert sutures, one on either side of the mesentery, and others as needed. The double thread is finally drawn tight and cut off short.

LAPAROTOMY FOR ACUTE INTUSSUSCEPTION.

Dr. D. Farquhar Curtis[39] records a case of operation for this condition, and adds to his former statistics as follows:

He states that in the series of cases which he reported in the Transactions of the New York State Medical Society, 1888, there were 70 cases operated upon from 1873 to 1887 inclusive, in which the mortality was seventy-six per cent. I find that there are now on record 105 cases, with a mortality of seventy per cent., — a very encouraging improvement. It also appears that out of 65 cases in which the intussusception could be reduced only 38 died, a mortality of fifty-eight per cent. — among the children the mortality was sixty-six; among the adults forty-seven per cent. Of 17 cases in which the affected bowel was resected and sutured, only two recovered, both adults. Of 16 cases in which an artificial anus was made (with or without reduction or resection of the intussusception), two cases recovered, also both adults.

These figures show that prolonged operations are almost invariably fatal, and furnish another argument against delay, for that is the usual cause of the conditions which render operations difficult. Delay is also responsible for the high mortality in these cases, for nearly all the patients are recorded as being in very bad condition, or even in collapse, at the time of operation. Laparotomy, to give good results, must be performed as soon as systematic efforts to reduce the intussusception with rectal injections have been made without success. We must constantly bear in mind both sides of the shield; there is danger in performing laparotomy for intestinal obstruction, but there is also danger in postponing it until it must be undertaken as a last resort.

RESECTION OF THE APPENDIX VERMIFORMIS DURING THE QUIESCENT STAGE OF CHRONIC RELAPSING APPENDICITIS.

After a careful study of reported cases of operation on the appendix vermiformis,[40] Weir summarizes the subject as follows:

(1) That the final outcome of the review of these cases has been that the large majority of current attacks are due to catarrhal appendicitis, which, though to an unknown degree capable of producing explosive and serious peritoneal inflammation, yet generally, from the lumen of the tube being previously shut off from the cæcum, limits correspondingly the chances of fæcal or severe infection of the peritoneum.

(2) That the simple catarrhal appendicitis can be suspected when the recurrences are frequent, that is to say, more than four or five times, as in the acute processes this is seldom exceeded — and when such attacks are not of a severe type, nor of greater duration than a week, and particularly so if there be no appearance of a distinct tumor.

(3) In such cases delay in operating may be encouraged to a reasonable extent, at least until it is indubitably proven that the invalidism is a confirmed one. Out of five cases seen by Weir in the last year for recurrent attacks of appendicitis, in three, of the above described simple form, it was advised to wait until the next acute attack presented itself as a further justification of surgical interference; but this did not occur in any of these. In the two others, from the persistent invalidism or the severity of some of the attacks, an operation was advised.

(4) Where a tumor is present in the quiescent stage, or has been decidedly felt after the acuteness of the attack has passed off, more urgency is present, as it indicates, it is believed, either an accumulation of noxious contents or of ulceration within the appendix, or an already present small perforation. It is in such cases that Mackenzie says that we can expect, if an acute process is subsequently set up, that it will be a circumscribed rather than a general suppurative peritonitis. The frequent conjunction, in the collected cases, of adhesions with the severer forms of the catar-

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[36] Medical News, November 21, 1891.

[37] Boston Medical and Surgical Journal, vol. cxxv, p. 579.

[38] Liverpool Med. Chir. Journal, July, 1891; Medical News, October 21, 1891.

[39] New York Record, October 31, 1891, p. 534.

[40] Annals of Surgery, vol. xiii, No. 5, p. 91.

rhal appendicitis with retained secretions or with minute perforations, seems to corroborate this view.

(5) That as the diagnosis of the separate condition of simple catarrhal appendicitis and its complications of distention from retained fluids and of ulceration, are not at present to be differentially diagnosticated, and as it has been shown that each case can give rise to dangerous conditions, recurrences of severity and frequency should hereafter mean that an exploratory laparotomy should be resorted to, on the general principle of this being of less risk than the disease itself.

(To be continued.)

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from No. 24, page 612.)

The Seventh Annual Meeting, held in the Army Medical Museum, Washington, D. C., May 24, 25, and 26, 1892.

FIRST DAY. — AFTERNOON SESSION (CONTINUED).

MID-SYSTOLIC AND LATE SYSTOLIC MITRAL MURMURS,

by J. P. Crozier Griffith, Philadelphia.

By mid-systolic and late systolic mitral murmurs are designated those which have the area of diffusion of the ordinary mitral regurgitant murmur with the symptoms of the disease, but which occupy only the middle or latter portion of the systolic period. I report three cases. The first, that of a woman of twenty years. who had suffered from rheumatism and had the ordinary symptoms of mitral regurgitation. Auscultation showed a loud and very musical murmur which occupied only the middle portion of the period between the time of the apex beat and the first sound. It was sharply separated from both the first and second sounds. The area of diffusion was purely that of mitral regurgitation; the pulmonary second sound was accentuated and there was enlargement of the right ventricle. The second case was that of a man of seventy-two, who had for some years suffered from the symptoms of regurgitation through the mitral orifice. Auscultation showed a murmur which did not begin until the latter portion (rather less than one-half) of the systolic period. It ran up to the second sound but did not supplant it. It possessed purely the area of diffusion of mitral regurgitation. The right side of the heart was enlarged. On certain occasions, when examined, the murmur was very short and very close to the second sound. The third case was that of a woman of forty-seven years who had had severe muscular rheumatism but no subjective cardiac symptoms. Auscultation showed a high pitched, systolic, slightly musical murmur which occupied the latter half or two-thirds of the systolic period and ran up to but did not replace the second sound. The murmur occupied the area of the murmur of mitral regurgitation and the second sound was accentuated. The right side of the heart was enlarged. The form of murmur just described is certainly very unusual, and the literature shows but occasional and indefinite references to it, generally under the title of post-systolic murmur, which involves a misconception of its nature and cause. The term post-systolic could apply only on the theory that the systolic of the ventricle lasted only to the beginning of the short silence and that this silence corresponded to the relaxation of the ventricles and the time supposed to be required for the aortic valve to close. This would place the second sound not at the beginning of the diastolic period but at an appreciable time after the beginning. Several observers from the study of cardiographic tracings have indeed maintained that such was the case. This, however, involves the assumption of the existence of a physiological aortic regurgitation produced by the blood in its recoil upon the aortic leaflets passing backwards through the orifice in the process of rapidly closing. Such an assumption as this seems contrary to the perfection which we have learned to expect in Nature's apparatuses. I have long believed that there existed no appreciable time during which a murmur could occur between the relaxation of the ventricle and the occurrence of the second sound.

The recent studies of Martius with the cardiograph and the interesting investigations of Ceradini made years ago prove that such a physiological regurgitation does not exist. Ceradini showed that as the blood ceased streaming out of the ventricle, a reverse whirl of that in the aorta brought the semi-lunar leaflets into closer approximation so that the recoil when it did come with the first relaxation of the ventricle found them in perfect apposition and simply put them on the stretch, thus producing the second sound. The existence of this "persistence time," as it is named by Martius, that is, the time during which the ventricle simply remains contracted after the blood is expelled is rather short to permit of closure without regurgitation. This theory renders impossible the existence of a murmur just before the second sound, due, as Skoda and others maintain to the friction of blood on the roughened aortic walls during this recoil upon a competent aortic valve.

Adopting the view that the second sound marks the beginning of diastole, murmurs heard before it must of course be systolic and the cases which I report, all having murmurs heard in the mitral area, can with good reason be regarded as cases of mitral regurgitation. The first case is an interesting example of mid-systolic mitral murmur analogous to the mid-diastolic mitral murmur of Bristowe. The last two cases, and especially case second, are interesting in that they offer clinical proof of the view that the systole lasts quite up to the second sound. They prove too that the "persistence time" must be of exceedingly short duration as indeed Martius admits.

The production of these mid- and late-systolic murmurs admits of different explanation, depending upon the area of diffusion. In the cases reported they must, I think, have been due to regurgitation through the mitral orifice. It is possible that such regurgitation might have taken place only at the middle or latter portion of the systolic period. It seems probable, however, from the symptoms of the cases and the variation in the murmurs heard at different times that a much greater degree of regurgitation occurred than the murmur alone would indicate. This murmur is probably analogous to the potential pre-systolic murmur described by Bristowe and it is likely, I think, that the regurgitation lasted through all or nearly all of the systolic period but usually became audible, for unknown reasons, only toward the middle or latter portions of it.

SECOND DAY, WEDNESDAY. — MORNING SESSION.

DISCUSSION ON DYSENTERY: ETIOLOGY AND PATHOLOGY,[1]

by Dr. W. T. COUNCILMAN, Baltimore, Referee.

We can divide dysentery into three forms: (1) Diphtheritic, (2) Catarrhal, (3) Amœbic.

The diphtheritic dysentery is characterized by necrosis of the epithelium and a fibrinous exudation. It is the form usually met with in acute epidemics. It may also appear in the course of a number of diseases, and may be produced by a number of causes. There is nothing in the anatomical lesions by which we may distinguish the action of a definite pathogenetic agent.

The catarrhal dysentery is characterized by an inflammation of the mucous surface of the intestine, leading to the production of shallow ulcers. Affections of the lymph follicles are more common in the catarrhal than in the other forms. What is said of the croupous is also the case in the catarrhal.

In both these forms, abscess of the liver may appear, but it is very rare.

The amœbic dysentery is characterized by definite lesions in the large intestine and elsewhere. The lesions have always the same character, and we can recognize in them the action of a common agent. There are extensive ulcerations of the intestines, which, contrary to those of the other two forms, appear to be produced, not by extension downward, from the surface, but by a primary infiltration of the submucosa, with subsequent destruction of the overlying mucous membrane. Clinically, the disease is characterized by remissions and great chronicity.

Abscess of the liver and lung is more frequent in amœbic dysentery.

The disease is caused by the amœba dysenteriæ.

It forms the most of the cases of tropical dysentery.

DISCUSSION ON DYSENTERY: SYMPTOMS, COMPLICATIONS AND TREATMENT,

by Dr. A. BRAYTON BALL, New York, Co-Referee.

Differential symptomatology of (1) Catarrhal colitis, (2) Diphtheritic colitis, (3) Amœbic colitis, (4) Secondary colitis.

Absence of "dysenteric" symptoms in certain cases.

The marked tendency to anæmia and its causes.

(The symptoms and treatment of dysenteric, hepatic and hepato-abscess will be omitted, as they are to be fully treated by Dr. Dabney in his paper on "Hepatic-Abscess.")

Malarial complication, its frequency, symptoms and diagnosis.

The arthropathies of dysentery, their symptoms and pathology.

Dysenteric paralyses, their symptoms and pathology.

The *Ipecac Treatment.* — Of late years physicians in India have become less enthusiastic about the advantages of large doses, and more apprehensive of their depressing effect. They have not lost faith in the ipecac treatment, but advocate its use in smaller doses. In this country the treatment has never secured a firm foothold, partly on account of the frequency with which depressing effects have been met with, and partly because the superiority of this over less objectionable methods has not been demonstrated for the dysenteries of this country. Many recent writers who discard the large doses recommend the drug in amounts sufficient only to excite slight nausea (two or three grains), or in still smaller doses, (one-fourth of a grain every half-hour), as suggested by Loomis. The author's preference is for this method.

Opium Treatment. — After citing various authorities for and against opium, the author says the use of opium in dysentery as an antiphlogistic, is not based on known properties of the drug, and the mere fact that patients survive even large doses does not counteract the strong objections to such an employment of it. It destroys the appetite, impairs digestion, favors the retention of decomposing and fermenting products, and can be justified only by a clear demonstration of its superiority over other less hazardous methods. Such proof we certainly do not possess.

Purgatives. — Probably most, if not all, of the good effects from purgatives come from the cleansing of the intestinal canal. For this purpose it probably matters but little, which of the milder purgatives is used. Some prefer the salines, others castor oil. The latter is disagreeable to sensitive stomachs, and has no special advantages. Purgation in acute cases every second or third day is all that is required. It is objectionable in adynamic cases and unnecessary in the not infrequent cases with diarrhœal rather than dysenteric dejections.

Calomel. — This drug has of late years fallen into general disfavor. Dr. H. C. Wood, however, says that in his hands it has yielded better results in acute sthenic dysentery than any other remedy.

Corrosive Sublimate. — The best results are obtained from this in acute cases, especially in those in which the stools are bloody and slimy. It should be given in small doses (one one hundred and twentieth to one sixtieth of a grain hourly), with or without one or two drops of laudanum.

Bismuth Subnitrate is probably useless for arresting the morbid process in its early stage, but when the stools have become diarrhœal in character, this remedy has a certain value from its sedative, astringent and possibly its antiseptic effects.

Salol. — Very favorable reports from its use have been made in recent years.

Nitrate of Silver, solution of the pernitrate of iron, tannic and gallic acids, catechu, krameria, and hæmatoxylon are useless, and may be even injurious in acute dysenteric affections, but are often valuable in chronic forms.

The local treatment by topical applications to the rectum, or by flushing the entire canal below the ileocœcal valve, has grown rapidly in favor in late years. The favorable reports with medicated solution have been due in large measure to the sedative action of the heat or cold, and to the mere removal of the irritating material from the surface of the mucous membrane. In the author's hands, no topical application has proved so efficacious in chronic dysentery as large enemata of nitrate of silver, one or two grains to the ounce.

Dietetic Treatment. — Although no article of food agrees so generally with these patients as milk, yet this diet needs careful watching. The stools should be examined habitually for undigested curds; and when these are present, the milk must be reduced in quantity, or given in another form, or abandoned entirely, at least for a time.

Meat. — In cases of long standing the patients are always anæmic, and full nutrition is essential. In no way can this indication be met so well as by meat, in an easily assimilable form, such as scraped meat, raw or partly cooked, salted and peppered to the taste of the patient; or, when bread can be digested in small quantities, scraped-meat sandwiches with the thinnest possible layers of bread, or even tender cooked meats in the usual form, when the patient can be relied upon to masticate them perfectly.

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[1] Dr. Councilman's paper will appear in full in an early issue of the Journal.

TREATMENT OF ACUTE DYSENTERY BY ANTISEPTIC COLON AND RECTAL IRRIGATION,

by Dr. W. W. Johnston, Washington.

The adoption of a rational and successful plan of treatment in dysentery must be based upon a consideration of

(1) The localization of the disease in the colon and rectum.

(2) The intensity of inflammatory process, and rapid infiltration of tissues.

(3) The tendency to early ulceration, and to necrosis and extensive destruction of tissue; the decomposition and retention of decomposing solids and fluids in the bowels, with the resulting danger of auto-infection.

(4) And lastly, the probable dependence of all these conditions upon the introduction of a parasite, which finds its most favorable field for growth and multiplication with the resulting production of a chemical poison in the colon and rectum.

The condition of the colon and rectum in dysentery:

Retention of decomposing fluids within the rectum, from imperfect emptying of the cavity and spasmodic contraction of the sphincter; rectum is never completely emptied.

Advantages of the irrigation treatment in this connection.

Reference to the history of the treatment of dysentery by (*a*) cold and warm water irrigation; (*b*) by antiseptic irrigation. Reference to recent successful reports on this method of treatment.

Methods of irrigation and antisepsis of the colon and rectum. Injection, not irrigation.

Dr. Dabney's paper on

HEPATIC ABSCESS

was based chiefly on a study of 108 cases of this disease, which had been collected from various sources. When considering the causes of this affection, however, he called attention to the great rarity of any connection between diseases or injuries of the head or of the bones and abscess in the liver.

It would appear also, from the cases which he has collected, that while a large proportion of hepatic abscesses are due to diseased organs connected with the portal system of vessels, there is also a large proportion in which no evidence of disease or injury of any of those organs was forthcoming.

So far as any light can be obtained from an analysis of these cases, it would seem that the abscesses due to dysentery may be either large or small, single or multiple, and that very little information can be obtained as to the number and size of the abscesses in a given case from a knowledge of its cause. He states also that abscesses due to injury are not as apt to be adherent to the abdominal walls as would naturally be supposed, nor are there any definite symptoms or signs which will show whether such adhesions exist in a given case. Pain and tenderness and œdema of the skin over the liver, which have been thought to show the presence of adhesions to the abdominal wall, were absent in some of the cases which he collected in which adhesions existed; and, on the other hand, they were present sometimes when there were no adhesions.

In considering the symptoms and signs of hepatic abscesses, he calls attention to the fact that large abscesses may exist without giving rise to any symptoms or signs during life; and he shows by reference to cases occurring in his own practice and to others reported by Councilman and Lafleur that aspiration sometimes fails to reveal the presence of pus even when a large needle is used and the abscess cavity is entered by it. He refers also to the influence of the number of abscesses which may be present or the propriety and result of operative measures of treatment, and considers free incision and drainage indicated in all cases where pus is present, unless it is being freely discharged, and there are no evidences of absorption, or unless the patient's general condition is such that no operative treatment even of the simplest character, would be safe.

He compares the results of aspiration on the one hand, and incision and drainage on the other, and shows that the latter is by far the best mode of treatment.

SECOND DAY, WEDNESDAY. — AFTERNOON SESSION.

A CASE PRESENTING THE SYMPTOMS OF LANDRY'S PARALYSIS, WITH RECOVERY,

by Dr. F. T. Miles, of Baltimore.

A man aged thirty-three, well built, rather corpulent than muscular, temperate in all his habits, and accustomed to lead a quiet life; previously in good health. On November 26, 1891, he took cold. On November 28th, he got wet by rain. During this time he had at intervals pain in the calf of the leg. About December 1st he observed "a cold feeling across his toes, also the same cool feeling in the left upper lip." December 6th, on attempting to go up-stairs, found he had not power to raise the left leg from one step to the other without serious exertion in the way of dragging it. In a few days took to his bed, being unable to "hobble around any longer." The feeling of coolness and numbness continued to get worse and to extend upwards on his legs to the knees and also invaded the hands and arms to the elbows, the muscular power steadily failing from the lower extremities upwards.

On December 17th his condition was as follows: The lower limbs completely paralyzed, but not emaciated or flabby. The muscles of the trunk and belly were greatly weakened. Hands and arms quite weak, with a tendency to the position of wrist-drop. Shoulder movements good. The face was not affected. Sensation was apparently normal except that the sense of tickling in the sole of the foot was nearly or quite lost.

Power of localizing correctly any point of the foot touched was retained. Farado-cutaneous sensibility apparently normal. Could distinguish hot and cold objects. No pain elicited on pressing the muscles. Reflexes, both superficial and deep, completely lost. To the faradic current the muscles responded normally. To the galvanic current the muscles responded normally, contracting quickly without a sign of degenerative reaction, with no quantitative or qualitative alteration. The muscles also contracted from nerve stimulation. The sphincters absolutely intact.

After this, for three or four days, paralysis increased in the upper extremities until he could no longer use his hands. The abdominal muscles became so weak that he could not cough. The facial nerves now became involved in all their branches, most markedly on the left side. He could not frown, could not close the left eye, could not whistle. His breathing became oppressed and he had several attacks of threatened suffocation. The heart was not affected either in frequency or force.

At this point the progress of the disease seemed to be arrested; and then improvement, especially of the respiratory symptoms began, and proceeded somewhat rapidly, the face and arms recovering first. On the first of January, 1892, he could raise himself in bed; on the 7th, sat up on the side of the bed; next day, dressed himself; on the 14th, was able to walk alone; and on the 20th, was able to leave the house. About a month later his limbs were not thinner than natural, though still a little weak. The patella reflex was still absent.

A CASE SHOWING THE SYMPTOMS OF LANDRY'S PARALYSIS, RECOVERING,

by **ALEXANDER MCPHEDRAN**, Toronto.

George E. W., a clerk, aged twenty-six. With the exception of malarial fever fifteen years ago, has always been healthy.

His present illness began December 2, 1891. For three or four days before this, he noticed some uncomfortable sensations in the feet, which he supposed due to his boots. On the evening of December 2d, after stooping to close the safe, he found it difficult to rise again to the erect position. Next morning, on rising he found his legs very weak; was able to dress and walk down-stairs, but had immediately to lie down on a sofa. While dressing, he first found trouble in his hands; some muscular pains in forearms and shoulders. Electrical reaction normal.

December 4th. Paralysis of all the extremities complete; those of trunk and neck also involved, so that the head could scarcely be raised from the pillow. Speech, swallowing and breathing unaffected; sensation normal; bladder and rectum acted normally; knee-jerk absent.

December 10th. No change noted in symptoms until to-day, when speech became somewhat thick.

December 12th. Swallowing slightly affected, so that there was considerable difficulty in taking soft food. This difficulty soon improved and disappeared in a few days.

December 13th. Some pain in lumbar region; relieved by heat. It recurred frequently for a week.

December 20th. Reflexes still absent; no wasting; no tendency to bed-sores; able to move the hands and forearms slightly.

January 1, 1892. Power of motion has returned in all the extremities to a slight degree, being most advanced in the upper. He is able to maintain the sitting posture in an arm-chair, and can hold the head erect for a few minutes without support. Knee-jerk quite distinct in right and very slightly developed in left knee.

February 3d. Able to walk a few steps unsupported; uses his hands freely, though the muscular power is still very weak.

He continued to improve and was soon able to walk freely; knee-jerk became somewhat exaggerated; no ankle-clonus. Sitting with his elbows resting on the arms of his chair and fingers extended, there was marked tremor of forearms and hands while the position was maintained.

April 20th. Looks vigorous and walks well, but if he allows the knees to bend much they give way under him; knee-jerk increased. Electrical reaction continued normal throughout. The spleen could not be felt at any time, although the area of dulness was slightly increased.

DR. CHARLES CAREY reported a case presenting the same line of symptoms as the other cases reported, except that there was involvement of the sphincters, and the pulse ran up to 130 beats per minute. The paralysis began in the lower extremities, below the knee, and crept up gradually, the abdominal muscles and both upper extremities becoming involved. There was much respiratory difficulty; deglutition as well as articulation became absolutely lost; she was able to whisper, but there was no phonation. There was no loss of sensation. This patient has made a complete recovery, improvement beginning above and gradually extending down the entire body. The case was seen by several eminent specialists, who all agreed that it was a case of so-called Landry's paralysis, or acute ascending paralysis.

DR. W. H. THOMPSON: It seems to me that the involvement of the sphincters rather excludes this case from Landry's paralysis. I have had one case in which the usual course of rapidly-developing ascending symptoms, ending in death, occurred, and in which nothing in the shape of peripheral neuritis nor any centric lesion was found by Professor Delafield, who made the post-mortem. A case now in Bellevue Hospital has an interesting history. He was paralyzed first in the left leg, then in the right, then in the lower part of his body, then in both arms; then difficult respiration occurred, and there was entire paralysis of the lower jaw. No trouble with micturition or bowels. These symptoms all passed off, except some weakness in mastication and moderate weakness in the upper extremities, the right being more affected, and permanent weakness in the lower extremities. His gait is neither ataxic nor paraplegic.

A STUDY OF ANÆSTHESIA AS A GUIDE TO THE LOCALIZATION OF LESIONS IN THE LOWER SPINAL CORD AND CAUDA EQUINA,

by **DR. M. A. STARR**, New York.

Necessity of careful examination for small areas of anæsthesia in lesions of the lower spinal cord.

Collection of eighteen cases (six original), in which small, peculiarly shaped areas of anæsthesia were present, and in which the situation of the lesion could be determined either by autopsy, or at operation, or by other symptoms.

From these cases an attempt is made to assign to each segment of the sacral and lumbar segments of the cord, the area of body surface from which it receives tactile impressions. Diagrams were distributed.

A STUDY OF THE SEASONAL RELATIONS OF CHOREA AND RHEUMATISM FOR A PERIOD OF FIFTEEN YEARS (1876–1890),

by **DR. MORRIS J. LEWIS**, Philadelphia, Pa.

(1) Study based upon the months of onset of 1,383

separate attacks of chorea and 673 separate attacks of acute inflammatory rheumatism; 666 of the attacks of chorea occurred in Boston, the rest in Philadelphia.

(2) Comparison made with the meteorological records of Boston and Philadelphia during the same period of time.

(3) Chorea and rheumatism evidently *seasonal* diseases.

(4) Fewest attacks of chorea occur in October and November, and the greatest number in March and April.

(5) The greatest number of attacks of rheumatism occur in April, and the fewest in the autumn months.

(6) Considerable resemblance, in general form, of the tracings for the diseases in question to the tracings showing the number of "*storm centres*" passing within 400 miles of the two localities mentioned; also marked resemblance to tracings showing *mean actual barometer* and *mean relative humidity.*

(7) Close resemblance of chorea and rheumatism tracings to the record showing the monthly variation in the amount of general sickness in the community; relation probably not one of cause and effect, but both conditions due to same cause.

(8) Over-study considered a predisposing, not an exciting, cause of chorea, acting in conjunction with meteorological conditions, probably the most active etiological factor.

Dr. M. A. Starr: The points that have been brought up by Dr. Lewis are pretty fully covered by statistics which I have kept for the past four years at the Vanderbilt Clinic, New York. The tables that the doctor has presented coincide quite closely with the chart that I have prepared from these cases of my own. The doctor's highest month is March; my highest month is April; his lowest months are October and November; my lowest month is December.

Regarding etiology, it seems to me that over-study is not a very decided cause of chorea. I see very few cases amongst the classes who do the most studying. I find that 65 cases are decidedly assignable to fright. We cannot trace all causes of this disease to weather nor to mental work, but must look for a number of etiological factors.

As regards rheumatism, eighteen per cent. of my cases had a distinct history of rheumatism preceding the attack of chorea. The heart was found to be normal in 199 out of 356 cases. An organic murmur was found in 64, a functional murmur, subsequently disappearing, in 56, and the heart was not examined in 37.

It seems to me that the reason why chorea occurs mostly in the lower classes and in the spring of the year is to be found in the fact that in spring those elements which are likely to produce disturbances of nutrition then culminate, — the confinement, more or less physical and mental strain, etc.

Dr. S. Weir Mitchell: The class of cases that we deal with at the clinic of the Infirmary for Nervous Diseases is so much above the tenement-house class that the conditions that apply to one would hardly apply to the other. It is the mechanic class and those a little above them with which we have to deal, and they live in Philadelphia in an atmosphere of comfort not enjoyed by that class in any other city. I am still in doubt as to the complete etiology of the disease, but think Dr. Lewis's paper a great advance upon any knowledge we have had hitherto. I hardly believe that mental strain has much to do with the matter. The conditions stated by Dr. Starr ought to apply more strongly to the class of blacks, and yet chorea amongst the blacks is practically unknown.

Dr. Henry: In studying the relations between chorea and rheumatism, it must be remembered that there are other manifestations of rheumatism than the articular. It is universally admitted that tonsillitis is a manifestation of rheumatism. It is believed by some that certain skin eruptions, especially erythema nodosum, is a manifestation of rheumatism. If these things are borne in mind, I think the relation between chorea and rheumatism will be found to be more intimate than at present appears.

Dr. Jacobi: I believe Dr. Starr to be correct in attributing the predisposition to chorea not so much to over-study alone as to the results of over-study and similar causes. As a rule, we find that choreic patients are either underfed or are hydræmic or in a condition of ill-nutrition. In the spring time the system of every one is run down, not so much by over-work but because during the winter windows are not opened and people are less exposed to fresh air.

For many years I have been of the opinion that chorea minor is to be attributed largely to acute rheumatism. Many cases of rheumatism in childhood are not diagnosed. Many of these cases have no articular symptoms. I have seen many cases in which chorea was the first symptom to appear. I have seen three or four cases in which there was an alternation between choreic and rheumatic symptoms. The so-called "growing pains" that come on every few months are often the results of rheumatism.

Dr. H. M. Lyman: In my own clinic my experience coincides with that of Dr. Starr, namely, that while the majority of cases are sickly, they are not of a class who are worrying their brains with study. In almost all cases there is a history of consumption or rheumatism or of some other cause of debility preceding the outbreak of chorea; not necessarily in the child itself, but a hereditary precession of such causes.

Dr. M. J. Lewis: The children coming to the Infirmary with chorea belong to an unusually intelligent class, and are themselves, as a rule, very intelligent.

In my experience with chorea I have seen only four colored children affected with the disease.

The rheumatism records are taken from the Pennsylvania Hospital and are all from adults. They are not taken from the same cases as chorea.

I do not see why, if the disease is due to undernutrition it should develop just at the time in the spring when the windows are opened and the children allowed to breathe the fresh air.

Dr. W. H. Thompson: If fright, as Dr. Starr intimates, is an element in etiology, then the statistics given us would go to show that there are more people frightened in April than in any other time of the year.

Dr. Musser: It has occurred to me that the difference in the number of cases of chorea in different seasons of the year might partly be accounted for by the diet of the patients; thus, as winter comes on, the diet of this class of people changes almost entirely, and they live on starchy foods and meats. As a culmination of this starchy diet, the confinement of the winter and bad hygienic conditions we have the development of a large number of these cases in the early spring. As they begin to use fresh succulent vegetables and take more fluids the curve for these diseases falls.

(To be continued.)

AMERICAN MEDICAL ASSOCIATION. SECTION IN THE PRACTICE OF MEDICINE.

FIRST DAY, TUESDAY, JUNE 7TH.

THE RELATIONS OF BACTERIO-CHEMICAL RESULTS TO PROPHYLAXIS AND THERAPEUTICS,

was the title of a paper by **Dr. Robert T. Edes**, of Boston, Mass.

The great progress of the year has been along the line of investigating the poisons which are the result of germ activity, their nature, and their effects. It has been shown that many germs produce an alkaloid, and as well a poisonous albumin or albumose. Fever itself was undoubtedly the result of some such substance, which acted by its influence on the heat-centres.

Researches also had recently been carried on regarding the absorption of nitrogen by plants from the air. It had always been supposed that this element was derived from the soil in plant formation; but certain plants, especially the bean family, can grow in a soil entirely devoid of nitrogen and yet form nitrogenous compounds. This property seemed to depend on the presence on the plant, or rather on its surface, of a certain bacillus.

Another most important topic which had received attention during the year had been that of immunity. We had come to believe that much depended on the condition of the blood, either its fluid elements (possibly blood-germs) or the leucocytes, more probably the latter. Furthermore, the products of germ action (toxine) seem, after reaching a certain degree of strength, to inhibit their own activity. An analogous illustration was seen in the power of a certain percentage of alcohol to check fermentation, though it was a product of the latter. Such a method was as yet unavailable in the human system. Koch's tuberculin was not to be condemned as a failure. It was an attempt along a line which is likely soon to witness a great and fruitful development. Closely allied to the doctrine of immunity is that of resistance to disease. We do not know why some persons can meet with impunity an exposure to which others would succumb. Animals, if starved, will be overcome by an amount of bacterial poison without effect if they were properly nourished; and, furthermore, over-feeding will enable them to withstand a much greater dose of the disease-poison. There is in each system a certain protective element which comes in contact with the product of our usual contagious diseases and destroys the toxines of the latter, thereby protecting the system from the further inroads of the same kind of poison, but rendering it more liable to succumb to other kinds. So far as treatment was concerned, emphasis was to be laid on two special points. There was great danger from the flesh and milk of tubercular animals. There was not, in the writer's opinion, much risk from mere association with phthisical patients. The latter should be cautioned against scattering their sputa around. Special attention should be paid to nutrition and climate. So far as the latter had reference to lung cases, a lofty, dry place was preferable, because the air was relatively free from germs. It also acted as a general tonic, and the increased pulmonary activity it occasioned was in itself a favoring circumstance.

All of these questions had to be looked at from a different stand-point so far as the scientific worker was to be compared with the chemical student. The problems of the sick-room were not those of the laboratory. It was difficult to free clinical work from personal errors, but we should faithfully report our results, good or bad.

IMMUNITY.

Dr. Kinsman, of Ohio, gave an account of some experiments which had been made in that State with reference to hog cholera. Immunity is, he thought, only a relative term. Our ideal should be absolute protection. Our present trouble is that our doses of remedies strong enough to kill the germ or inhibit the products of its life activity are also strong enough to harm the patient. In several of the Western States attenuated cultures of the hog cholera-germs were given to animals, with good results. They could then be pastured in fields and thrive where uninoculated animals speedily died. The culture medium used in the experiments detailed by the speaker was sterilized human urine. The fluid inoculated was diluted to about one-sixth of its original strength, the cultures being kept at blood temperature, and the sterilization of the urine being accomplished by the customary methods.

The fact was that in many of our investigations we did not know exactly what the cause of the disease was, and hence, while we approximated toward perfect immunity, we could not quite reach it.

Dr. W. J. Scott, of Cleveland, O., thought there was some doubt as to whether in our dilution by attenuated virus we are not also altering the nature of the poison, so that we have to deal with a morbific principle different from the one which is the result of the first generation of germs. As regards the effect on the body temperature, anything which disturbs the relations of the system and the products of nutrition and waste will cause increased chemical activity, and that we know is always a source of heat.

Dr. Denison, of Colorado, had recently received a letter from Koch, of Berlin, in which the latter disclaimed ever having admitted that tuberculin was a failure. The speaker himself had unbounded faith in its future. He also alluded to recent experiments made with a piece of the thymus gland as a culture fluid. Tetanus germs had in fourteen days been rendered from three to five thousand times less powerful than the original cultures.

Dr. Greenwood, of Kentucky, did not believe that hog cholera was altogether a contagious disease. It would skip about from one farm to another in a given locality, while animals on intervening farms were not affected. In one instance live hogs ate the bodies of their kind who had died of the cholera, and the disease was soon checked in the entire drove.

Dr. S. P. Kramer, of Cincinnati, reviewed the work which had been done by German observers during the past year with reference to immunity, laying special stress on the "anti-toxines" developed by adding to the blood of an animal one of the peculiar albumoses produced by bacterial action. If we could isolate the latter by injecting it, we could with the aid of the union with the blood cause immunity. In these experiments on animals there was always the danger that the attenuation product may revert to its original type, and so offer no stay to the ravages of the disease. It was interesting to know that if goats were thus rendered immune to tetanus, the immunizing principle appeared in the animal's milk.

ETIOLOGY OF SPECIFIC DISEASE.

A paper with this title was read by **Dr. R. French Stone**, of Indianapolis, Ind. It was a historical review of the various theories which have prevailed in times past with reference to the exact nature of specific disease. He took strong ground against the wholesale acceptance of the present products on the germ theory of disease.

RECENT INVESTIGATIONS OF THE ETIOLOGY OF DIABETES MELLITUS,

was the title of a paper by **Dr. S. P. Kramer**, of Cincinnati.

No less than twenty-seven theories had been put forth with reference to the cause of diabetes; it had been found that the pancreas was at fault in fully one-half of all the cases. The removal of the organ in animals was always followed by the malady. If it was partially removed, the disease remained absent, providing one-tenth of the original bulk of the organ was left *in situ.* Ligature of the duct gave negative results. These results, seen in dogs, were duplicated in cats and swine, but not in birds. In dogs in whom the malady supervened after the removal of the organ, if they were fed on pancreas no relief ensued, but the latter did follow if bits of the organ were transplanted back into the interior of the abdominal wall; if they were fed on glucose it was used up in the system and none excreted, but not so with condose. As the result of a long series of experiments, Dr. Kramer expressed the belief that the organ supplied to the blood a glycolitic ferment by which the sugar in the blood was destroyed, but if the viscus was removed the absence of the ferment, which resided chiefly in the white cells of the blood, caused the glycosuria. He did not offer this as an exclusive view, the ferment was found in the blood at its maximum four or five hours after removal from the animal. Normally, the sugar of the blood combines with some albuminous principle therein for the general benefit of the system. In diabetes this does not take place.

HEPATIC ABSCESS.

Dr. George E. Fell, of Buffalo, related a case of hepatic abscess in diabetes. The pus eventually opened into the gut and the diabetes disappeared. This was evidence, in his opinion, the lesions of the pancreas were not the only factor in etiology.

Dr. S. Solis-Cohen, of Philadelphia, quoted the division of diabetics by a recent French writer into thin cases and fat cases. The pancreatic cases were in thin people, but not in the fat people. There was still another form, related in some way to the uric acid diathesis. Moreover, nowadays, the polydipsia and polyuria were more dreaded than the glycosuria. There was a malignant combination of the two former causing a fatal result even with no sugar. There was probably a group of cases here alike clinically, but differing in their etiology.

INFLUENZA.

Dr. John E. Link, of Terre Haute, Ind, read a paper on "la Grippe," in which he took the ground that the disease was not a germ disease, but one spending itself principally on the pneumo-gastric centre in the medulla. He thought that all the various aspects of the malady could be explained by this view. He had noted many cases with a peculiar paleness of the face, a milky whiteness of the tongue, and great prostration, with occipital pain, even before any active grippal manifestations came on. They had all yielded promptly to quinine and opium, but after recovery, if the former drug was stopped too quickly, they suffered severe relapses. Dr. Link doubted whether there were any real inflammatory or congestive properties belonging to true grippe. He believed we might have an inflammatory neurosis, say of the lung and bronchial tissue, with abundant serum, but it was not pneumonia. In many cases the out-pouring of the serum into the air-cells led to the death of the tissue and abscess formation. The physical signs were not like those of pure pneumonia. There was a loud moist râle in addition to the crepitation of pneumonia.

A MODIFIED FORM OF CONTINUED FEVER FOLLOWING THE EPIDEMIC GRIPPE,

was the title of a paper read by **Dr. John H. Hollister**, of Chicago, Ill.

This disease had seemed to increase the severity of all our endemic maladies. He had observed following the epidemic, many cases of continued fever which had been admitted to hospital classified as typhoid. He soon began to doubt the correctness of the diagnosis. A study of fifty cases had afforded the following data: No common cause could be assigned. Previous history was negative. Some had had grippe, but the majority not. The prodroma lasted four days, with extreme muscular soreness. The onset was gradual, no chill being noticed, but the fever was continuous without intermission. The average duration was twenty-three days. Relapses were common, but could be attributed in many cases to dietetic errors. There were no head symptoms or coma, and no subsultus. In four cases there was profuse sweating, lasting over ten days. The stomach was not troublesome. Secretions were all diminished, and there were no cutical discharges. The mouth was rarely dry, tongue not fissured, and no sordes. The dorsum was milk white. There was no tympanites or abdominal tenderness; no peritonitis, while the bowels were bound up. In only three cases did the stools suggest typhoid. No bacteria were found in the stools. The urine did not respond to the Ehrlich test, nor were any albumen, sugar or casts found. There was no rash. Dr. Hollister did not believe that the disease was typhoid. In treating the cases main reliance was placed on sponging and packs. Three cases died, one from pneumonia and two from exhaustion. No intestinal lesions were found at any of the autopsies.

The paper was also discussed by **Drs. Didama**, of Syracuse; **Cronyn**, of Buffalo; **Hemenway**, of Illinois; **Davis, Jr.**, of Chicago, and **Wilson**, of Michigan.

(To be continued.)

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MASSACHUSETTS MEDICAL SOCIETY.

Councillors Meeting.

The Annual Meeting of the Councillors was held at the Medical Library, Boston, on Tuesday, June 7, 1892, at 11 o'clock, a. m., the President, Dr. Amos H. Johnson, in the chair.

One hundred and twenty-two Councillors were present.

The Secretary read the names of 119 new, and of 47 deceased Fellows.

The Treasurer, Dr. Forster, reported the receipts for the year ending April 15th including the balance on hand at the beginning of the year to have been $12,318.63; and the expenditures, $10,456.98; leaving a balance of $1,861.65. The report was accepted.

The Committee on Membership and Finances recommended, and it was voted, that $1,400 of the surplus in the treasury be distributed among the District Societies.

On recommendation of the same committee, Fellows were allowed to resign, to become retired members, and to have dues remitted. Others were dropped from the roll for non-payment of dues.

The Committee on Publications presented their report. They announced Dr. William Osler of the Johns Hopkins Hospital, Baltimore, Md., as the Shattuck Lecturer at the annual meeting of the Society in 1893.

The Committee on Medical Diplomas recommended, and it was voted, that the following be added to the list of colleges whose diplomas are recognized for admission to the Society: Berkshire Medical College (prior to its closure), Medical Department of the University of Minnesota.

The Committee on the By-Laws of the District Societies recommended, and it was voted, that any proposed alteration or amendment of the By-Laws of any District Society be referred to the committee before such alteration or amendment is adopted.

The committee appointed to consider the petition of the Massachusetts Society for the Prevention of Cruelty to Animals, regarding vivisection, reported through Dr. H. P. Bowditch, as follows:

"*Whereas*, the Massachusetts Society for the Prevention of Cruelty to Animals has asked for some official action on the part of the Massachusetts Medical Society, in the form of a resolution, or otherwise, as to whether in their judgment any law, and, if so, what law, should be enacted by our legislature to restrain or limit the practice of vivisection by physicians, medical or other students, or pupils in medical or other colleges or schools, therefore,

"*Resolved*, That the Councillors are not aware that vivisections are practised in this State in an unnecessary or cruel manner.

"That the existing statutes furnish sufficient security against cruelty in vivisection, as well as against cruelty in general.

"That experience has shown it to be very undesirable to impose restrictions of any kind upon the advancement of medical science by the researches of properly qualified persons.

"That, in view of the above facts, it is, in the opinion of the Councillors, inexpedient to legislate upon this subject."

(These resolutions were passed in concurrence by the Society, on June 8th.)

The Librarian, Dr. Brigham, presented his annual report.

The following, as presented by the Committee on Nominations, were elected to the offices of the Society for the ensuing year: President, Dr. James C. White, of Boston; Vice-President, Dr. Francis A. Howe, of Newburyport; Treasurer, Dr. Edward J. Forster, of Boston; Corresponding Secretary, Dr. Charles W. Swan, of Boston; Recording Secretary, Dr. Francis W. Goss, of Roxbury; Librarian, Dr. Edwin H. Brigham, of Boston; Orator, Dr. J. T. G. Nichols, of Cambridge; Anniversary Chairman, Dr. George W. Gay, of Boston.

Voted, That the next annual meeting of the Society be held in Boston, on the second Wednesday in June, 1893.

The following Standing Committees were appointed:

Of Arrangements: Dr. J. T. Bowen, Dr. H. Jackson, Dr. J. Homans, 2nd, Dr. F. M. Briggs, Dr. J. C. Munro, Dr. A. Thorndike.

On Publications: Dr. G. C. Shattuck, Dr. B. E. Cotting, Dr. O. F. Wadsworth.

On Membership and Finances: Dr. F. Minot, Dr. F. W. Draper, Dr. J. Stedman, Dr. E. G. Cutler, Dr. L. R. Stone.

To Procure Scientific Papers: Dr. H. P. Walcott, Dr. H. L. Burrell, Dr. L. Wheeler, Dr. F. H. Zabriskie, Dr. S. B. Woodward, Dr. C. W. Townsend.

On Ethics and Discipline: Dr. G. J. Townsend, Dr. G. E. Francis, Dr. F. C. Shattuck, Dr. C. G. Carleton, Dr. E. Cowles.

On Medical Diplomas: Dr. E. J. Forster, Dr. F. H. Hooper, Dr. H. E. Marion.

A petition from Dr. M. E. Webb and others for a change in the boundary line between Norfolk and Suffolk Districts was referred to the Presidents of the Middlesex South, Norfolk and Suffolk District Medical Societies, to report at the next meeting.

A communication from the Bristol North District Medical Society concerning the inadequacy of fees for the commitment of the insane was referred to Drs. C. F. Folsom, F. A. Hubbard and F. B. Harrington, as a committee to report at a future meeting.

A communication regarding the bill to create a Cabinet Officer of Public Health was referred to Drs. H. P. Walcott, S. W. Abbott and Henry Jackson as a committee to report at a future meeting.

Drs. E. N. Whittier, J. O. Marble and F. W. Chapin, were appointed a committee to report at the next meeting regarding the Pan-American Medical Congress.

Dr. Williams presented an account of the life and labors of the late Sir William Bowman, an honorary member of the Society. It was voted, that Dr. Williams be empowered to prepare and send to the family of the deceased resolutions of condolence.

The Council adjourned at 12.20 p. m.

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BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Meeting of March 14, 1892, the President, **Dr. Frederick I. Knight**, in the chair.

Dr. J. W. Farlow reported

A CASE OF SUDDEN DEATH IN A RUBBER FACTORY: INQUIRY INTO THE EFFECTS OF THE INHALATION OF NAPHTHA.[1]

Dr. E. S. Wood: Within the past year a case of this kind came under my observation, a legal case, in which a boy employed in the rubber works in South Boston, it was claimed, had not been warned in regard to any unfavorable effect which the naphtha vapor might have upon him. His work was to regulate some part of the machinery intended for pressing the rubber. The rubber was placed in the tank in which were forty gallons of naphtha, and allowed to remain until it had become of suitable consistency, that is, it was largely dissolved; no bisulphide of carbon was used. Then this solution was allowed to flow slowly from the tank between a couple of rollers, and there rolled into sheet rubber. When the rubber was rolled out into sheets and as it was poured between the rollers there was a large surface exposed to the air, and a great deal of naphtha vapor escaped. This boy was directed to insert a wedge in some portion of the machinery near the cog-wheels, and his statement is that the room was not very well ventilated; at any rate, he was exposed to the action of an unduly large quantity of naphtha vapor. When he went to insert the wedge, where he was instructed to insert it, he became dizzy. To prevent himself from falling, he grasped at the first thing he could and got his hand caught in the cogs, and received such an injury that it necessitated his being carried to the City Hospital and his arm amputated. This case went to trial and the jury disagreed. There did not seem to be any doubt in my mind but what the boy was made dizzy by the effect of the naphtha vapor, and the inquiries made at the refining works at Atlantic City have shown that the workmen employed at those departments of the work where there are large quantities of vapor are liable frequently to be made dizzy and have a species of intoxication, which may go so far as to produce complete unconsciousness. I have never seen any record of convulsions having been produced, but there are records of cases of unconsciousness, although the patients, as a rule, recover as soon as carried into the fresh air. There are some records which have been given showing that there may be even such an amount of cerebral disturbance as to produce a sort of acute delirium, from which the patient recovers as soon as carried into the fresh air; there is also the record that one of the superintendents at Point Breeze, although accustomed to inhale naphtha vapor, went to investigate a leak in one of the naphtha canals and was made unconscious in two minutes; and there are some statements recorded to the effect that an adult may be made unconscious in from two to seven minutes after the inhalation of a few grammes of naphtha vapor. The workmen employed in handling the light naphthas, gasolene, rhigolene, etc., in pouring by means of pails from the tanks into casks or barrels may inhale a sufficient quantity to be made dizzy, to have ringing in the ears, and more or less of the first symptoms of intoxication, and unconsciousness has been produced in those cases in workmen. I have seen a statement that death has occurred, although in the vast majority of cases recovery takes place immediately upon the patient being taken to the open air. Death has resulted from the unconsciousness produced in those engaged in cleaning the tanks in these refining works and working in confined spaces where there has not been proper ventilation.

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[1] See page 621 of the Journal.

Dr. Sturgis: I have been rather interested in the workers in rubber factories for the last three or four years. All the cases have been chronic. I have not been able to deduce much from the cases I have seen. They generally occurred in the women engaged in making up gossamer cloth. The effect seemed to be cumulative. Girls would work some months or years before they were affected. The heart seemed to be most affected. There was a tendency to syncope and a good deal of præcordial distress and palpitation on the least exertion. The pulse in most cases was very feeble, and the first sound of the heart sharp and short. Generally there was a hæmic murmur, and there may or may not have been a venous hum in the neck. Menstruation was generally scanty. A good many of the patients complained of dizziness. I found that the cases were all rather difficult to treat, did not yield to the treatment of ordinary anæmia. Iron did not seem to do much good although the stomach was generally in good condition. I generally used Fowler's solution and manganese.

Dr. Knapp: I have seen quite a number of women working in the various rubber factories, but I have not seen any who presented any symptoms which I was disposed to ascribe definitely to naphtha. The majority of the cases have been cases such as we see very commonly in working women who do not work in rubber factories. They were anæmic and debilitated, neurasthenic, and complained of the ordinary run of rather indefinite symptoms. As a general thing, they seem to be underfed, living in rather poor hygienic surroundings, and most of them seemed to improve with considerable rapidity when properly fed and their supply of tea was cut off. Their trouble seemed clearly due to ordinary causes and not to naphtha. They were given an ordinary tonic. I recall now but one case where I thought the symptoms were due definitely to the work in the rubber factory. That was a man who had been working in a factory for some time and had been using in addition to the naphtha, bisulphide of carbon. He had some slight symptoms of pain and weakness and paræsthesia in the arms. It seemed to me a very slight multiple neuritis which I supposed was due to the bisulphide of carbon; it was more likely to be due to that than to the naphtha. He had a still slighter neuritis in the legs.

Dr. G. B. Shattuck: I remember two patients at the City Hospital, girls who had worked in a rubber factory. They had marked anæmia and debility and a slight neuritis. They had not had to do with the bisulphide of carbon, and they did not respond to the treatment for anæmia.

Dr. W. D. Hodges: I should like to mention the case of a man who was engaged in filling a receiver with gasolene, and after having almost emptied the barrel a leak was discovered in the receiver. He entered the gas-pit, which was six feet square, to stop it, and was immediately rendered unconscious. Upon removing him from the gas-pit consciousness soon returned.

Dr. Farlow: It is important to bear in mind when inquiring into the complaints of workers in rubber factories, that in some parts of the work considerable naphtha is used, for instance, in the room where cloth is covered with liquid rubber, while in other parts very little or no naphtha is used and the symptoms must be due to something beside naphtha.

SPECIMENS.

Dr. Farlow showed a myxo-sarcoma which he had removed from the left nostril of a patient thirty-two years of age. A year ago there was evidence of ethmoid disease, but no tumor. The growth was removed with the cold snare and hæmorrhage was profuse. He also showed a very large piece of adenoid growth which he had removed by forceps from the vault of a child four years old.

Recent Literature.

Treatise on Gynecology, Medical and Surgical. By T. Pozzi, M.D.. Translated, and with additions, by Brooks H. Wells, M.D. Vol. II. William Wood & Co. 1892.

When the first volume of this work appeared about three months ago, we reviewed it, and expressed our high opinion of its value, as the best exponent of the best teaching of the French school. This second volume completes the book, comprising four chapters on Inflammation of the Uterine Adnexa, five on Neoplasms of the Uterine Adnexa and Ligaments, three on Genital Tuberculosis, Intra- and Extra-Peritoneal Pelvic Hæmatocele and Extra-Uterine Pregnancy, four on Diseases of the Vagina, seven on Diseases of the Vulva, three on Malformations of the Genital Organs, and two on Diseases of the Urinary Tract, Rectum and Pelvis.

Diagnosis and Treatment of Hæmorrhoids and other Non-Malignant Rectal Diseases. By W. P. Agnew, M.D. Second edition. San Francisco, Cal.: R. R. Patterson, publisher. 1891. 148 pages. Illustrated.

This book is concisely, attractively written, and is intended by its author to present in plain, comprehensive language methods of treatment of the affections designated in its title, which are of actual value and can be depended upon to accomplish what is claimed for them by their advocates. It is an interesting work. Its chief feature is the importance and value assigned by its writer to the use of carbolic acid for the radical cure of hæmorrhoids and fistulæ. The book is well written, the facts and details clearly, very accurately stated, so that the reader will have no difficulty in understanding or testing the methods recommended. It seems worthy of a careful perusal.

A Treatise on Diseases of the Lungs and Pleura. By the late Wilson Fox, M.D., F.R.S. Edited by Sidney Coupland, M.D.. F.R.C.P. Philadelphia: P. Blakiston, Son & Co. 1892.

It is difficult to estimate the amount of labor which Dr. Fox has expended in preparing this volume. Not only is each article written in fulness and attention to detail which makes the book practically unique in its field, but the text is enriched by such copious references to other works and to periodical literature as to give a very complete bibliography of each subject. In fact, such references are so frequent from the author's evident desire to do justice to others as to suggest a compilation, but to quote the preface "his reputation as a clinical observer and a profound pathologist is too well established to be affected by any mistaken inference from this characteristic of all his writings." As was to be expected from Dr. Fox's special interest in the subject, the article on Pulmonary Tuberculosis would be particularly thorough, and it occupies over a third of 1,200 pages, but those on pneumonia and pleurisy are also very complete, and the same care is seen in the preparation of the shorter chapters. Dr. Fox speaks with the authority of a large clinical experience and wide reading, and his book deserves to become a classic. Whatever additions have been rendered necessary by investigation and discoveries since the author's death, to bring the text up to date, have been made by the editor.

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URINARY INFECTIONS.

The urine contained in the bladder and kidneys of a man in perfect health is aseptic. The urethra is normally inhabited by germs, which may contaminate the urine in its passage outwards. The microbes of the urethra are bacilli and micrococci, inoffensive under some circumstances, pathogenic in others. The *staphylococcus pyogenes aureus* is one of these micro-organisms of the urethra. Purulent urine, from an inflamed urethra, bladder or kidney always abounds in micro-organisms: among these are especially to be mentioned the *staphylococcus aureus, albus and citreus*, the *streptococcus pyogenes*, the *uro-bacillus liquefaciens septicus*, and the *bacillus non-liquefaciens.* The latter, says Guyon, has a preponderant rôle in urinary infections. Halle and Albarran describe it under the name of *pyogenic bacterium*, Guyon thinks it identical with the *bacterium coli commune.*

These microbes may exist in morbid urine either singly or associated; two, three, or more species infecting the same bladder. The gonococcus of blennorrhagia and the bacillus tuberculosis are also met with in the urinary passages under circumstances of specific infection.

The micro-organisms found in purulent urine are to be regarded as the agents of the suppuration which they accompany. This appears to be a fair inference from all the facts which have been accumulated by a multitude of observers the past thirteen years. All these pyogenic bacteria have the property of producing pus in the subcutaneous cellular tissue; all are capable of causing cystitis; the injection of their pure cultures into the bladder under circumstances of temporary retention, or traumatism of the mucosa, provokes suppurative cystitis.

The micro-organisms may find access to the urinary apparatus in two ways: they may come from the outside environment and penetrate the urethra, ascending to the bladder and kidneys. This is direct primary infection, and is the rule. In other cases, the organism is first infected, and the kidneys are secondarily infected through the blood.

Spontaneous infection of the bladder in man does not exist (Guyon). In woman this is often observed, owing to shortness of the urethra and feeble occlusion.

In the pathological state, spontaneous infection is frequent in both sexes. Septic inflammation of the urethra propagates itself to the bladder. Oftener, still, the infection is provoked. The bladder is contaminated by a urethral injection, by the introduction of a septic sound or catheter.

Whether the bladder may be infected by an aseptic catheter introduced through a normal ureter may, practically, be answered in the negative. The accidents of catheterism have, in fact, virtually disappeared, since sterilized instruments have been used.

Secondary infection of the urinary apparatus belongs to the pathological history of general infectious diseases. It begins with the kidney by one of those infectious nephrites described by Bouchard, and generally remains limited to this organ. Rarely it causes secondary cystitis by taking a descending course.

The penetration of the microbes into the bladder is one condition, but not the only condition of its infection. There must first be receptivity. Receptivity is created by divers causes. The most active are distention of the bladder, stagnation of the urine, traumatisms of the mucosa, neoplasms. In order that the bladder may be contaminated some lesion, or at least stagnation of the urine, seems necessary. Microbes are often introduced into a normal bladder without, thereby, infection taking place; the first flow of urine sweeps them all away before they have time to begin their pathogenic action.

According to experiments of Guyon and Albarran, the injection of microbes into the bladder of a healthy animal is generally unattended with any morbid effect; but if you add retention from any cause, or if you wound and inflame the mucous membrane, infectious cystitis sets in.

As to how the microbes produce suppuration in the bladder — this is probably brought about directly by virtue of the pathogenic properties of the microbes (Guyon).

When suppuration is established in the bladder, it may long remain localized in this organ; this may be said to be the rule with cystitis. But cases are only too numerous where the pathogenic agent ascends along the ureter to the kidney, infecting that organ, producing a radiating nephritis, suppuration, and all the lesions of the surgical kidney.

The experimental demonstration of the pathogenic action of the microbes of the urine on the kidney, has been fully given. The injection of a pure culture of these organisms into the ureter followed by ligature of that duct constantly produces in the animal all the lesions of ascending suppurative nephritis. One of the most interesting portions of the little treatise of Albarran (*Etude sur le rein des urinaires*) is the chapter where he details these experiments. The microbes whose culture was made the material of experimentation were the bacterium pyogenes, the staphylococcus aureus and streptococcus pyogenes. The animal selected was the hare; the left ureter was chosen, as being more accessible than the right.

By the side of suppurative pyelo-nephritis, of infectious origin, we must mention certain sclerous nephrites without suppurations whose microbian origin has been demonstrated by the histo-bacteriological study of the kidney in man. In certain cases, these sclerous inflammations follow experimentally simple ligature of the ureter practised without antiseptic precautions. The principal feature of pathological histology is the enormous proliferation of connective tissue, the nodulated, shrunken condition of the kidney in advanced stages. In the human subject, renal sclerosis is a frequent result of obliteration of the corresponding ureter by a calculus or tumor; it has been witnessed in connection with prostatic disease (Albarran).

Guyon affirms that it is of the first importance to remember that it is the stagnation of septic urine in the bladder that favors the ascension of microbes to the kidney, and that on the regular and repeated evacuation of the bladder depends, before all, the fate of the kidney. Suppuration of the bladder is of little consequence as compared with renal suppuration; the latter is always accompanied by serious disturbances of the general health, while the former may long exist without serious constitutional damage.

With regard to the pathogeny of the general accidents of infection, and of urinary fever in particular, the necessary condition for the appearance of these accidents is the infection of the urine joined to the existence of a solution of continuity pathological or traumatic.

These accidents may appear spontaneously without any provocation; generally, however, they come on as the sequel of a surgical operation, catheterism simple or traumatic, urethrotomy, etc.

It is to the absorption of the septic urine (microbes and the toxic products which they elaborate) that we must refer the urinous fever. The presence of urinary microbes (the pyogenic bacterium alone or associated with the suppurative staphylococci and streptococci) has been noted both during life and after death in the blood of patients suffering from urinous fever. Albarran has found both the *bacterium pyogenes* and the *bacillus liquefaciens* in the blood at the onset of a chill.

Experimentation has proved the infectious nature of the urinary accidents. The injection of a pure culture of the microbes habitual to morbid urine (bacterium pyogenes, uro-bacillus liquefaciens) into the serous cavities, pleura and peritoneum, generally causes the speedy death of the animal; at the autopsy the micro-organism is found diffused in the blood and all the organs. Injection into the blood produces the same general infection, and often, also, infectious nephritis.

Nothing can be more interesting than the chapters in Albarran's monograph[1] in which he details the numerous experiments which he has made on animals, producing in them the entire symptomatology and lesions of urinary fever and infectious nephritis; experiments which an antivivisectionist sentiment would doubtless denounce, but which are fruitful in the addition of positive data to our knowledge. These results have been also admirably summed up in the exhaustive paper read by Professor Guyon to the recent French Congress of Surgery: "On the Pathogeny of the Infectious Accidents in Urinous Diseases," a paper from which we have freely borrowed.

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[1] Etude sur le rein des urinaires, Paris, 1891.

This secondary localization in the kidney of the infectious agent which has entered the blood under circumstances above mentioned, plays an important rôle in human pathology. There is no more formidable complication and termination of urinary diseases than this secondary infectious nephritis with its cortical miliary abscesses; it is called by Albarran and Guyon "descending nephritis" to distinguish it from the ordinary form where the infection is caused by ascent of the microbes from the bladder and ureter.

"We must," says Guyon, "admit along with the direct action of the microbe that of the toxic products which it elaborates in the urine of the bladder. These soluble products becoming absorbed are capable of giving rise to fever and the general constitutional symptoms, even where the microbe is not absorbed and diffused. The acute, grave form of urinary fever is due, assuredly, to true microbic infection of the blood. It is in these acute, fulminant, rapidly fatal forms that the presence of the micro-organism has been most often noted in the blood. At the same time, the appearance, so rapid and almost instantaneous, in some cases, of febrile accidents following repeated micturitions through a urethra which is the seat of lesion, their very short duration, their complete disappearance, justify the belief that a part of the symptomatology is due to soluble products. In these cases, the victory of the organism when it is complete, is, among other conditions, due to the healthy state of the kidneys. In those rare cases where death supervenes quite suddenly and with symptoms of great intensity, it is to the massive dose of the microbes absorbed and to their great virulence that we must attribute the fatality. Acute, prolonged urinary fever, with repeated attacks, indicates that the infection of the blood has been followed by secondary renal lesions. This is the theory which I maintained before the demonstration of the microbic nature of urinary poisoning, and which has always seemed to me to result from the interpretation of the facts. The renal lesions may get well in a considerable number of cases. It is, at the same time, the persistence and the profoundness of these lesions which cause death when it supervenes in the course of this grave form of urinous fever." [2]

There were 26 graduates at the annual Commencement of the Blackwell's Training School for Nurses, New York, which was held at Charity Hospital on June 15th.

MEDICAL NOTES.

Typhus Fever in Russia. — Typhus fever is increasing in those districts of Russia which are suffering from the famine. This is especially true of Kasan, Astrakahn and many of the cities on the Volga.

International Congresses in Russia. — With the sanction of the Emperor of Russia, there will be held at Moscow, during the current year, two international congresses: a congress on anthropology and prehistoric archæology, to be held from the 13th to the 20th of August, and a congress on zoölogy from the 22d to the 30th of August.

Cholera in Persia. — The mortality from cholera at Meshed, Persia, has reached 400 daily. The Persian government has placed a military cordon around Teheran. The Russian government is taking rigorous and extensive measures to prevent the spread of cholera into Russia.

Sunshine in England. — The lack of sunshine in the United Kingdom can be appreciated by reading an article by Mr. R. H. Scott, in *Longman's Magazine* (*Lancet*, June 4th), in which he says, that in the matter of sunshine the Channel Islands bear pre-eminently the palm, being "the only region which records, on the average of ten years, sunshine for one-half the time the sun is above the horizon in any month, and this it does in May, with 52 per cent., and in August, with 55 per cent."

Coghill vs. Bonaparte. — This case, which has recently been tried in England, has received a good deal of attention from the daily press, even in this country. Dr. S. Coghill sued M. Clovis Bonaparte for attendance on himself for alcoholism, and on a lady who passed for his wife for what was described as "grave specific disorder of a highly contagious nature." The bill had been sent in, but not paid. The defendant was impecunious, and conceived the idea not only of not paying the doctor's bill, but of making the doctor pay large damages by threatening an action for divorce against the woman who he maintained was not his wife, in which the plaintiff was to be made co-respondent. He drew such a picture to his so-called wife of an imaginary action that was to be commenced by Dr. Coghill, and that was only to be averted by money, that he got her to make what purported to be a confession of disgusting actions involving the plaintiff, and to part with all her jewels. She finally acknowledged in court that the documents were mendacious from beginning to end. The jury in their verdict declared that Dr. Coghill left court without the slightest imputation on his character.

NEW ENGLAND.

The American Laryngological Association held its fourteenth annual congress in Boston during the first three days of this week. About twenty members were present. An interesting programme, consisting of eighteen papers, had been prepared. On

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[2] La Médecine Moderne, April 28, 1892.

Monday and Tuesday a lunch was provided at the Athletic Club. On Monday evening, the annual dinner was held at the Parker House, and on Tuesday afternoon the Association went on an excursion to Plymouth.

The Lyman Prize. — The late Dr. George Hinckley Lyman was for twenty years a visiting physician to the City Hospital of Boston. Mrs. Lyman, in her wish to commemorate Dr. Lyman's great interest in the growth and development of the institution and his sympathy with the young men who leave it every year to practice the profession to which his life was devoted, has offered an annual prize of $150 for an essay on any subject relating to medicine or surgery which the writer may select.

This prize will be open for competition to graduates of the City Hospital of *not more than three years' standing*, in January of every year, beginning with January, 1893. The senior members of the medical, surgical and gynecological staffs of the City Hospital, with the President and Secretary of the City Hospital Club, will act as a committee of award. Essays must be type-written, and must be sent to the Secretary of the City Hospital Club before January 1st. Each essay must bear upon the title-page an assumed name or a device, and must be accompanied by a sealed envelope containing the name and address of the writer. If no essay worthy of the full prize be received in any year or years, the committee shall be at liberty to award a smaller prize or prizes of $50, $75, or $100. The amount which may remain will be added to the prize for the following year.

NEW YORK.

A Prolific Negress. — During the past week a negro woman now living in New York, gave birth to her twenty-fifth living child. She is about forty-two years of age, and when sixteen was married to the husband with whom she is still living. She was born in Richmond, and resided in Virginia until seven years ago. Among the twenty-five children there have been no twins or triplets.

Public School Buildings.— For some time past Dr. Moreau Morris, of the Health Department, acting under orders from the Sanitary Superintendent, Dr. Cyrus Edson, has been making a careful examination of the public school buildings in the city in order to make an exhaustive report on their sanitary condition, particularly as regards the effectiveness of the system of ventilation in use in each school, and to commend the adoption of such means as in his judgment would adequately ventilate the buildings. In nearly every instance Dr. Morris found a most unsatisfactory condition of affairs, and Dr. Edson has now laid the results of his investigations before the Board of Health, accompanied by a report of his own. In the latter he says: "In other cities and States, more especially in Massachusetts, excellent work has been performed by the authorities in effecting proper ventilation of school buildings. The outcome of this work has demonstrated that the only adequate means of ventilating school buildings is by fans so arranged and operated as to force into the rooms a supply of fresh air equal per minute to about 30 cubic feet per *capita*, and by outlet ducts so constructed as to permit egress of partially respired air. . . . In the cases of the buildings upon which the reports of Dr. Morris have been made, it has needed no chemical analysis of the air to demonstrate that the means of ventilation were insufficient. . . . It is unnecessary to describe the unhealthful effects of vitiated air upon the systems of human beings in order to show the necessity for the work in hand. Aside from the well-known direct effects of bad air, slight physical ailments of children, wholly unnoticed, are often developed by the impurities of the air in our school-rooms into serious disease. The only objection that can be made to the recommendations of Dr. Morris is that their compliance will entail the expenditure of a large sum of money. This objection should not weigh for a moment against the health of the school children. Pure air is absolutely essential to their well being. The air of our school buildings should be made pure, regardless of cost.

Miscellany.

THE BACILLUS OF INFLUENZA.

Pfeiffer and Beck[1] have published a report of their further investigations of the bacillus of influenza, an account of which was given in the Journal of February 11th. The pathological appearance found in the lung in cases of typical influenza-pneumonia are characteristic. There is no general hepatization, but foci of bronchopneumonia of different sizes, which occasionally coalesce, and are found mostly in the lower lobes. In the centre of such patches, on section, a yellowish green, purulent secretion may be pressed out from the smaller bronchi. This secretion consists of pus-cells and mucus, and in it can be found the typical bacillus, sometimes free, sometimes inside the cells. They occur often in enormous quantities and generally in pure culture. The bacilli appear to grow in the smaller bronchi and also in the parenchyma of the lung. The authors have failed to find the bacillus in the blood and come to the conclusion that the growth of the specific micro-organism takes place entirely in the bronchi or in the lung. The bacillus is very similar in appearance to several others, and the authors appear to believe that most, if not all of those described by others, have not been true influenza bacillus. The bacilli are ærobic bacteria and are soon destroyed by drying. The authors have not yet found spores, or a condition in which the bacilli may live for any length of time. They are killed by a temperature of 60° C. in five minutes. A description of their appearance and peculiarities of growth are given. The authors have never failed to find this bacteria in cases of influenza, nor found it in persons not suffering from the disease. They have succeeded in producing a condition in apes similar to human influenza by placing a little of the pure culture upon the mucous membrane of the nose.

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[1] Deutsche med. Woch., May 26th.

EFFECT OF BITTERS ON GASTRIC MOVEMENTS.

Terray has published an account of some investigations to determine the effect of various bitters on the movements of the stomach.[1] The experiments were made with dogs. The animal was kept on a restricted diet for two days, and a quarter of an hour before being killed a dose was introduced into the stomach of some bitter which acts on the peripheral automatic centres of the stomach. The most powerful drug was gentian, and after that cetrarin and condurangin; then taraxacum, quinine and lastly quassia. The irritability of the stomach to mechanical stimuli was increased by gentian, taraxacum, quassia, strychnine and columbine. Small doses of absinthin diminished the irritability, and large doses arrested it altogether. Columbine and strychnine increased the irritability until persistent general contractions were induced. Picrotoxin produced no effect on the contractions, while cetrarin not only set up increased movements in the stomach, but produced a similar effect upon the intestinal movements. From a therapeutic point of view, therefore, it appears that in tonic conditions and moderate dilatation bitters may be given with advantage. Cetrarin acts as an aperient in addition to its effect upon the stomach.

THE GROWTH OF MEMORY IN SCHOOL CHILDREN.

Mr. Thaddeus L. Bolton[2] has tested the growth of memory in school children, using as a basis, tests made upon about 1,500 pupils in the public schools of Worcester. The experiments were made by reading aloud a series of numbers in which the digits were so arranged that they did not stand in their accustomed order and no digit was repeated. At a given signal after the dictation of each number, the pupils wrote the digits as they remembered them, from five to nine digits were given at a time. From the large amount of material thus collected the following conclusions are reached: The limit to the memory-span for the pupils in public schools is six. The memory-span increases with age rather than with the growth of intelligence. Experience in this matter is a better school than books. The memory-span measures the power of concentrated and prolonged attention. Intellectual acuteness, while more often accompanied by a good memory-span and great power of concentrated and prolonged attention, is not necessarily accompanied by them. Girls have better memories than boys. With practice pupils increase in their ability to remember groups of digits. They unconsciously remember digits which they have heard the day before. The tests did not show that the pupils suffered fatigue from the day's work, a fact which shows that the work in the schools is probably not excessive. Memory images pass through three stages in leaving the mind, first they suffer a confusion of order; second, loss of certain elements and the substitution of associated elements; and third, a complete loss of some elements and no recovery. Ideas previously in the mind, association and forms of ideas are factors in causing confusion of the memory image and its final loss. There is an apparent tendency to over-estimate the number of ideas presented to the mind when the number of ideas is slightly greater than the memory-span, but the general rule is to under-estimate the number. Ideas except the last two or three in the series are lasting in an inverse order as they are removed from the beginning of the series in which they occur. The last two or three are lasting, but in a decreasing degree, as they are removed from the end of the series.

THE CURE OF A CASE OF HYDROPHOBIA.

Professor Murri, of Bologna, reports a case of a man twenty-two years of age who was bitten by a rabid dog. A few days afterwards he commenced a course of treatment by Pasteur's method which lasted twenty days. He was then seized with undoubted symptoms of hydrophobia of a paralytic form. The lower extremities were completely paralyzed. Two days after the first symptoms intravenous injections of anti-rabic virus were begun. The emulsions used contained medullæ of six, five, four and three days. These injections were continued for nine days, one or two being made daily. In commenting upon this case Dr. T. W. Hine[1] says, that no method of treatment, known up to the present time, has ever saved a man seized with marked symptoms of hydrophobia. The good result in this case lies in the novel and bold modifications of the method originated by Pasteur. A subcutaneous method is too slow to be of practical use in the presence of a well marked case of rabies.

THERAPEUTIC NOTES.

A New Kind of Circumcision.—During the discussion of an address by Dr. Joseph Hoffman (on treatment of lesions at and about the head of the colon) before the Alumni Association of the Medical Department of the Niagara University at Buffalo, N. Y., it was suggested by Dr. Wilder, of Ithaca,[2] that, in view of the dangers to which human beings are exposed from inflammation of the vermiform appendix, it be extirpated by aseptic laparotomy soon after the birth of the child.

Betol[3] (salinaphthol) is a compound of salicylic acid and naphthol, very similar to salol, and applicable to the same uses. It was expected theoretically that this new compound would be superior in action to salol; but clinical experience has not been generally favorable, although good results are reported from its use so far as an intestinal antiseptic. It comes as small, colorless and odorless broken crystals insoluble in water. Its taste is not disagreeable, and its toxic effects are not noticeable in moderate doses. It is, therefore, a reasonably safe remedy in children's bowel complaints.

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[1] Lancet, May 28th.

[2] American Journal of Psychology, April.

[1] Lancet, June 4th.

[2] New York Medical Record, xxxvii., p. 738, June 28, 1890.

[3] Squibbs Ephemeris.

Bromoform[3] still continues to give satisfaction in the treatment of whooping-cough, although its use has apparently been confined to only a few observers. Care must be taken to see that it is in normal condition, that of a colorless liquid, for by exposure to the light bromine is set free and colors the liquid. Foreign observers are most pronounced in its favor, and more practitioners in our own country should put investigations on record.

Bromol[3] (tribromophenol) is not new, but has been known as the product of the action of bromine in access on carbolic acid. As it has been found now to have marked antiseptic properties, this short name has been given it, both for convenience in use and to be in harmony with the already too many new compounds being pushed forth, most of which have names less indicative of their true composition. It has been applied with vaseline to open wounds with success. Its internal uses have been in cases of typhoid fever and cholera infantum. Little has been written yet on its therapeutic uses.

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Correspondence.

A BIOGRAPHY OF DR. D. HAYES AGNEW.

University Medical Magazine, Editoral Offices.
Philadelphia, June 17, 1892.

Mr. Editor: — At the request of Mrs. D. Hayes Agnew, I am preparing a biography of her late distinguished husband; in consequence, I am looking for data on this subject. Will you please state in the columns of the *Boston Medical and Surgical Journal* the fact that I am desirous of obtaining from all of Dr. Agnew's former friends, colleagues, associates, students and acquaintances all such authentic data as relate in any way to his career or character. Dr. Agnew's acquaintance was so vast and his life was so actively spent among his friends, while his own modesty was so marked, that undoubtedly a great many incidents, anecdotes, characteristic stories, etc., are unknown to his family. All material, however insignificant or small will be welcomed, and credit will be given to all data which are used.

Yours faithfully,
J. Howe Adams.

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TOXIC RETRO-BULBAR NEURITIS.

Salem, June 13, 1892.

Mr. Editor: — The appearance of two new patients, one day last week, both the victims of loss of sight owing to the abuse of alcohol and tobacco, lead me to look over my records, where I found that the ratio of such cases is apparently greater than it was ten years ago.

The late Mr. Critchett once remarked, somewhat tersely, at Moorfields, "Rum, shag, and W—— (women) are frequently the causes of serious eye-troubles."

Three cases are recalled within a few years where the vision was affected in tobacco-chewers. On abstaining, the sight in two was greatly improved. All were teetotalers, so far as the use of spirits was concerned. The smoking alone of cigars and pipes has not infrequently been the apparent cause of amblyopia. No cases of this eye-trouble, owing to the smoking of cigarettes, have yet come under my observation. It is somewhat remarkable that no females having this affection have yet been seen, when we consider how largely snuff is used, ostensibly as a dentifrice, by mill operatives in our factory towns — a more elegant procedure, perhaps, than the *dipping* that prevails in our Southern States.

And strong beer, at least, is partaken of somewhat freely by such females, but no case of the old *amblyopia exabusa* has yet been seen by the writer in the gentler sex.

Most patients who suffer from this form of neuritis are both smokers and drinkers. Ordinarily they live in cities or large towns — or such has been my experience — yet some of my tobacco cases lived far from the madding crowd, as did two old smokers in a Florida village.

Soldiers of the late war appear each year, with fishermen, an occasional master-mariner, saloon-keepers more frequently, and sometimes men of our calling and (tell it not in Gath), more rarely, a disciple of a calling akin to ours who has followed too literally the advice of Timothy as to the use of a little wine.

This disease is more common in this country and in Great Britain, where the tobacco is strong, than it is in Germany and Turkey. Then, too, in the latter countries spirits are less consumed.

An excellent London ophthalmic surgeon in his first treatise on the eye, in 1875, expressed some doubt as to the action of these agents on the sight, but in a later volume (1887), he evidently ascribes to them this form of toxic neuritis.

Patients having this trouble are apt to be unsatisfactory ones to treat.

They ordinarily promise to abstain with gratifying alacrity but they by no means invariably carry out their good intentions. They take potassic iodide or strychnia with "acid phosphate," and at night, perhaps, a bromide draught. The subsequent gain in vision is sometimes found to have been considerable (in the rare instances when the patient consents to return) while if he does not reform his habits the reverse is pretty sure to follow.

Yours truly, David Coggin, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, June 11, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Measles.
New York . .	1,515,301	767	344	21.45	18.46	4.16	4.05	7.02
Chicago . . .	1,099,850	—	—	—	—	—	—	—
Philadelphia .	1,046,964	375	137	17.55	9.72	5.94	3.94	.81
Brooklyn . .	806,343	297	109	15.64	17.34	4.08	5.40	3.40
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,477	169	47	13.57	17.11	2.36	3.54	—
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	104	38	7.68	8.61	.96	1.92	—
Cleveland . .	262,000	83	34	20.40	13.20	2.40	6.00	3.60
Pittsburg . .	249,000	—	—	—	—	—	—	—
Milwaukee . .	240,000	67	27	8.88	10.36	1.48	2.96	1.48
Washington .	230,392	105	46	13 30	9.50	3.80	.95	—
Nashville . .	76,168	36	15	30.58	5.56	18.46	2.78	—
Charleston . .	65,165	43	17	23.30	4.66	18.64	—	—
Portland . . .	36,425	12	3	8.33	8.33	—	8.33	—
Worcester . .	84,655	28	13	10.71	7.14	3.57	3.57	—
Lowell . . .	77,696	33	17	21.21	3.03	15.15	—	—
Fall River . .	74,398	16	6	6.25	—	—	—	6.25
Lynn	55,727	16	2	—	6.25	—	—	—
Lawrence . .	44,654	19	10	21.04	5.26	10.52	—	—
Springfield . .	44,179	19	4	15.78	5.26	—	5.26	5.26
New Bedford .	40,733	10	5	1.00	3.00	—	—	—
Holyoke . . .	35,637	11	7	45.45	—	18.18	9.09	9.09
Salem	30,801	8	2	—	25.00	—	—	—
Haverhill . .	27,412	8	3	25.00	25.00	—	—	—
Brockton . .	27,294	6	3	—	16.66	—	—	—
Taunton . . .	25,445	7	1	—	14.28	—	—	—
Newton . . .	24,376	2	0	—	—	—	—	—
Malden . . .	23,031	8	1	25.00	12.50	—	12.50	—
Fitchburg . .	22,037	6	4	—	16.66	—	—	—
Waltham . .	18,707	2	0	50.00	50.00	50.00	—	—
Pittsfield . .	17,281	4	3	50.00	25.00	—	25.00	—
Quincy . . .	16,723	2	1	50.00	—	—	—	—
Northampton .	14,990	4	1	—	—	—	—	—
Newburyport .	13,947	6	1	—	—	—	—	—
Brookline . .	12,103	4	0	—	—	—	—	—
Medford . . .	11,079	4	0	—	—	—	—	—
Everett . . .	11,068	6	0	66.66	—	—	—	—
Hyde Park . .	10,193	4	0	—	—	—	—	—
Peabody . . .	10,158	—	—	—	—	—	—	—

Deaths reported 2,291: under five years of age 801; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 406, acute lung diseases 319, consumption 284, diarrhœal diseases 104, diphtheria and croup 92, measles 75, scarlet fever 48, typhoid fever 29, whooping-cough 20, cerebro-spinal meningitis 17, erysipelas 11, malarial fever 9, small-pox 1.

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[3] Squibbs Ephemeris.

From scarlet fever New York 21, Philadelphia 10, Brooklyn 7, Boston 6, Cincinnati, Lowell, Lawrence and Pittsfield 1 each. From typhoid fever New York 7, Cleveland 5, Philadelphia 4, Cincinnati 3, Washington 2, Milwaukee, Lowell, Holyoke, Haverhill and Everett 1 each. From whooping-cough New York 4, Philadelphia 3, Brooklyn, Boston and Washington 2 each, Cincinnati, Milwaukee, Nashville, Charleston, Worcester and Lawrence 1 each. From cerebro-spinal meningitis New York 6, Washington 4, Brooklyn 2, Nashville, Haverhill, Malden, Quincy and Everett 1 each. From erysipelas New York 4, Boston and Cleveland 2 each, Washington and Springfield 1 each. From malarial fever Brooklyn 3, New York 2, Philadelphia, Nashville and Charleston 1 each. From small-pox New Bedford 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending June 4th, the death-rate was 17.9. Deaths reported 3,506: acute diseases of the respiratory organs (London) 240, measles 189, whooping-cough 106, diarrhœa 51, diphtheria 48, scarlet fever 32, fever 26, small-pox (London) 3.

The death-rates ranged from 10.8 in Portsmouth to 25.9 in Burnley; Birmingham 20.0, Bradford 14.7, Hull 16.0, Leeds 18.9, Leicester 20.6, Liverpool 21.9, London 17.4, Manchester 24.2, Newcastle-on-Tyne 15.7, Nottingham 18.4, Plymouth 12.8, Sheffield 18.4, Sunderland 19.2, Wolverhampton 18.1.

METEOROLOGICAL RECORD,

For the week ending June 11, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 5	30.23	65	75	56	58	85	72	S.	S.	13	12	O.	O.	
M.. 6	29.88	74	84	64	82	68	70	W.	W.	10	10	F.	F.	
T.. 7	30.15	65	70	60	53	55	54	N.E.	S.	18	10	C.	C.	
W. 8	30.18	66	76	56	38	64	51	S.W.	S.	9	12	F.	O.	
T.. 9	29.90	60	67	53	97	90	94	E.	N.E.	5	3	O.	O.	
F ..10	30.00	55	57	52	72	42	57	N.E.	E.	24	3	O.	O.	.33
S..11	30.00	65	81	49	68	58	63	W.	S.W.	9	15	F.	C.	
☞	30.05	64	73	56	66	66	66			12	9			.044

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 11, 1892, TO JUNE 17, 1892.

The leave of absence granted Captain William C. Gorgas, assistant surgeon, U. S. A., is extended one month.

The leave of absence for seven days granted Captain Henry S. T. Harris, assistant surgeon, U. S. A., is extended twenty-three days.

First-Lieut. Merritte W. Ireland, assistant surgeon, is relieved from temporary duty at Fort Yates, N. D., and will rejoin his proper station, Fort Riley, Kansas.

First-Lieut. Henry C. Fisher, assistant surgeon, is relieved from duty at Fort Riley, Kansas, and will report in person to the commanding officer, Fort Yates, N. D., for duty at that station.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 18, 1892.

W. F. Arnold, passed assistant surgeon, detached from U. S. Training-ship "Richmond" and placed on waiting orders.

M. W. Barnum, assistant surgeon, detached from Naval Hospital, Washington, D. C., and to the U. S. Training-ship "Richmond."

H. T. Percy, passed assistant surgeon, ordered to the Naval Hospital, Washington, D. C.

George M. C. Pickrell, passed assistant surgeon, detached from Naval Hospital, Norfolk, Va., and to the U. S. S. "Newark."

HARVARD MEDICAL SCHOOL ASSOCIATION.

The annual meeting of the Harvard Medical School Association will be held in Boston, at the Medical School Building on Boylston Street, at 12 o'clock on Tuesday, June 28, 1892.

The second annual dinner will be given at Hotel Vendome, Boston, at one o'clock of the same day (Tuesday, June 28th). Among the speakers at the dinner will be President Eliot, Dr. Wm. Pepper, Provost of the University of Pennsylvania, Dr. Wm. H. Welch, Professor of Pathology at Johns Hopkins University, and Dr. James C. White, President of the Massachusetts Medical Society.

Dinner tickets will be two dollars each, and can be obtained by members either at the Medical School or at Hotel Vendome between the hours of 11 and 1 on the day of the dinner.

Robert W. Lovett, *Secretary.*

CORRECTION.

In our report of the meeting of the Massachusetts Medical Society on page 612, a few mistakes in the Treasurer's report will be found corrected on page 640.

RECENT DEATHS.

Clarence Whitfield Pelton, M.D., M.M S.S., died in Dedham, Mass., June 14, 1892, aged twenty-six years.

Ezra Bartlett, M.D. (Dart. 1832), died in Brooklyn, N. Y., June 16th, aged eighty-one. He had practised in different cities in New England, and during the war served as surgeon in the United States Army.

Henry F. Formad, M D., Demonstrator of Pathology and Lecturer on Morbid Anatomy at the University of Pennsylvania and Pathologist to the Philadelphia Hospital, died June 5th, at the age of forty-five years.

David N. Skinner, M.D. (Bowd. 1867), died in Auburn, Me., June 18th, aged fifty years. He was the author of several papers on diseases of the eye.

BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the New York Pathological Society for the Year 1891.

The Wills Eye Hospital, Report for the years 1891 and 1892. Philadelphia. 1892.

Synopsis of the Lives of Victoria C. Woodhull and Tennessee Claflin. By G. L. Darwin.

Record Book for Trained Nurses. Published by Frank M. Bertram, New Bedford, Mass.

Twenty-fourth Annual Report of the Inebriates' Home, Fort Hamilton, N. Y., for the year 1891.

Tenth Annual Report of the State Board of Health of the State of New Hampshire for the year ending October 31, 1891.

Twenty-eighth Report of the Trustees of the Boston City Hospital, for thirteen months, from January 1, 1891, to January 31, 1892.

Contractions of the Finger and on Hammer Toe. By William Adams, F.R.C.S. Second edition. London: J. & A. Churchill. 1892.

Elements of Materia Medica and Therapeutics. By C. E. Armand Semple, M.B., M.R.C.P. London: Longmans, Green & Co. 1892.

Atlas of Clinical Medicine By Byron Bramwell, M.D., F.R.C.P., F.R.S. Vol. i, part iv. Edinburgh: T. & A. Constable. 1892.

Spectacles and Eye Glasses; Their Forms, Mounting and Proper Adjustment. By R. J. Phillips, M D. Philadelphia: P. Blakiston, Son & Co. 1892.

The Diagnosis of Diseases of the Nervous System, A Manual for Students and Practitioners. By Christian A. Herter, M.D. New York: G. P. Putnam's Sons. 1892.

The History of Higher Education in Ohio. By George W. Knight, Ph D., and John R. Commons, A.M. Washington: Bureau of Education, Circular of Information, No. 5. 1891.

Biological Teaching in the Colleges of the United States. By John P. Campbell. Ph.D., Professor of Biology in the University of Georgia. Washington: Bureau of Education, Circular of Information, No. 9. 1891.

Station-List of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army, May 1, 1892, or at date of last report received at this office. Washington: Government Printing Office. 1892.

Selection of Interesting Eye Cases. Rapid Dilatation and Curetting. Jequirity in the Treatment of Granular Lids. Lessons Taught by a Post-mortem, or the Past and Might Have Been. By J. G. Carpenter, M.D., Stauford, Ky. Reprints. 1892.

Address.

ADDRESS AT THE ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.[1]

BY S. W. LANGMAID, M.D., *President.*

It is my honorable and pleasing duty to announce the opening of the Fourteenth Annual Congress of our Society. Estimating the value of the Association as I do, I can conceive of no greater honor than to be its presiding officer. The enjoyment which I always have in our annual meetings is enhanced by the evident desire which was shown that we should meet in Boston and because you are our guests.

The present membership of the Association consists of forty-five active, one honorary, and ten corresponding Fellows. The council recommends the enlargement of the Society by the reinstatement of a former member, and by the election of eight active Fellows. It will recommend for corresponding fellowship three well-known European laryngologists.

During the past year the Association has lost by death one active Fellow. Dr. Frank Donaldson, of Baltimore, emeritus clinical professor of diseases of the throat and chest in the University of Maryland, died December 8, 1891. The loss to our Association by the death of Dr. Donaldson is real. We have lost his genial companionship, his sympathy, his manly sweetness of character, his active interest in the Society, and his fair-minded judgment. We have lost a learned friend and most valuable member, and the Association mourns to-day and will continue to regret his untimely death.

Another loss to the Society and to the world is already in your minds before I can utter it. The death of Sir Morell Mackenzie removed not only the personal friend of many of us but an interested friend and member of our Association. Any words of mine would be sadly incompetent to convey an idea of what the loss to laryngology is by Mackenzie's death. Fortunately, the most sympathetic and comprehensive utterances have already been made by his associates and friends all over the world, and although we cannot add to them we can make these utterances our own through our sincere indorsement of their truth.

A remarkable man has departed, a teacher and arbitrator in all laryngological matters, and in our grief at our loss we selfishly murmur that we cannot longer avail ourselves of his skill, his knowledge and his judgment. The office of the teacher has no superior, and in that office Mackenzie was pre-eminent.

The programme of the present meeting consists in the reading and discussion of no less than eighteen papers. The subject of each paper is of vital interest, and the time for discussion will be far too short for our satisfaction and instruction. Under these circumstances the preliminary address, which is expected at the opening of the Congress, must necessarily be short.

I cannot refrain, however, from giving utterance to a few thoughts which have presented themselves in anticipation of this occasion. When I think of the present status of this Association; of what it is, and what it has done; when I consider the wealth of laryngological knowledge of which the world is possessed, to which this Association has been a not small contributor, I cannot forget the small beginning, the tiny rivulet from which this quiet stream of knowledge had its rise, and that some of us began our voyage of professional life almost at its source. I hold in my hand the rare but interesting words of Beunati.[2] So rare, that our lamented Elsberg, whose bibliographical knowledge was second to none, had never seen them until a few years before his decease.

To me they are intensely interesting because of the original investigation which they record, and because they are the last worthy publications of the old dispensation — the dispensation of darkness and guess — worn before the new dispensation of light and certainty were ushered in by the discovery of the laryngoscope. No special student was ever more in earnest, and no one has given a better account of what could be seen in the singer's throat than Beunati. The reader cannot help a sigh of pity that the means by which that wonderful mechanism, the living larynx, can be seen, had not then been discovered. Beunati's investigations were of necessity confined to parts which were then visible, namely, those which constitute the buccal pharynx. All below and all above were *terra incognita.* Throughout Beunati's works one can read between the lines his burning desire to be able to see the living glottis.

When I began the study of throat disease as determined by the laryngoscope, almost the only works upon the subject were the well-known paper of Czermak, a small treatise by Elsberg, and the volume by Sir Duncan Gibb. The original paper of Garcia was inaccessible. Since then, as we know to our cost, the literature of laryngology has increased by standard publications and ephemeral magazine articles until no one without assistance can hope to keep quite abreast of discoveries and clinical observations. Such industry in observation and study, and such rapid discoveries evince the greatest activity in the laryngological specialty. To this multitudinous literature this Association has conributed largely and valuably.

In the address of welcome which I had the pleasure of making ten years ago on the occasion of the former meeting under the presidency of Dr. Knight, I said in effect that I believed the coming years would show as good work from the members of this Association as had already been done by them. My belief was not unfounded. During the last ten years I find in our archives, among others, most valuable papers and discussions upon the following subjects: Upon the respiratory function of the human larynx, upon the special senses of smell and taste, tension of the vocal bands, the nervous origin of diseases, the physiology of the voice, the paralysis of the larynx, morbid growths in nose and throat, new operations for deformities, descriptions of many new instruments, new remedies, climatology in connection with laryngeal phthisis, photography of the larynx, correction of the faults of the voice, investigations with regard to brain centres, etc. These papers are the result of *original* thought, invention and discovery, and we have reason to be proud of them.

Ten years ago I said that in no special branch of medicine were such advances being made as in our own. I am pleased to say that within these ten years there has been an advance all along the line of medicine and surgery, perhaps more marked in the special departments of brain and abdominal surgery. The methods used and the results obtained are largely due to the discoveries which have been made in the biological laboratories. Let us hope that the future will not find us behind in the rapid march of improvement and discovery.

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[1] Boston, June 20, 1892.

[2] Recherches sur le méchanisme de la voix humaine. Recherches sur les maladies de la voix humaine. Par F. Beunati. Paris, 1832.

I believe that our advance will be greatly helped by faithful adherence to this Association. A man's education does not consist entirely of what he can acquire by his own effort. Companionship with fellow-workers is necessary to complete his growth. The kindly but severe criticism of those who are engaged in similar pursuits, and who are, therefore, best fitted to estimate the value of any theory or invention is of incalculable use. Membership is not only a means of information, but it is a stimulus to work and production as well.

Let us hope that the next ten years will show such a record of work performed, of knowledge gained, that the American Laryngological will not occupy any other position than that which has always been accorded it, namely, the first in merit as well as in priority of establishment.

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Original Articles.

THE VERTIGO OF ARTERIO-SCLEROSIS.[1]

BY ARCHIBALD CHURCH, M.D.,
Professor of Neurology, Chicago Policlinic; Lecturer on Insanity, Chicago Medical College.

The discussion of a pathologically subjective state is in itself practically impossible, and the difficulty is not lessened when that state is a symptom of many widely differing conditions, some functional and some grossly organic. To use the term vertigo is therefore undesirable, but for lack of one more definite its employment is a necessity, and in this connection is not open, perhaps, to the emphatic objection that elsewhere obtains. It is in its generic sense that I wish to make use of it.

In a very recent and comprehensive article Suckling[2] takes up the subject of vertigo and in a way describes it as the consciousness of disordered equilibration, showing that it may exist from want of harmony in the impressions received from any of the senses, and possibly from the sensibility of the viscera as well, but it is not the present purpose to direct attention to the physiology of equilibration nor to take up the interesting topic of co-ordination, which is closely associated therewith. He clinically classifies the forms of vertigo as aural, ocular, vascular, dyspeptic, nervous, epileptic, toxic, of organic brain disease, and from reflex irritation, but says specifically nothing of the vertigo of arterio-sclerosis. Most other writers either on the topic of vertigo or that of arterio-sclerosis are equally silent; yet vertigo may be and often is, as will be urged farther on, a signal symptom of this arterial state, the proper recognition of which may lead to such treatment as will obviate organic diseases of the brain, kidneys, liver, and other important structures, and many times definitively prolong life.

It is only of late years that arterial changes have been given the importance in pathology and in clinical medicine that they deserve. The degeneration of senility, the modifications found in gout, rheumatism, chronic metallic poisoning, syphilis, and which are associated with alcoholism, Bright's disease, and many other serious maladies, makes it imperative that we recognize at the earliest moment the presence of a change in the artery which may in many instances be amenable, in the early stage, to treatment but which soon otherwise passes beyond the possibility of medical control. Atheroma is not here synonomous by any means. It is the pre-atheromatous condition with which we have to deal, and it is the vertigo symptomatic of that arterial fibrosis to which your attention is directed. As a matter of demonstrable fact this arterial state is widely and generally disseminated in these cases, but the complexion of the disease varies with its local intensity. In some instances a contracted kidney, in others angina pectoris, in others the cerebral symptoms are the prominent features, and of the brain symptoms the earliest is vertigo, and the last cerebral hæmorrhage or dementia.

When a man past the prime of life, without any previous serious illness, becomes suddenly faint, has a swimming in the head, a feeling of giddiness, of distinct gyration, of darkness and impending death, one or several of these sensations, he usually at once seeks advice in grave apprehension, sometimes well founded, of approaching cerebral apoplexy, and usually gets a cholagogue cathartic, or is told that his stomach is wrong, and sometimes is told rightly. But cases are constantly presenting themselves in which such vertiginous attacks are happening at shortening intervals, the patient gives up his tobacco, his spirits, if he is a drinker, cuts down his meat, takes to some of the many waters recommended, has Turkish baths, and gains only moderate relief or none at all. If he is carefully examined he will probably present a well defined tortuous frontal artery, a distinct arcus senilis, a strong, even a clanging, second sound of the heart, sometimes reduplicated, and give a sphygmogram indicative of increased arterial tension. The pulse may be abnormally slow or arhythmic, the urine scant and a trace of albumen is not rare. He finds that exertion of a moderate amount precipitates the attack, that he cannot endure a temperature at all above the usual, and often a change of position from recumbency to the upright is the occasion of a "blurr" or of giddiness.

The attack itself is, as already indicated, widely variable in different patients, but usually consists with itself for the given individual. A fullness and throbbing in the head, a feeling of heat in the scalp, and a blurr before the eyes are usually mentioned, and at such times marked paleness is noticed, followed, as a rule, by considerable redness of the face. There is a tendency to get into the open air, and badly-ventilated or close apartments are unendurable. An habitual smoker will sometimes find tobacco smoke repugnant. In more severe forms the patient may stagger, fall, or gradually sink to the ground; he cannot speak for a few seconds though consciousness is rarely completely lost. The recumbent position is usually sought, or the patient clings to some object, and after a period of from five to twenty minutes the feeling passes away leaving him rather languid, with an inclination to sleep, and usually mentally depressed and apprehensive. At first he attributes the attack to anything and everything that in his estimation can cause a departure from health, and usually establishes a close watch upon his diet, habits and mode of life, is inclined to avoid exercise or exertion of any sort, fearing to precipitate an attack, or to go by himself on the streets, and in short becomes an invalid with hypochondriacal tendencies.

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[1] Read before the American Medical Association, June 8, 1892.
[2] Birmingham Med. Rev., Nov. 1891.

In a remarkable monograph on this subject Professor J. Grasset,[3] of Montpellier, divides the vertigos of arterio-sclerosis into three forms: (1) Simple vertigo, (2) Vertigo with epileptiform crises, and (3) Vertigo with slow pulse and syncopic, or epileptiform attacks. Some of the features of the slighter attacks, as already roughly sketched, undoubtedly suggest a similarity to mild epileptic seizures, for instance, the paleness of the face, the oppression and the final confusion, depression and tendency to sleep, but personally I have never encountered well marked convulsive phenomena reasonably attributable to this cause.

With Huchard,[4] this writer is inclined in some cases to attribute acquired habitual extreme slowness of the pulse, which in numerous reported instances has ranged from twenty to forty per minute, or even less, to the effect upon the medulla of an arterio-sclerosis acting mechanically to lessen the blood-supply to the cardiac centres. As yet this hypothesis has received, as far as I have been able to ascertain, no positive anatomical or experimental support, though it is seductively reasonable. This bradycardia is almost always marked by syncopal and vertiginous features and arises in individuals predisposed to or actually the subjects of marked arterio-fibrosis.

The diagnosis is often one of extreme difficulty, in spite of a hasty contrary statement by a recent American writer, and I have known this symptomatic vertigo confused with Meniere's disease by a very competent specialist in nervous diseases, for it may, as in that particular instance, be of a systematized character, that is to say, marked by a sensation of falling in a given direction, or of being rotated in a constant manner to the right or left, and even associated with a suggestive stagger. If to this a little middle ear catarrh is added, a diagnosis of aural vertigo might be easily reached, but a closer and somewhat wider examination will detect the integrity of the auditory nerve and the presence of the arterial fibrosis with the underlying predisposition of alcoholic excess, syphilis, gout, rheumatism, chronic lead infection, or other constitutional state of etiological significance.

In the treatment the basic element is the object of attack, and whatever this may be, the iodide of potash will find an indication in the arterial change, which if recognized in its incipiency can be practically controlled, providing the patient is manageable. It is the sheet anchor, and given in moderate doses of from thirty to ninety grains a day for a number of months, much benefit and often a substantial cure can be expected.

I am lead to emphasize the importance of this vertigo because it is a very early symptom of a condition which neglected leads to distressing and even fatal results, and which unrecognized is the source of endless anxiety and misery to the patient and of chagrin and disappointment to his medical attendant. If it were desirable numerous case records could be cited, but it is hoped that attention once having been called to a proper interpretation of the symptom it may be less frequently mistaken, and I would urge that the condition of the arteries and the heart be made an object of early and thorough investigation in every instance where obscure vertiginous attacks, or a persistent giddiness is present.

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[3] Du Vertige Cardio-Vasculaire, Paris, 1890.

[4] Traité des Maladies du cœur et des Vaissaux.

MALARIAL EPILEPSY.[1]

BY EUGENE W. HILL, M.D., WEST ROXBURY, MASS.

Twenty-one years ago Echeverria, in the preface of his work, stated "It does not claim to offer any new discovery . . . still less is it designed to be an English treatise on epilepsy." I have attempted to meet a deficiency in my own knowledge by comparing the cases I have carefully noted. How far these notes may meet the wants of others remains to be seen. The foregoing expresses the object of this paper.

I have selected from my notes two cases of malarial epilepsy, with some observations as to the prognosis of epilepsy in general as modified by treatment, which I submit for your approval.

Case I. M. F., a boy, eighteen years of age. Parents dead; father from alcoholism, mother from phthisis. Patient was never mentally at par, and for a year after birth had periods of dulness lasting several days during which he was morose and sleepy. At school, he was not apt, and was withdrawn early; being of slender physique and in indigent circumstances, he remained at home without education, employment or medical assistance. Under this routine, he gradually became morbid and melancholic. Two years ago he was attacked by the tertian form of intermittent fever, responding readily to treatment. Hygienic measures and anti-malarial treatment were instituted for two or three months. Under this stimulus he improved mentally and physically, and for a year suffered from no ailment of any kind until he was seized by malarial fever of the same form, beginning with a twenty-five-minute chill; the second day he remained in bed, with normal temperature but irregular pulse; at time of expected chill on the following day a convulsion occurred, followed by others. Medical assistance for this seizure was not until then summoned. I found him unconscious, convulsions occurring every five or six minutes, beginning locally by twitchings in the right hand extending up the muscles of the arm, followed by rotation of the eyes and head over the left shoulder, with a general epileptic paroxysm. The face during the quiet interval was flushed and hot, but became livid during the spasm. The temperature was difficult to follow from the rapidity of the convulsions, but rose to about 104° in the interval, and from 104.5° to 105° during latter part of the paroxysm; the usual depression seen before a normal epileptic explosion I was unable to obtain; the pulse was irregular, weak, bounding from 80 to 140 and over. Gradually perspiration appeared on the forehead and upper extremities of a cadaveric odor, the temperature fell gradually to 100° between, and 101° during the paroxysm, the urine was passed involuntarily, nearly colorless in character. The epileptic status still continued showing no change or diminution of vigor with falling temperature and profuse perspiration as compared with the previous condition of high temperature, flushed face and dry skin. For five hours they averaged four to eight per hour. Chloroform and nitrate of amyl controlled them slightly, but one-fiftieth of a grain of nitro-glycerine (two drops, one per cent.), dropped on the tongue every twenty minutes caused a gradual cessation in course of an hour, during which bromides were administered with quinine hypodermatically. Nevertheless, the paroxysms again returned and continued until death in the morning.

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[1] Read before the Norfolk District Medical Society, January 29, 1892.

Case II. F. K., a boy, aged nine, strong and hardy. Parents living; no hereditary history of any disease; three sisters all in good health. In April, 1890, he suffered from intermittent fever, beginning with a chill at 4 A. M. Forty-eight hours later had an attack commencing at midnight, ceasing at 7 A. M., about twelve paroxysms, but did not bite his tongue.

In May, 1891, one year later, suffered from malarial intermittent fever as before. On third day, at time of expectant chill, was seized with convulsions to the number of fifteen. Bromide amyl pearls and chloroform failed to give results which followed use of nitro-glycerine as in previous case. The paroxysms recurred in spite of treatment every other day for ten days, but diminishing in number and severity. The temperature gave the same rise and fall as in Case I, but never ascended above 103°. The scalp remained very tender for several days. The patient was still subject during the autumn, about once a month, to nocturnal attacks preceded twenty-four to thirty-six hours by malaise, nausea and vomiting. The attacks are readily aborted by quinine, bromides and calomel.

These cases are the result of malarial fever in New England; during the years 1880 and 1884 forms of malarial fever appeared in Massachusetts of sufficient frequency to claim the attention of the State Board of Health. In the latter part of 1885 and beginning of 1886, they were epidemic in character at South Framingham, disappearing from its previous localities, spreading along the course of a small stream (Beaverdam Brook) to Natick. Since 1886, it has disappeared entirely from South Framingham, and became prevalent along the Charles River through South Natick, Wellesley, Dover, Watertown, and the Newtons. In South Natick and Dover, the location of the cases reported, malarial fever prevails with greater severity than in any portion of the valley, scarcely any resident escaping during the summer and fall seasons.

Malarial epilepsy has been recognized from early times of medicine. Hippocrates clearly refers to epileptic fevers (*febro comitiales*) and their greater frequency during the spring and autumn months (Echeverria). According to modern authors, it is rare. The literature examined shows reports only by

Lowe and Paine: Indian Annals of Medical Science, Calcutta, 1860-61, vol, vii, p. 597, *et seq.*
Hansfield Jones: Clinical Observations of Functional Nervous Disorders, 1868, p. 139.
Echeverria: Epilepsy, 1870. Two cases.
Mackay: Edinburgh, Eng. One case in detail.
Jacobi: Hospital Gazette, New York, 1879, pp. 41–43. One case.
Hamilton: Pepper's System, vol. v, p. 472. Three cases.
Hammond: Nervous Diseases, 1891, 7th edition. Seven cases as a cause (?).
Ferreira: Archivo Italiano di Pediat., 1889.

Ferreira finds four varieties of cerebral form of malaria seen in children during the heated season: (e) the eclamptic, (2) the comatose, (3) the delirious, (4) meningitic. The last two were observed in older children.

Meigs,[2] Pepper[2] and Lewis Smith[3] hold that it is not unusual for malarial fever to be ushered in by a convulsion taking the place of a chill; and in 1882 the *North Carolina Medical Journal* stated, editorially, "there is no more fatal disease in children in the malarial districts of the South than malarial eclampsia."

Dr. Smith, however, says he is surprised at the immunity of epileptics from infantile convulsions.

Dr. Morris J. Lewis,[4] with ten years' experience at the Dispensary of the Children's Hospital, Philadelphia, has failed at that parallel to note such fatal results from malarial poison as seen in North Carolina; and in New England, malarial fever, I believe, does not show any such convulsive substitution.

It is interesting to note — already mentioned — that the convulsions continued unchanged with unremitting energy under three entirely different conditions, namely, the three stages of an intermittent fever; (2) the temperature rose with the close of each paroxysm, but fell in the quiet interval to the fever level, and did not show the abrupt, rapid and successive rise which occurs in eclampsia;[5] (3) the success of nitroglycerine, as an epileptic status, over bromides, chloreform and nitrate of amyl, especially in those cases characterized with a large flow of pale urine, and which is in accord with the observations of others.

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[2] Local citations.
[3] Diseases of Children, vol. iv, page 285.
[4] Keating: Diseases of Children, vol. iv, page 876.
[5] Bourneville: Archives de Tocologia, tome ii.

Clinical Department.

A CASE OF INFLUENZA WITH ERUPTION.[1]

BY CAPT. S. G. ROBINSON,
Medical Department United States Army, Fort du Chesne, Utah.

Louis Schear, white, age nineteen, laborer, was admitted to the post hospital at Fort Du Chesne, Utah, on March 28th, with the following history: With the exception of measles fifteen years ago, and typhoid fever one year ago, has always been strong and well. Has worked in the Park City mines, but has never had any symptoms indicating lead poisoning. Was taken sick seven days before admission with headache, severe pains in the calves of the legs, slight chilly sensations, fever, slight cough, marked muscular weakness and loss of appetite, two days after which an eruption appeared which even when first noticed was universal. Has taken no medicine.

When admitted, he had a temperature of 101.5° (which rose that afternoon to 103°), a pulse of 120, a slight cough, no coryza or conjunctivitis. Over the whole body, but most abundant on the legs, where it was deeper in shade, was an eruption of reddish spots from one-half to two millimetres in diameter, irregularly circular, coalescing in a few instances, elevated just enough to be perceptible to the touch, not exclusively associated with hair follicles, without special arrangement, not itching, and which fourteen days after its appearance—gradually faded without desquamation. On the hard and soft palate, were similar spots, with such modifications in appearance as might be expected from their seat. It was also visible on the palms of the hands. Epitrochlear and inguinal glands to be felt. On the knuckle of the right ring-finger was a slight abrasion surrounded by a parchment-like induration. This came, the patient said, from a burn received the day before he was taken ill. It disappeared without treatment. No œdema of legs or swelling of joints. Some sub-sternal soreness on coughing, but no tenderness on percussion. Tongue coated, bowels constipated, urine scanty and depositing urates, but otherwise normal. Auscultation of heart and lungs gave negative results. The temperature, which gradually declined, was usually one-half to one degree higher in the morning, and became normal on the eighth day after admission. He complained once of a sore throat, which was speedily relieved by a chlorate of potash gargle. No trace of sores or induration on penis or in rectum. He was discharged from hospital April 7th, complaining only of a weakness that was rapidly passing away.

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[1] Published by authority of the Surgeon-General.

The treatment was limited to rest in bed, regulation of the diet and the administration of a few doses of quinine, Dover's powder and phenacetin.

The interest in this case centres on the diagnosis. Without the eruption and during the prevalence of influenza, one would not hesitate to give the disorder that name. Cases of influenza accompanied by an eruption have recently been reported. Was this one?

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A CASE OF RECURRENT APPENDICITIS; OPERATION; RECOVERY.

BY JOHN C. MUNRO, M.D.

The following is reported as a contribution to those cases of removal of the appendix for recurrent, severe attacks of pain, in which the pathological lesions are not commensurate with the suffering endured.

N. M., seventeen years old, servant, rather fat and undersized, with a marked phthisical family history, and of a nervous temperament, came to me first in November, 1889. In the previous year she had had a short attack of colic, but none since, until a few weeks before I saw her when she had had several attacks of cramps in the bowels, coming on generally at night, and, so far as could be determined, without any reference to the catamenia, diet, etc.

There were no evidences of heart, lung, renal or hepatic trouble; the menses were normal, and the bowels, though constipated, were regular. Improvement followed the administration of iron and laxatives.

In the latter part of December, however, without any warning, she had a severe colic lasting eight hours, and not relieved by hot applications or mild opiates. She could lie partly on the right side and located the pain in the cæcal region. The next morning, feeling better, she worked; but in the afternoon the pain returned, and she came to my office, when I found marked tenderness over the cæcal region, but a normal pulse and temperature. She complained that the jolting of the horse-car caused pain in the same locality.

That night she had a severe attack; Dr. Vaughan, of Cambridge, was called in, and found her suffering acutely, with a weak, rapid pulse, but normal temperature. Pain was controlled only by large doses of morphia. The following morning I saw her with Dr. Vaughan, and he kindly admitted her to his wards in the Cambridge Hospital, where she remained about two weeks and made an uninterrupted recovery under rest, diet and opium.

For a few weeks she did well; but a mild attack coming on, she went at my advice to St. Luke's Home. No gain was made, so she was admitted to the gynecological ward at the Carney Hospital, and carefully examined for pelvic trouble, with negative result, a diagnosis of inflammation of the appendix being made. While there she had some slight attacks, but being anxious to work, she returned to her former place in Cambridge. Shortly afterwards, while reaching upwards, she felt a sharp stinging pain in the abdomen; and this was followed, in a few hours, by one of the old attacks, and then for the next two months by repeated sharp, short attacks, together with a constant dull aching and tenderness over the cæcum, always made worse by fatigue or jolting.

In the summer of 1890 I proposed excision to her, or absolute rest for four months. She chose the latter and went into the country; but, even with the most careful diet and rest, she had one acute attack that kept her in bed for a week.

I did not see her again until January, 1891, when she reported that she had been trying to do light work, but that the cramps were induced at the slightest provocation. She looked badly: was thin, discouraged, and showed in her face that she had suffered a great deal. She asked that some operation be done; and a few days later Dr. R. W. Lovett kindly saw her in consultation. No satisfactory examination could be made on account of the extreme sensitiveness over the lower right abdomen.

On February 20th, at St. Margaret's Infirmary, with the kind assistance of Drs. Mixter, Lovett and Paul Thorndike the abdomen was opened in the right linea semilunaris. The uterine appendages on the right, as examined by my finger, were apparently normal. On the cæcum were a few strands of fresh lymph. The appendix appeared to be normal, though perhaps slightly rigid and thickened. It seemed best, however, to remove it, and after ligating its mesentery, it was amputated about one-third of an inch from the cæcum, the peritoneum being invaginated and secured over the stump with silk. The abdominal wound, including the peritoneum, was closed with silk and dressed with iodoform gauze and a swathe.

During the day she had some pain, controlled by morphia: and that night the temperature rose to 101°, but rapidly fell to normal and remained so throughout.

Convalescence progressed steadily, twice during the first week pain from gas in the intestine being immediately relieved by a turpentine enema; and on the fifth day the bowels were thoroughly moved by a Seidlitz powder. At the first dressing on the sixth day there was primary union, and by the thirteenth day all the stitches were out. She sat up on the seventeenth day, and as soon as able was moved to St. Luke's Home, wearing an abdominal supporter.

At no time since the operation — over a year now — has she had any return of the original attacks.

The portion of the appendix removed was kindly examined by Dr. H. F. Sears, at the Pathological Laboratory of the Harvard Medical School, and pronounced normal so far as could be determined microscopically.

M. Brouardel, M. Ogier, and M. Du Mesnil have reported to the Academy of Medicine concerning the sanitation of cemeteries. Their investigation has demonstrated that the speedy or slow destruction of the corpse is in direct proportion to the quantity of air which reaches it; in chalky soil, dead bodies become transformed into a fatty substance, which lasts five or ten years; but if air freely circulates they are completely destroyed at the end of a year.

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

THE RELATIONS OF THE BRONCHI TO THE POSTERIOR WALL OF THE THORAX.[1]

Bianchi and Cocchi examined twenty-one bodies, with the following results: They find that the trachea divides opposite the body of the fifth dorsal vertebra, and that its lower end is somewhat to the right of the middle line. They state that the right primary bronchus, which descends more obliquely than the left one, corresponds to the fifth intercostal space. The left primary one runs parallel to the sixth rib. (We report this without explaining it.) The area occupied by the great and medium bronchial tubes extends vertically from the fourth intercostal space or the third rib, to the eighth space, and laterally to four or five centimetres from the line of the spinous processes.

SOME ANOMALIES OF THE CRANIA OF THE INSANE.

Bianchi and Marimò have examined over a thousand skulls of insane persons. Among their conclusions are the following. They believe that cranial anomalies are, perhaps, more dependent on the locality from which the persons came than on the diseases or the degree of intelligence of the individuals. In so-called degenerative forms, purely bony anomalies related to cerebral development are more rare than in psychoneurotics. There is no direct relation between insanity and cranial anomalies, but yet these are much more common in the skulls of the insane.

THE NUMBER OF PIECES IN THE COCCYX.

F. Marimò has studied the number of pieces in this fusion of vertebral elements on 66 skeletons of male criminals. There were no vertebral anomalies in 56 of these spines. Of these 21 had five pieces, 15 had four pieces only, and 11 had four pieces with a suspicion of a fifth. Of the other ten spines, six had five pieces and four had four pieces. Marimò looks on this as evidence that perhaps it is more usual to have five pieces than four in the coccyx, and especially as these are all male skeletons, believing that coccyges of five pieces are more commonly found in women. He does not seem to be acquainted with E. Steinbach's researches,[2] who found that five is the more usual number in men and that coccyges of four and five pieces occur about evenly in women.

THE WEIGHT OF THE TWO SIDES OF THE BRAIN.[3]

It is very generally held that the left half of the brain is heavier than the right, and this alleged fact has been frequently brought forward as a physical cause for right-handedness. Professor Braune has done a very important work by weighing, and having weighed by other competent men, one hundred human brains. These were divided in the median line and the cerebella with the medulla and pons cut off and bisected. Thus the table shows the comparative weights of the two sides of the whole encephalon and also of the cerebral hemispheres and the halves of the cerebellum (with medulla and pons). The two sides of the whole were equal once. The left side was the heavier in 52, and the right in 47.

It is curious to find that if the excess of weights of the two sides is added up the right shows a preponderance. It is further to be remarked, as Braune points out, that in most cases the difference between the two sides was so slight as to deserve no consideration. In five cases in which the right side considerably outweighed the left the bodies were examined for signs of left-handedness, but none were found. Other curious results were obtained from the results of the weighing of the separate parts, which, however, was not always done. Once the cerebral hemispheres were equal. Of 91 other brains the right hemisphere was the heavier in 54 and the left in 37. Of the cerebella five had the two sides equal. In 54 cases the left side was the heavier, in 33 the right. Thus in the number of cases we find that the hemisphere of one side is the larger about as often as the cerebellum of the other. But in this connection it must be very carefully noticed that we do not say that the larger half of the cerebellum is to be found on the opposite side from the larger hemisphere. Braune does not feel justified in drawing conclusions from the observations on the cerebella. For our own satisfaction we have gone through his tables to see whether the larger hemisphere and the larger lobe of the cerebellum are on opposite sides. We find that the larger halves are on the same side about twice as often as on different sides.

THE PHRENIC NERVE.

Dr. John Furgusson, in *Brain*, 1891, gives evidence in support of the view, which had been previously advanced, that the phrenic contains sensory as well as motor fibres. In the autopsy of a case of progressive muscular atrophy in which the diaphragm was involved, certain fibres in the phrenics were found unimpaired. Some vivisections on cats gave confirmatory results. One observation may be given in his own words: "About nine months ago I had a patient who died of an abscess in the liver. There was decided inflammation of the serous membrane covering the diaphragm in contact with the liver. In this case the pain in the back of the neck and out on the shoulder was very intense. The pain was always made worse by movements, coughing, or vomiting. These acts disturbed the diaphragm and at once started or intensified the pain in the shoulders and neck." We would suggest that this may be the long-sought cause of the pain in the acromion sometimes found in disease of the liver. The skin over the acromion and clavicle is supplied by the descending superficial branches of the cervical plexus, coming chiefly from the third and fourth nerves and practically wholly sensory. If sensory fibres from the same nerves go into the phrenic, which is derived chiefly from the fourth, the connection is evident.

THE HORIZONTAL LEVEL OF THE HUMAN SKULL.

Professor Braune[4] has written a long paper on this subject. It is clear that such a basis for craniological observations is very desirable. What has been called the Frankfort level was one adopted by a meeting of anthropologists in that city in 1882. It is the plane bounded laterally by two lines passing from the highest point of the external auditory meatus to the lowest of the inferior border of the orbit. In many skulls this is practically the same as a plane bounded by the upper border of the zigomata. It has been objected to the Frankfort level that it is vitiated by the frequent want of symmetry of the two sides of the head and face. Braune made many observations on this point. He found that there is an error; indeed it is evident that there must be one, but he does not consider it serious. He finds that, as Ecker has already shown, this plane does not correspond with a physiological horizontal. Such a horizontal in fact does not exist. One can speak only of a mean position of the head in standing. He finds further that the carriage of the head varies considerably according to the position of its centre of gravity, according to the curves of the spine and the state of the muscles. He concludes very justly from all this that craniological measurements must be quite independent of the position in which the head is carried and suggests that the line in question should no longer be called horizontal.

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[1] This and the two following titles are accounts of papers read at the Congress of the Italian Medical Association held at Sienna in August, 1891. They are taken from reports in Arch. Italiennes de Biologie, tome xvi, fasc. i, 1891.

[2] Die Zahl der Caudalwirbel bei Menschen, Berlin, Diss., 1889.

[3] Archiv fur Anat. und Physiol. Anat. Abtheilung, 1891, heft iv, v and vi.

[4] Festschrift zu Rudolf Virchow, Band I, 1891.

THE OBTURATOR ARTERY.[5]

Dr. Zastschinski discusses the variations of the obturator artery in a very able paper of, however, a somewhat bewildering minuteness. The following are his conclusions:

(1) Of the irregular origins of the obturator artery the most common is that from the internal epigastric (in about 28 per cent. of all cases, normal and abnormal). That from the external iliac occurs in about 1.2 per cent., and that from the femoral in about .4 per cent. The irregular origin is most common in childhood, in the female, and probably on the right side of the body.

(2) The author renews an old and just charge that anatomists, while discussing at length variations in the origin of this artery, are silent on the point of greatest practical interest to the surgeon, namely, the relation of the irregular branch to the crural ring, and consequently to femoral hernia. He finds that this relation varies with the origin of the artery. If it springs from the external iliac, it has no relation to the hernia; if from the femoral, the artery runs behind it. If the obturator arises from the internal epigastric, its relation varies with its point of origin. If from the first part of the artery, between the internal iliac and Poupart's ligament, it runs outside of the ring; if it arises above Poupart's ligament, it runs inside the ring.

(3) *The course external to the hernia is the rule, that internal to it a rare exception. In women the internal course is rarer than in men.*

(4) At the height of the ilio-pectineal line the obturator artery is not in contact with the posterior surface of Gimbernat's ligament, but is from 1.5 to 1.7 centimetres distant from it. There is, therefore, less danger in an operation for femoral hernia at this point than at Poupart's ligament, close to which the abnormal artery runs.

(5) Anomalies of this artery arise either during fœtal life or directly after birth.

(6) New variations do not occur in adult life.

(7) The anomaly requires for its production, first, a system of anastomoses between the internal epigastric and the normal obturator, in which the blood current is directed towards the obturator foramen; and, secondly, some interference with the growth of the normal vessel.

THE CIRCUMFLEX ILIAC ARTERY.

In a recent Report we referred to a paper by Trzebicki, in which he described a case of serious bleeding from an artery in the abdominal wall which was hit by tapping at the point said to have been recommended by Munro, namely, at the middle of a line from the navel to the anterior superior spine of the ilium. Trzebicki came to the conclusion that this is not a safe place, owing to the proximity of branches of the internal epigastric, and advises either to tap in the median line or in the outer half of the above-mentioned line. Now comes Dr. Hermann Stieda[6] to prove that the danger comes from another artery, namely, a branch of the circumflex iliac. The branch in question is thus described in Quain's anatomy: "One considerable branch, sometimes replaced, however, by two or three smaller ones, arises near the anterior superior spine, and ascends between the internal oblique and transversalis muscles, supplying the abdominal wall and anastomosing with the epigastric and lumbar arteries." According to Stieda this branch, which, following Führer, he calls the external epigastric, arises usually from four to six centimetres from the anterior superior spine measured along Poupart's ligament. It sometimes extends to above the umbilicus. At the level of the anterior superior spine it is usually from four to five and a half centimetres internal to it. This writer, therefore, protests against Trzebicki's advice to tap in the outer half of the so-called line of Munro.

THE LOBULE OF THE LUNG AND ITS BLOOD-VESSELS.

Dr. W. S. Miller, of Clark University,[7] has done some very excellent work on this subject which he has studied by injections, corrosions, and reconstructions. Some of our readers may be glad of a description of the last named method, which we give in Dr. Miller's own words: "For the more complex lungs the reconstruction method of Born was resorted to, by which after the devotion of nearly two years to a single specimen, the desired light was obtained. The lung was first prepared by making a triple injection by which the capillaries were filled with Prussian blue, the arteries with vermillion, and the veins with ultramarine-blue gelatine. A single lobule was then removed, imbedded in paraffine and cut into sections twenty μ[8] thick. The magnifying power employed in reconstruction was one hundred, and each section was drawn on a wax plate two millimetres thick. As long as the terminal bronchus is in the section, it is quite easy to locate all the air-cells from section to section. Beyond the terminal bronchus the location of the blood-vessels and the shape of the air-sacs served as guides. In this way all the air-cells communicating with one bronchus were drawn on wax plates, and the sections carefully cut out. The framework left, when piled up, gave an exact model of the air-sacs, and the pieces piled gave a 'corrosion' of the same. The models were now cut in various directions in order to study the relation of the air-sacs to the terminal bronchus."

These studies, which were made on the dog's lung, gave the following result: A terminal bronchus gives off a number of passages called *vestibules*, each opening into an expansion called the *atrium*. From this three or more *air-sac passages* run to as many *air-sacs*, which are much larger than the atria. Around the air-sacs lie the *air-cells.* To be accurate, we should say some of the air-cells, for there are others arising from the bronchi and from the atria. The air-cells do not communicate directly, one with another. Dr. Miller states that the walls of the atria are thin, like those of the air-sacs, having a network of capillaries enclosed in them. We infer from this that these parts as well as the air-cells serve for respiration.

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[5] Internationale Monatschrift für Anatomie und Physiologie, 1891.

[6] Anætomisches Anzeiger, Nos. 7 and 8, April, 1892.

[7] Ibid, 1892, No. 6.

[8] This is twenty micro-millimetres.

The branches of the pulmonary artery follow the bronchi. Somewhat beyond the terminal bronchus the vessel divides into as many terminal branches as there are atria. Their ramifications cover the central side of the air-sacs, the capillary-network which arises from them enveloping the whole system, and emptying into veins which lie on the peripheral side. In the lobule each air-sac has a vein running at right angles to the direction of the artery. For the most part the veins keep on the periphery of the lobule. Each air-sac has an artery on its central and a vein on its peripheral side with a rich capillary system between them.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from No. 25, page 637.)

The Seventh Annual Meeting, held in the Army Medical Museum, Washington, D. C., May 24, 25, and 26, 1892.

SECOND DAY, AFTERNOON SESSION (CONTINUED).

THE SIGNIFICANCE OF INTERMISSION ON FUNCTIONAL NERVOUS DISEASES,

by Dr. W. H. Thomson, New York.

The term functional has been applied in general to the nervous diseases in which no characteristic organic changes have yet been demonstrated. Most writers, however, regard the term as only provisional, on the assumption that some kind of structural change in nervous matter must underlie every definite nervous disorder and that such change will in time be found. It has long seemed to the author that there are intermittent nervous disorders which cannot be explained by any hypothesis of changes in nervous matter whether molecular or otherwise, but are to be explained by the varied states of the blood which causes the nervous system to functionate.

By a proper selection of functional poisons we can artificially induce some close imitations of functional neuroses and cause neuralgias, paralyses, delirium, convulsions and all intermittent symptoms of the kind and then note these symptoms disappear in about the time and order that the functional nervous attacks decline. Another correspondence between functional poisons and functional neuroses is, that in both, pathological anatomy affords no assistance in the explanation of the results. Other correspondences between functional poisons and functional neuroses were given.

Modern chemistry tells us that in the healthiest processes of our digestion a whole series of poisons are elaborated which are of the same nature with the functional poisons with which we have been long familiar as quite sufficient to cause every variety of functional nervous derangements and even to kill without the microscope or scalpel being able to tell why.

Against the perils of auto-infection the system is provided with a variety of safeguards. One of the most efficient seems to be the antiseptic properties of the digestive secretions which keep the putrefactive processes in the alimentary canal in check. The liver also subserves, a preservative function against auto-infection. But the complex chemistry of these secretions is liable to numerous disturbing influences, notably nervous irritations. If nervous influences are capable of deranging the chemistry of the body, why may not such perturbances of nervous origin, occurring now and then, as nervous actionsc haracteristically do, suffice to produce either increased amounts of alkaloidal poisons or else to diminish the effectiveness of the normal antidotal processes? These considerations seem to offer us a hint of the explanation of the intermittency in functional neuroses.

The bearing of this view of functional neuroses on treatment is as follows: First, instead of vaguely expecting help from structural anatomy to show us the pathology and then the treatment of this difficult class of diseases, and meanwhile choosing our remedies according to the old empirical methods, the physician should look for aid to advance in the knowledge of the chemistry of diet. Second, gastro-intestinal antisepsis should be studied as a particular branch of therapeutics. (The value of a certain class of purgatives, conjoined with the administration of antiseptics, has been particularly impressed upon the author's mind in the treatment of migraine, of hysteria and of melancholia with quickened pulse.) Lastly, the investigation of leucomaines, of which lithæmic states are an example, is of equal importance in a great variety of morbid states, with functional disturbances.

Directed by these three principles, suggested by the progress of organic chemistry, I think that our treatment of functional diseases would be much more effective than if we continue to seek for mere drugs with specific properties or fruitlessly to wait the verdict of pathological anatomy.

A COLLECTIVE INVESTIGATION IN REGARD TO THE VALUE OF QUININE IN MALARIAL HÆMATURIA OR MALARIAL HÆMOGLOBINURIA,

by Dr. H. A. Hare, Philadelphia.

This paper consisted of an analysis of about 150 reports from physicians through the South as to the frequency, danger, chief symptoms and treatment of malarial hæmaturia and hæmoglobinuria, with particular reference to the value of quinine in this condition.

Dr. I. E. Atkinson: Undoubtedly the key-note has been struck when the production of hæmaturia and hæmoglobinuria by quinine is attributed to idiosyncrasy. That quinine has any fixed tendency to produce these conditions I do not believe, but that idiosyncrasy will call forth these conditions I have no doubt. Some five or six years ago I had an opportunity of studying several cases of hæmaturia in patients residing in an extremely malarious district south of the James River in Virginia. They did not suffer from distinct paroxysms of malarial fever. Their hæmaturia would come on at irregular times, would last for weeks and months, than would stop only to recur again. They were very anæmic. It occurred to me that these cases were of parasitic origin. I looked for the Bilharzia hæmatobia, but did not find it, nor did I find any parasite, but the suspicion still remains in my mind that these forms of hæmaturia that are found in certain low portions of the country in which malaria prevails will be found to be due to some form of parasite not malarial. I have saturated these people with quinine, without good results. I have stopped the hæmaturia by other agents, notably turpentine.

Dr. Tyson: I am satisfied that for the mild form of malarial hæmaturia which occurs in the Middle States, quinine is the remedy. In the severe cases, the blood has been reduced to a broken-down condition; the mischief has already been done and we must treat the condition which has resulted rather than prevent its occurrence. There doubtless occur all over the country even in the extreme South where these marked cases occur, certain of the milder cases such as we have in the Middle States. These milder cases are curable with quinine and I think they may account for the difference of opinion amongst Southern physicians in regard to the use of quinine. If I were living in the South and were confronted with these severe cases, it seems to me that I would prefer to run the risk of using quinine, rather than lose the chance of the good it might do.

I have had experience with the class of cases mentioned by Dr. Atkinson, but I was not led to the belief that they were due to a parasite. I never found a parasite, and it seems to me that they would not have improved had they been due to parasitic origin. I have saturated these cases with quinine and given them arsenic until they were œdematous, without any effect whatever. I have had better success with astringent mineral waters, such, for example, as Rockbridge Alum Water.

Dr. C. G. Stockton: Some years ago, at a meeting of the American Medical Association, I heard a paper upon hæmaturia, in which the use of large doses of alum were recommended. I have since had experience with this drug in this condition and I believe that many cases of hæmaturia that have resisted other remedies can be controlled by its use in large doses.

Dr. Henry: Before concluding that quinine is injurious in malarial hæmaturia, I think we would need to have more cases than those collected by Dr. Hare. I think it ought to be thoroughly established by microscopic examination that the cases in question are malarious and no conclusions should be drawn until such evidence is forthcoming. It may be interesting, from a historical point of view, to know that the first four cases of hæmaturia on record were cured by large doses of quinine.

Dr. V. C. Vaughan: I do not believe that quinine has any marked tendency to cause hæmaturia. I have seen a great deal of quinine administered and have seen many idiosyncrasies, but I have yet to see a case of hæmaturia. I once took one hundred grains of quinine at a dose and never had any irritation of the kidneys and certainly no hæmaturia. In the malaria of the South there must be some other factor than in that of the North. The plasmodium is the same in Illinois as in Louisiana and still hæmaturia is very rare in Illinois and the North.

Dr. Starling Loving: I have seen a good many people who have had idiosyncrasies in regard to quinine, but I have never seen blood coming from the kidneys in consequence of the influence of quinine. The cause is not the quinine but the structural change that has taken place in the kidney or elsewhere before the quinine has been administered.

Dr. H. A. Hare: I did not mean to urge that quinine should or should not be given. The point that I wanted to bring out is that every case is a law unto itself; that certain cases can take quinine and in other cases it ought not to be given. As to the first cases reported having been cured with quinine; of course these cases have no more significance than any other like number of cases.

THIRD DAY, THURSDAY. — MORNING SESSION.

A paper on

PULSATING PLEURAL EFFUSION,

by Dr. James C. Wilson, Philadelphia, and one on

TUBE CASTS AND THEIR DIAGNOSTIC VALUE,

by Dr. I. N. Danforth, Chicago, were read by title.

MISCONCEPTIONS AND MISNOMERS REVEALED BY MODERN GASTRIC RESEARCH,

by Dr. C. G. Stockton, Buffalo.

(1) The conditions usually called lithæmia, chronic gout and oxaluria, in this country, are in reality almost always forms of toxæmia of gastric origin.

(2) That the albuminoid diet so often advised in these conditions is frequently harmful and based on a misconception.

(3) That toxæmia of gastric origin expresses itself in special symptoms which are sometimes misunderstood. That certain affections of the nervous system, the air-passages and the joints are, amongst others, the result of auto-intoxication.

From his case-book, Dr. Stockton reported a number of instances showing that neurasthenia, vertigo, persistent headache, insomnia, muscular-spasm, and epileptiform convulsions, naso-pharyngeal catarrh, laryngitis, tracheo-bronchitis, asthma, Bouchard's nodules, some cases of so-called arthritis deformans and other joint troubles, depend upon gastro intestinal toxæmia. These cases proved manageable by treatment directed to the digestion, as guided by a study of the gastric contents, although in most instances they had long resisted other lines of treatment.

Dr. Musser: I quite agree as to the necessity for local treatment in such cases, but I want to emphasize the necessity of general treatment and general management also. In my care of such cases I have always been impressed with the efficacy and necessity of general treatment and management, the gastric condition being secondary. All such cases seem to arise from excessive wear and tear; and, whether by local treatment or general management, you must add to their nutrition.

Dr. H. M. Lyman: I wish to say a word as to the importance of considering the general condition of the patient. The etiology of these cases is generally connected with a history of scrofula or the arthritic diathesis, and it is important to recognize the connection of the local disease with the general substratum. Topical treatment is not, however, rendered any less necessary.

Dr. C. G. Stockton: I do not advocate the treatment of these affections by any special plan of gastric medication or lavage, nor do I forget the importance of the general management of the cases. I wish to insist upon the utmost importance of guiding the general management of these cases upon the findings from the examination of the stomach. Just as our knowledge of certain diseases is improved by examination of the eye and urine, so our knowledge will be improved by examining the contents of the stomach. I think it is a mistake to regard these cases from the general stand-point as much as we have been in the habit of doing. While we should recognize that there is a failure in the nervous system, we should also realize that when the stomach fails, we have toxæmias which give rise to a great variety of evils, and by relieving these toxæmias we relieve our patient.

THE PRODUCTION OF TUBULAR BREATHING IN CONSOLIDATION AND OTHER CONDITIONS OF THE LUNGS,

by DR. CHARLES CAREY, Buffalo.

The commonly accepted physical principles involved in the production of the sound designated bronchial or tubular breathing were given. The views of Laennec, Scoda, Flint and others were given.

Metallic casts of the lungs of man, sheep, calves and dogs were exhibited. Some of them were purely tubular castings; others castings of the most minute tubes; and in some the air-cells were shown. Where the air-cells were injected by the metal, they hid the tubes which they surrounded. These castings showed a uniform bifurcation of the air-passages, the bifurcating tubes being of equal size, and the large number of tubes of sufficient size to produce a blowing sound if air passes over their mouths.

The sound of bronchial breathing is due to the laryngeal-tracheal sound, transmitted, and raised in pitch by the air blowing over the patulous tubes leading to the lung, which does not receive air, or which receives it in diminished volume.

Diagrams were exhibited, showing how tubular breathing could be produced in pleurisy with effusion, where the lung is compressed up against the thoracic wall and adherent, and how, if fluid intervened between the compressed lung and the test wall, it would not be heard; how, in like manner, in a bronchial tube terminating in a cavity due to necrosis there is destruction of the vesicular expansion, and, as a result, a reverberation of the air in the cavity, as the air, rushing to other parts of the lung, blew over the mouth of the tube leading to this cavity.

DR. TYSON: Dr. Carey's paper has been of intense interest to me, and his demonstration seems to me a very reasonable one. It is certainly a great privilege to see his splendid preparations of lung castings.

DR. MASON: I have often been in doubt, in examining cases with pleural effusions, as to why in some cases we get bronchial breathing, and in others, with apparently a similar amount of fluid, we do not. I suppose from Dr. Carey's remarks and diagrams that it is due to the presence or absence of pleural adhesions.

DR. H. A. HARE: The openings of the bronchial tubes are not absolutely rigid, but to a great extent elastic, and the more elastic and yielding the tube the less the sound. In the act of respiration the air must flow with comparatively little force over the mouths of these tubes, and consequently the sound produced could not be great.

DR. J. P. C. GRIFFITH: What Dr. Mason has alluded to has often been puzzling to me, namely, the frequency with which bronchial breathing is heard in large pleural effusions. I once believed that I could diagnose between pneumonia and pleural effusion, but the older I grow the more I am coming to the conclusion that I can do nothing of the sort.

I should like to ask Dr. Carey, if, from his study of the anatomy of the lung, he has come to any conclusion as to why there is a difference in the auscultatory sounds, in the two sides of the chest, heard at the apices, in a normal condition.

DR. CHARLES CAREY: With reference to the point raised by Dr. Hare in regard to the elasticity of the bronchial tubes, while the bronchial tubes are not rigid yet they are provided with cartilaginous rings which will maintain them as a cavity in spite of the most continuous pressure of fluid from without or from inflammatory exudate.

Regarding the difference in auscultatory sounds at the right and left apices, I think the true explanation is to be found in the point of departure of the upper tube going to the right lung, which starts nearer the surface of the chest and much higher up than any of those that go to the left lung, as is shown in the metal castings.

THE DIFFERENT FORMS OF CARDIAC PAIN,

by DR. SAMUEL C. CHEW, Baltimore.

This kind of pain is found as a prominent symptom principally in three different forms of disease of the heart, and these are referred to from a clinical rather than a pathological point of view.

The first of these, and the one in which the pain exists in the most intense degree, is angina pectoris, — true angina, with increased arterial tension, occurring in paroxysms, and most frequently associated with aortic or coronary disease or with fatty degeneration of the heart. As the name of this affection implies, the pain is of the very essence of the disease itself. As recorded by Dr. Latham from his own observations, it is "a suffering as sharp as anything that can be conceived in the nature of pain, including something which is beyond the nature of pain — a sense of dying." The structural changes connected with true angina are in a very large proportion of cases those that produce cardiac ischemia, especially insufficiency or atheromatous rigidity of the aorta, obstructions of the coronaries, or fatty degeneration of the heart. Any one of these changes may lessen the blood-supply to the heart muscle; but only the first two are diagnosticable with certainty by auscultation. On the other hand, post-mortem examinations not infrequently show great sclerosis of the coronaries and also fatty degeneration, in cases in which the symptoms of angina pectoris had not been present during life.

In view of the many cases of angina in which great and prompt relief has been given by the nitrite of amyl, I cannot but feel surprised at the opinion expressed by several recent writers that it is doubtful whether there are any remedial agents that have any power to arrest or greatly relieve a paroxysm of the disease. I fully agree with Prof. F. C. Shattuck, that the value of the nitrites in angina is greater than Strümpell, the author upon whom he comments, would seem to admit.

A second form of cardiac pain, closely allied in character to the one already considered, and yet distinct from it in its pathological relations and generally less intense in type, is encountered as a complication of some cases of chronic nephritis, chiefly the contracted kidney of interstitial nephritis. In this class of cases the changes in the kidneys and sometimes in the heart are parts of a general arterio-sclerosis, and the pain in the heart is probably the expression of resistance to the blood-flow through the arterioles. In this form of cardiac pain, the attacks may be frequent, but they are in general less severe than those of true angina connected with heart lesions. It is in cases of this kind that potassium iodide in large doses, as advised by Huchard, may sometimes prove beneficial by lessening the arterio-sclerosis. In the painful attacks, a certain degree of relief may be obtained from amyl nitrite, which though it cannot reach the organic cause of obstruction, may lessen an incidental increase of tension.

A third form of cardiac pain is found in dilatation of the heart, and is perhaps due to tension and stretching of the nerves in the heart-substance. Traube held that the pain of true angina is due to this cause. Whether it be so or not, the subjects of cardiac dilatation frequently experience pain about the heart, greater in degree, in general, in proportion to the rapidity with which the dilatation is induced. If dilatation be extreme and acutely developed, free venesection may be the best means not only for relieving pain, but also for saving life.

In all forms of cardiac pain, arsenic is a remedy of much value, from its action as an anti-neuralgic, and from its power of promoting the nutrition of the heart. I hold with Anstie and Balfour, that there is no more important prophylactic tonic against cardiac neuralgia than arsenic.

It is quite possible that the chief factor in the production of pain common to all of these three forms of disease is pressure brought to bear upon the cardiac nerves or upon the cardiac ganglia themselves. The connection between these ganglia and the cervical and brachial plexuses gives a ready explanation of the extension of the pains to the arms that may occur in any form of cardiac pain. In the first, or strictly paroxysmal form, true angina, the pressure may be occasioned by the sudden tension of the arterioles; in the second form, by the general sclerotic state of the vessels; and in the third form, with dilatation of the heart, by the alteration of the heart walls.

Dr. M. A. Starr: It does not seem to me that all the cases of cardiac pain can be classified under these three heads. It seems to me that a further class should be added, and that this may possibly be divided into several sub-classes. I am accustomed to see very intense pain in connection with paroxysmal tachycardia. Again, in cases of extreme neurasthenia, especially in what I term the vaso-motor type, I am accustomed to find patients complaining very much of pain about the heart. Here, it seems to me, we have two separate and distinct forms that cannot be included under Dr. Chew's headings.

Dr. Musser: I think we would all be better off in practice if we considered all sorts of cardiac pain as angina. The doctor dropped a word about pain in the arms in association with cardiac pain. I have at present under my care a patient suffering severe pains in both arms without cardiac pain but always associated with high arterial tension and other phenomena of angina. I would like to lay stress upon the necessity of absolute rest in the treatment of all these cases and a regulation of diet based upon accurate knowledge of the actual functional disorder of the stomach that is present.

Dr. A. McPhedran: In regard to the treatment of these cases, I have found nitro-glycerine even preferable to amyl nitrite, its effects lasting longer. I have at present a patient who has arterio-sclerosis and suffers from cardiac angina. He is now taking forty to fifty minims of the one per cent. solution of nitro-glycerine daily with absolute relief.

Dr. C. G. Stockton: It is satisfactory to see the relation existing between cardiac pain and the morbid anatomy in certain cases, and exceedingly disappointing in other cases to discover the same lesions without the history of pain. It is exceedingly common to find dilatation without a history of pain. The claim that dilatation of the heart muscle of the left ventricle is the chief cause of cardiac pain must be abandoned. That cardiac pain exists more frequently with morbid changes than without them is true, but further than this we can hardly go.

Dr. Samuel G. Chew: Referring to the remarks of Dr. Starr, I would simply state that I did not attempt to present a complete category of all the cases in which cardaic pain might occur. I merely meant to set forth the three most important conditions. Had I intended to go into a complete exposition of all kinds of cardiac conditions in which pain occurs, I might also have referred to cardiac aneurism.

I have used nitro-glycerine in a number of cases with a good deal of success, but it seems to me that its rôle is different from that of nitrite of amyl: amyl nitrite is efficacious in giving immediate relief, nitro-glycerine in lessening the disposition to these paroxysms. In the minute doses commonly given I have never seen it possess any power of checking a paroxysm when it has come on.

Dr. C. G. Stockton: I have in mind an instance of a man in whom amyl nitrite excited but did not relieve pain, but who was completely relieved from his paroxysms by nitro-glycerine. He took half a grain of nitro-glycerine at a dose and the effect was almost instantaneous in the relief of pain. During twenty-four hours he has often taken five or six grains of nitro-glycerine.

AMERICAN MEDICAL ASSOCIATION.
SECTION IN THE PRACTICE OF MEDICINE.

(Continued from No. 25, page 639.)

SECOND DAY, WEDNESDAY, JUNE 8TH.

POSITIVE AND NEGATIVE MEDICATION,

by **Dr. Bedford Brown**, of Alexandria, Va.

More or less deaths occurring in practice are due to the incompetency of physicians, the incurable nature of given disease, careless nursing, and the adulteration and substitution by dishonest pharmacy. A point of primary importance is to assure ourselves of the solubility in the stomach of the remedies we use. On this account pills and capsules are often objectionable. Not infrequently they pass through the system, and are found unchanged in the dejecta. Furthermore, in all fevers and in many other states, the solvent power of the secretions is greatly lessened. Dr. Brown uses only glycerine or honey as excipient for pills; and gums of all kinds are open to the same charge of insolubility as sugar and gelatine. Often we must use solutions; and if these are not well borne, resort to rectal medication. Here mucilage offers itself as a proper vehicle for quinine when the latter remedy is indicated. The cold bath in high temperatures may often further increase the absorptive power of the system. Moreover, one should see to it that when we order infusions and decoctions, the latter are made out of pure materials. We should avoid cheap drugs, because that very cheapness is a confession of inferiority.

Dr. H. D. Didama, of New York, used tablets and wafers entirely to the exclusion of pills. It was evident that dispensing by the physician was growing in both professional and popular favor.

Dr. Wilson, of Kansas City, and Dr. Herrick of Cleveland, also commended the practice alluded to.

THE RELATIVE INTER-DEPENDENCE OF ORGANS IN HEALTH AND DISEASE,

by Dr. Herrick, of Cleveland, O.

He divided the various organs into three groups. In the first were the osseous, connective, and cellular tissues. In the second the circulatory, muscular, nervous and reproductive organs; and in the third the organs of secretion, of digestion, absorption, assimilation and excretion. The first was entirely passive, the second was active in securing the alternate end of life, and the integrity of the third was necessary for the functions of the second to be performed in a proper manner. The third group had for its alternate end the transformation of food stuffs into blood.

A CASE OF AMŒBIC DYSENTERY,[1]

was reported by Dr. E. P. Gerry, of Jamaica Plain, Mass.

RETAINED FÆCES,

by Dr. W. D. Christopher, of Chicago.

Bowels apparently normal, often contained scybalous masses which could be brought away only by intestinal irrigation. These masses may cause peritonitis, local or general, typhlitis, and appendicitis. They may give rise to certain catarrhal states, in which the bacterium coli communis, ordinarily harmless, becomes exceedingly virulent. Of the poisons engendered by fæcal retention a small amount may be destroyed by the liver, but if this organ is impaired or the dose of the poison is large, we may have the "stercoræmia," "stercoræmie" of the French writers. In using rectal injections the water should be warm. Several trials may be necessary before much fæcal matter comes away. Iron and belladonna are a useful combination to enable the bowel to retain its healthy state.

Dr. N. S. Davis, Jr., of Chicago, believed that fæcal retention was common in those whose bowels moved daily; these evacuations were merely nature's overflow and were utterly insufficient to empty the gut.

The paper was also discussed by several of the other members present.

THE TRANSMISSION AND BEHAVIOR OF TYPHOID POISON AS OBSERVED IN COUNTRY PRACTICE,

by Dr. Lewis N. Davis, of Farmland, Ind.

It was generally believed that water is in the main, if not the only, channel by which the typhoid poison was conveyed, and that the germs in the stool were passive when they left the body of the patient; but in country practice there were many evidences to be had that the disease was contagious, and that it was conveyed by the air; also that the poison was virulent as it left the body. Several epidemics were quoted in support of this view.

The paper was discussed by Dr. Chapin, of Michigan, who thought that the views of the writer were correct; and by Dr. J. H. Musser, of Cincinnati, who did not think the conclusions were sound. He himself believed in transmission of the poison through drinking-water.

CATARRHAL GASTRITIS,

by Dr. Harold N. Mayer, of Chicago.

The term dyspepsia should be given up. It is a symptom and not a disease in itself. In chronic catarrhal gastritis we have too much mucus with a resulting impairment of digestive power. Out of 118 cases of gastric trouble, he had found 17 of uncomplicated gastritis (chronic) giving the usual symptoms in different combination and varying severity of epigastric pains, nausea and vomiting. Less common were fulness, coated tongue, eructations, anorexia, vomiting, constipation, etc. As to etiology, the trouble is more common in males and users of tobacco, alcohol, and excesses in iced drinks. The duration varies from months to years. The treatment is one of diet and but little medicine. Lavage had in his opinion but a limited value, because patients would not submit to it. He is in the habit of directing patients to drink from eight to sixteen ounces of very hot solution of bicarbonate of soda (ten grains to the pint) twenty minutes before eating. This removes the mucus and enables the food to come into direct contact with the mucous membrane of the stomach. Thereby normal peristalsis is set up. As to diet, a trial meal of lean meat and buttered bread should be given. As the patient improves, oysters, eggs, etc., can be added. Pastry should be avoided. Bismuth, cerum, nux vomica, and tonics can only be adjuvants; pepsin is good where there is atrophy of the gastric tubules or organic structural changes; also in anæmic cases.

Dr. Stockton, of Buffalo, N. Y., regarded lavage as especially good for diagnosis, if not for treatment. Many of these cases are due to excess of hydrochloric acid, and such a condition must, of course, largely determine the nature of the diet. The stomach contents are often too long retained in that organ, and imperfectly digested, even where no symptoms are complained of.

Dr. Lyon, of Philadelphia, had found an absence of hydrochloric acid in many of these cases.

Dr. Hare, of Philadelphia, believed that the pepsin and soda mixture is often of service, because the acid to enable the latter to act overcame the alkaline effect of the soda and aided digestion. We make the mistake of prescribing too much pepsin and too little acid. Bitter tonics he believed, did more harm than good. Intestional digestion was more powerful than gastric; hence we should give food rapidly passing into the bowels.

The paper was also discussed by Drs. Scoll, of Cleveland; Porter, of Michigan; and Davis, Jr., of Chicago.

THE VERTIGO OF ARTERIO-SCLEROSIS,[2]

by Dr. Archibald Church, of Chicago.

SOME NON-VALVULAR HEART MURMURS,

by Dr. N. S. Davis, Jr., of Chicago.

Non-valvular heart murmurs may give the same physical signs as valvular ones, the same changes also in the size and position of the heart. Not infrequently we have cough, dyspnœa, vascular disturbance, œdema, urinary changes, etc. He related the histories of several cases in which the autopsy showed the cause of the murmurs to be old and tenacious decolorized clots in the ventricles and entangled among the chordæ tendinæ. In one case there was an old calcified plate of connective tissue (the result of a former pericarditis) in pericardium. The murmur in this latter instance was probably due to irregular contraction in the ventricular walls, causing various eddies in the blood-current. Anæmia also caused murmurs not distinguishable in their physical characteristics from those of valvular lesions.

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[1] Journal, vol. cxxv, p. 592.

[2] See page 650 of the Journal.

THE IMPORTANCE OF POSITION IN EXAMINATION FOR DISEASE OF THE HEART,

a paper by **Dr. O. B. Campbell**, of Ovid, Mich.

The anatomical relations of the diaphragm are fixed, but the apex may be bagged down from change of size of the heart. If the patient bends forward the apex beat becomes more diffused transversely, but not vertically. He recommended recumbency in examining for cardiac disease, as he believed that the sounds became thereby more distinct. Out of 100 cases the murmur became more distinct in the recumbent position in 78; more distinct in the upright position in 6; not heard standing but developed on lying down, 4; unaffected by change of position, 12.

These papers were discussed by **Drs. Kennedy**, of Michigan, and **Newcomb**, of New York.

THIRD DAY, THURSDAY, JUNE 9TH.

THE GENESIS OF PNEUMONIA,

by **Dr. W. W. Pennell**, of Fredericktown, O.

The great question is, as to whether pneumonia is a general fever or a local disease. Bacteria, the writer believes, plays only a secondary part in an exudative affection. The inflammation produced experimentally by pure cultures of this germ differs from that of the primary culture. There is not an exact analogy with so-called specific diseases, and our treatment is not such as to carry out this view. The infectious character of the disease is not observed in country districts.

As against this specific character are the following arguments: (1) more than one germ is found; (2) the patients are liable to subsequent attacks of the disease; (3) it is not contagious; (4) there are not prodromata; (5) there are no sequalæ as in typhoid fever; (6) there is a distinct crisis unless peri-infiltration or abscess result, and if the exudate can be kept in the vesicles (in quarantine as it were), it will lose its power to infect; (7) antiphlogistic treatment will often abort the disease.

The causes of the disease may be enumerated as follows: (1) cold, merely, is not a cause; (2) continued exposure with wide thermometric range; (3) dust-chill, often felt by farmers after thrashing grain; (4) as a sequela of lowered vitality due to vicious habits, especially alcohol and venery; (5) inhalation of dust and foreign bodies; (6) bad general hygiene, poor sanitation, enervating habits, etc.; (7) some persons and families appear to have a predisposition; (8) neither age nor sex gives exemption.

The three factors then, in pneumonia, appear to be, predisposition, loss or lack of normal tissue resistance, and exciting cause.

Dr. Bailey, of Kentucky, believed that the typical history points to a definite cause. The fever terminates irrespective or independently of the local condition. The physical signs show more blood infiltration the day after the crisis of the disease, than the day before.

THE CARDIAC INDICATIONS IN THE TREATMENT OF PNEUMONIA,

by **Dr. J. M. Ambers**, of Philadelphia.

The causes of this cardiac weakness may be threefold: (1) We may have absorption of cardiac ptomaines as a result of the disease process, with a weakening of the heart muscles. (2) There may be pulmonary obstruction produced by the presence of the exudate acting as a local barrier to the integrity of the circulation. (3) We may have the formation of cardiac thrombi which are found in the right ventricle. The latter becomes dilated and thus we have a failure of the heart power.

The signs of the muscular degeneration appear as feebleness, shortening of the first apex sound, and a similar condition of the aortic second sound. The pulmonary second sound may be accentuated, at least temporarily. Here, alcohol in moderate doses is indicated. It stimulates the cardiac ganglia, respiration and nerve-centres. It should be followed up by strychnine, which remedy has a well-known stimulating effect upon the cardio-pulmonary apparatus. Digitalis is to be used very cautiously, if at all; it may, in some cases, by lengthening the period of diastole, favor the nutrition of the heart muscles. For the local engorgement, cups, leeches and especially ice-bags are found to be very efficacious. The writer, however, distinctly deprecates the use of veratrum viride, antimony, aconite and similar cardiac sedatives. To control any cardiac over-action, morphine is the remedy *par excellence.* Venesection may be occasionally, but rarely, necessary. If there is much consolidation with difficult heart action, veratrum might be cautiously exhibited.

In regard to the temperature, where it runs high, it should be reduced without, at the same time, reducing the force of the heart's action. A fever of 104° F. needs no antipyretic measure. Beyond that point, however, we should employ cold sponging, and administer from sixteen to twenty grains of quinine daily. The coal-tar derivatives come under the ban, for they are all cardiac depressors to a greater or lesser degree, and cardiac depression is the one thing we wish to avoid.

In regard to the obstructed pulmonary circulation, we must remember, first, that consolidation of a single lobe does not greatly interfere with the breathing, but should the pulmonary second sound lose its sharp accentuation, and gradually become weaker, we have a double duty to perform; we must increase the power of the heart and deplete the lung. For this purpose we must not depend on any of the nitrites alone, as they will be useless, cups and venesection alone prove adequate, and here we find the indication for the employment of digitalis combined with nitro-glycerine. The formation of cardiac thrombi is probably far more frequent than is generally believed, and is often associated with two factors. In this disease, the fibrin-forming elements are increased. The signs of this condition are not difficult to recognize. The impulse is irregular and the area of dulness runs beyond the sternum. There is a systolic bruit heard at the xiphoid cartilage, which is transmitted upwards and to the left.

Ammonium salts appear to be the only remedy at our command with which to effect the fluidity of the blood, and they should be freely administered.

Dr. Bailey believed that phenacetine could be safely used as an antipyretic in pneumonia. It is as efficient as the external application of cold water, and no more depressing to the heart. He did not believe in blood-letting and had never seen a case of pneumonia where, in his opinion, venesection was indicated. He doubted the power of the ammonium compounds to dissolve clots already existing, but believed the latter might thereby be prevented from forming.

Dr. Truax, of New York, favored venesection.

Dr. Herrick, of Cleveland, thought that the antecedents of pneumonia were to be found in the perverted action of the abdominal organs.

Dr. Didama, of Syracuse, thought that venesection was good for those cases in which there was extreme cyanosis with prune-juice expectoration.

Dr. Musser, of Cincinnati, regarded the disease as specific and infectious, and the three remedies generally required are cold, venesection and rest. The indication for venesection are physical signs, the spreading of hepatization to any areas of lung tissue and altered relations between pulse, respiration and temperature. Strychnine should be used hypodermatically. Digitalis was not of much service. Alcohol, in the form of champagne, held a very high place in his estimation. For rest and freedom from worry, nothing equalled morphine in value.

DARWINISM AND DISEASE,

by Dr. Hutchingson, of Des Moines, Iowa.

The leading idea was that the majority if not all pathological processes are merely illustrations of various phases of evolutions and at times of benefit to animal cells and to the body at large. Reversion of type often takes place and is followed by corresponding disadvantages. Numerous illustrations are given showing practical applications of these views to the recognition of the apparent deformities in body structures and anomalies in disease.

Tissue group reversions may be either caseous, calcarious, fatty or fibroid. They might all be characterized as vital action gone wrong.

Reproductive reversions are tubercular, gumma, benign growths, malignant growths and hypertrophy.

If malignant reversion occur in connective tissue we have sarcoma with its round or spindle shaped cells. If in glandular or epithelial layers, carcinoma, which may be described as a parody on glandular tissue. From all this we must believe that there must be another factor in disease than the germ. Lowered vitality is concerned therein and our treatment should be to improve the nutrition and thus elevate vitality that the normal process of bodily evolution should go on undisturbed.

ON THE ANALOGY BETWEEN ACUTE IDIOPATHIC PLEURITIS AND ACUTE ARTICULAR RHEUMATISM,

by Dr. E. L. Shurly, of Detroit, Mich.

Pleural as well as synovial and other serous membranes, spring from some primordial layer and mesoblast and are ultimately developed into some endothelial lining; hence that would naturally be affected by any pathological process.

On the other hand, there is a correspondence between phenomena characteristics and general clinical history of the two diseases.

The presence of pleuritic effusion in rheumatism may be suspected when we have fugitive pains in the side, respiratory embarrassment or sudden exacerbation of temperature unattended by any increase in the joint disturbances. Often these appearances are regarded as due to pericarditis or endocarditis when they are really of pleuritic origin. Furthermore, the results of treatment are corroborative of the views expressed as to the identity of the two affections.

As to treatment, salicylate of soda appears to be the most efficient remedy for this condition of the pleura.

Dr. Stockton, of Buffalo, spoke of the causes of pleurisy associated with and preceded by articular rheumatism. The former trouble might be worse than the joint disease.

Dr. Atkinson, of Baltimore, thought that while the relation between the two diseases might be true in theory, the revelations of the dead-house negatived the idea of there being any great amount of pleurisy in these rheumatic cases. Most of the cases of pleurisy could not be explained on the rheumatic theory.

In pericarditis we find pleuro-pericardial signs which may be mistaken for simple pleurisy.

Dr. Collins, of London, Ontario, remarked that sodium salicylate will often cure inflammation in any serous membrane. The remedy can be regarded as a true germicide.

ADDITIONAL EVIDENCES OF THE VALUE OF FORCED RESPIRATION, FELL-METHOD, IN OPIUM NARCOSIS,

by Dr. George E. Fell, of Cincinnati, O.

In addition to the nineteen cases previously reported the author gave five additional ones. He thought that this method of resuscitation would be applicable to drowning or asphyxia from any cause. His apparatus with its face-mask was exhibited and its method of use demonstrated.

Ten more papers were announced but not read.

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AMERICAN MEDICAL ASSOCIATION.
SECTION ON SURGERY AND ANATOMY.

FIRST DAY, TUESDAY, JUNE 7TH.

SURGERY OF THE GALL-BLADDER AND DUCTS.

Dr. J. McFadden Gaston, of Atlanta, Ga., read a paper with the foregoing title, in which he referred to his experiments upon dogs and considered the literature of the subject down to the present time. Surgery of the gall-bladder is, as a rule, confined to the measures indicated in occlusion of the common duct. Where the duct is occluded by other cause than impacted stone, it is generally necessary to remove the gall bladder. The dissection of its upper portion from the lower is a rather difficult operation and attended with risk. He is accustomed to leave this portion of the bladder *in situ*. All stone obstructions should be removed, and an external opening only, should be regarded merely as a temporary expedient. The gall-bladder should be united with the intestine. While it is most desirable to establish the fistula with the duodenum, one with the jejuuum would not prove less useful; but one with the colon gave an unsatisfactory result.

OBSTRUCTION OF THE CYSTIC DUCT,

by Dr. W. H. Myers, of Fort Wayne, Ind.

Stones might be present in the gall-bladder without pain, and there might be pain without jaundice; but when the cystic duct was the seat of the impacted calculus the pain was very severe. The paroxysms usually come on within an hour or two after the ingestion of food, and are apparently due to the effort of the gall-bladder to empty itself by the contraction of its muscular coats. In the case which he reported several stones were removed, and the bladder and abdominal opening stitched together. Only a slight quantity of bile appeared on the dressings, but the fistula remained open. In all similar cases he would remove the viscus.

PERITONITIS FROM GALL-STONES.

Dr. W. E. B. Davis, of Rome, Ga., claimed that the risk from the rupture of the gall-bladder or ducts, was from infection of the peritoneal cavity by septic material from the gall-bladder rather than from the bile itself. Bile is not a septic fluid, and only causes peritonitis by irritation, and then only when in large quantities. Escaping slowly, it sets up protective inflammations which cause adhesions which cuts it off from the general peritoneal cavity. Peritonitis from escaping gall-stones is rare, and even then is usually due to the septic quality of the fluid which accompanies them. In his experiments upon dogs the bile did not produce peritonitis when allowed to escape into the peritoneal cavity. Packing the wound with iodoform gauze, which was left in three days, prevented peritonitis. Of course, the danger of peritonitis is greater from the presence of a gall-stone than in experimental work where pure bile only was allowed to escape. The chief point he wished to make was the protection given by packing with iodoform gauze.

In the discussion which followed, **Dr. A. Vander Veer**, of Albany, N. Y., said he felt it unsafe to leave the anterior wall of the gall-bladder as advised by Dr. Gaston. He cited a case from which he removed sixty-four calculi. The external fistula remained open. Some time later the patient dying of tuberculosis, he found the duct was closed. He favored medicinal treatment for a time, but should the case grow worse, he would then operate. Jaundice is absent in the majority of the cases of the paroxysmal; pain is the principal symptoms for which the surgeon must look. Perforation and a resultant septic peritonitis is the chief danger in delaying the operation. Be sure there is an opening into the intestine before closing the external opening.

Dr. Marcy, of Boston, reported four unpublished cases, and urged early operation.

Dr. J. F. W. Ross, of Toronto, thought puncturing the intestine by the needle in suturing, with escape of the intestinal contents into the peritoneal cavity, was one of the greatest risks.

Dr. Ferger, of Chicago, spoke of inflammation of the gall-bladder without obstruction to the flow of bile, and thought that two operations a safer procedure than to attempt to relieve the condition all at a single sitting.

Dr. Allen, of Cleveland, reported a case of a patient who had refused the operation and who died from the pain caused by the plugging of the cystic duct.

GUNSHOT WOUND OF THE LIVER AND STOMACH.

Dr. James T. Jelks, of Hot Springs, Ark., reported a case where a ball entered the left of the spinal column, just below the lower border of the ribs. The patient when first seen had vomited much blood and was in a state of shock. An opening was made extending from the ensiform cartilage to two inches below the umbilicus. The patient again vomited blood and the stomach and ball was thrown out of the abdominal cavity into the hands of the operator. Careful examination revealed no stomach wound, but a bleeding wound was found on the posterior border of the liver. This was packed with iodoform gauze, the cavity washed out, the intestines returned, a glass drainage-tube inserted and the abdominal wound closed by sutures. Before union was perfect a fit of coughing caused the wound to break open and a knuckle of intestine protruded. This was replaced and a good recovery resulted in three weeks.

RUPTURE OF THE LIVER.

Dr. Ferger reported a case of liver rupture resulting from a fall through an elevator shaft, where he found, a year later, that much hæmorrhage had taken place without evil results.

Dr. Gregory, of St. Louis, thought that in Dr. Jelks's case, the patient would have recovered without any operation, unless the plugging of the liver wound had saved his life.

Dr. Thorn, of Toledo, reported a case of laceration of the liver left without treatment and which resulted in death from loss of blood.

Dr. B. A. Watson, of Jersey City, said shock was not always present, and if absent, what indications have we for operation if we are not to operate on all cases.

Dr. Walker, of Tennessee, cited a case in which there was shock when he was called to see the patient, who declined operation, but who died from hæmorrhage some three hours later.

TREATMENT OF ŒSOPHAGEAL STRICTURE BY ELECTROLYSIS.

Dr. D. S. Campbell, of Detroit, reported seven new cases and one old case of œsophageal stricture treated by electrolysis, all of which made good recoveries.

SECOND DAY, WEDNESDAY, JUNE 8TH.

THE LATE MANIFESTATIONS OF APPENDICITIS AND THEIR TREATMENT,

a paper by **Dr. Dudley P. Allen**, of Cleveland, containing a report of six cases selected for illustration and discussion, showing the dangers and complications arising in cases which had escaped the primary attack of appendicitis. These cases included large collections of pus in the side, secondary abscess in the liver, lung, psoas muscle, thigh, and long existing circumscribed abscess opening repeatedly into the intestine.

The writer's personal experience fully convinced him of the dangerous character of appendicitis when left to follow its natural course, and he was also convinced of the soundness of the opinion of the American surgeons favoring operation in all suitable cases, as against that of a large number of English surgeons, who prefer leaving the disease to medical treatment. He had operated on several cases where the patients had supposed themselves suffering from repeated attacks of intestinal colic and the observation was well established that many cases of appendicitis resulting in operation or death had been preceded by other attacks of a less serious nature.

The use of salines as opposed to the opium treatment was discussed, more particularly in its reference to primary attacks of appendicitis than to those of a marked nature, and, while the dangers of salines were recognized, it was claimed, in certain cases, they relieved the extreme tympanites which, when present, rendered the operation difficult and apparently destroyed the patient after a successful operation had been performed, through paralysis of the intestine from extreme distention. The extra-peritoneal operation was favored, where feasible; but one great objection to this method was the undeniable fact that a certain proportion of small abscesses and foreign bodies might be overlooked, therefore, the transperitoneal operation was advocated where the surgeon considered it necessary to get at the seat of the disease. Many surgeons hesitated in undertaking so serious an operation when the disease was apparently quiescent, but where the difficulty was recurrent the operation should not be delayed too long, since the danger from recurrent attacks is considered much greater than the operation.

DESÉMOID TUMORS OF THE ABDOMINAL WALLS,

was the title of a paper to have been read by **Dr. Nicholas Senn**, of Chicago, but which he had been unable to complete, and in lieu of which he made a few remarks. He cited a case where all the symptoms indicated a dilated stomach from cicatricial contraction and stenosis of the pylorus. On operating the stomach was found very much dilated, but cicatricial stenosis of the pylorus was absent. However, there were many adhesions, especially in the neighborhood of the gall-bladder, in which he found a gall-stone, which upon being removed and the adhesions separated, terminated in recovery with complete relief from the gastric symptoms. The patient had no symptoms indicating the presence of gall-stones. Another case presented the symptoms of acute intestinal obstruction of the lower part of the small intestine where upon operation a gall-stone the size of a walnut was found about twenty inches above the ilio-cæcal valve.

Dr. Senn, thought stones of this size always enter the intestine by perforation of the gall-bladder and local peritonitis, rather than through the normal biliary passage. He operated upon four cases of desémoid tumor of the abdominal wall during the past two years. These tumors originate from the mesoblast. arising from the sheath of some one of the abdominal muscles. In structure they resemble a fibroma, with some of the characteristics of a sarcoma. The four tumors were all in child-bearing women, and perhaps due to trauma of the sheath of one of the abdominal muscles. They grow more rapid than ordinary fibroma, are less distinctly separated at their margins from surrounding tissues, and are often attached internally to the peritoneum. necessitating an intra-peritoneal operation. The gap in the peritoneum is closed by making use of the omentum. The diagnosis between intramural and intra-abdominal tumors is often very difficult.

A specimen tumor with a drawing of its microscopical appearance was exhibited

INTESTINAL LESIONS IN ABDOMINAL AND PELVIC SURGERY,

by **Dr. Joseph Price**, of Philadelphia.

He said he would only present the leading features of the part these lesions play in making the pathology of these complaints complex, and afterward consider the best way of dealing with them for the good of the patient and comfort of the surgeon. Aside from the conditions brought about by purely pathological processes, past operative complications, due principally to hasty, ill-advised work, or unfinished operations, are at the bottom of many surgical complications that would not otherwise exist. These operations are the worst surgery has to deal with, because they involve both old and new inflammations and the obliteration of anatomical landmarks previously existing.

We may also place in the same category complications due to failure to drain and the use of irritating solutions. Meddlesome interference with natural drainage, by the introduction of quantities of gauze into the pelvis, must necessarily produce adhesions. The less the peritoneum is meddled with after completing an operation, the less liable are we to have damaging adhesions. Finger-tips and not the knife should be used in separating parts and organs joined by adhesions. The complication arising by separating adhesions is hæmorrhage. This should be controlled by packing and flushing the bleeding cavities with very hot water. Ligatures should be used only in exceptional cases. In all suppurative and inflammatory abdominal and pelvic disease the line of treatment should be as follows: Remove the diseased organs, carefully flush the parts free from débris, and lastly drain carefully.

THE COMPARATIVE MERITS OF INGUINAL AND LUMBAR COLOTOMY.

Dr. J. Matthews claimed that few if any surgeons of this country now performed lumbar colotomy, holding that the lumbar operation was practically obsolete. He, however, did not consider the inguinal operation any easier or safer, since the inguinal operation is intra-peritoneal, while the lumbar is extra-peritoneal.

THE SIGNIFICANCE OF A HERNIAL SAC.

Dr. E. H. Gregory, of St. Louis, claimed it to be of the greatest importance to diagnosticate a hernia before a sac is formed. When a sac is formed the patient is liable to all of the calamities, such as incarceration or strangulation. Palliative treatment consists in the permanent evacuation of the sac; the radical cure consists of obliteration of the sac. The early diagnosis of hernia, and prevention of the sac formation, is apparently the only hope of a perfect result.

THE TREATMENT OF INJURIES OF THE ABDOMEN NOT REQUIRING SURGICAL OPERATION,

was the title of a paper read by **Dr. J. Schneck**, of Mt. Carmel, Ill.

Injuries received above the umbilicus are much more serious than those below that point. This fact is apparently because the organs above the umbilicus are of more vital importance than those situated below it. The restoration of innervation is one of the most important effects to be accomplished in the way of treatment, and this is best done by the application of heat both internally and externally. The administration of stimulants has but little if any value, while hot water is always of use, even if vomited. The injection of hot water is always of value.

BASSINI'S METHOD FOR THE CURE OF INGUINAL HERNIA APPLIED TO A CASE COMPLICATED BY UNDESCENDED TESTICLE.

A report was furnished by Dr. Samuel E. Milliken, of New York, of a patient, aged eighteen, who had been under observation for a year or more, with the hope of straining the hernia, at the same time allowing the testis to descend. The truss was worn day and night with but little improvement, when it was decided to perform the radical operation after the method of Bassini, and at the same time attempt to anchor the testicle in the scrotum. The case illustrated that although the testis and hernia had escaped into the internal rings when the patient was etherized, the sac had not been reduced. After the slitting of the tendon of the external oblique muscle after Bassini's method the testis was readily reproduced by making traction on the vas deferens, a loop of which remained in the canal firmly adherent to the tunica vaginalis. The sac, being congenital, was cut off an inch above the testis and the tunica vaginalis reformed. Three catgut sutures were passed through this newly formed tunica and the bottom of the scrotum, simultaneously for fixation. The inguinal canal having been reconstructed, the wound was dressed as a single herniotomy.

HERNIA, OPERABLE AND INOPERABLE.

Dr. Thomas H. Manly, of New York, reviewed the literature of the subject and epitomized it and considered the question of the treatment of hernia in a general way. He said:

(1) No operative scheme yet being devised which effectually removes the causes of every species of hernia, permanent cure is out of the question in certain cases.

(2) The radical cure of hernia may be regarded as one of the most satisfactory operations of surgery. That the disease sometimes relapses is not valid objection against surgical intervention, for relapses are common in the majority of operations performed on the human body.

(3) Unless there are pressing reasons, no radical operation should be encouraged for a non-strangulated hernia which gave no serious inconvenience.

(4) Hernial operations should not be performed in the extremes of age.

(5) Inguinal hernia in women should always be treated by a radical open operation, unless there are especially contra-indicating factors in the case.

(6) All operations, as a rule, on reducible unincarcerated hernia are radically curative, though there are many relapses.

(7) All operations for strangulated hernia should always include such additional steps as will effect thereafter a complete obliteration of the inguinal canal.

(8) Except in case of strangulation, very large old hernia in any of the abdominal regions, are not operable.

A FEW POINTS ON THE MANAGEMENT OF STRANGULATED HERNIA,

by Dr. W. B. Degarmo, of New York.

The death-rate from strangulated hernia is far in excess of what it should be on account of reliance placed in certain internal remedies, and to the exaggerated ideas as to the difficulties attending operative measures. A physician who tests the merits of non-surgical methods is not only wasting valuable time, but he is assuming a grave responsibility, and probably sacrificing the patient's life. He warns them regarding cases where local pain is absent or where all symptoms have been masked by the use of the hypodermatic syringe. He believes many lives have been sacrificed as a result of its use. Shock or collapse is a symptom of the gravest importance and demands very prompt surgical relief. He believes medical treatment, on the whole, is not only unreliable, but in many cases injurious, and as a means of reducing hernia, no reliance should be placed in it. The causative action of muscular spasm is not believed in. Among all external applications, but one is commended, and that is, pour a small amount of sulphuric ether over the tumor every few minutes, exposing the parts to the atmosphere to favor rapid evaporation. This, however, should be done only in the early stages and before the vitality of the parts has been impaired. Taxis, as ordinarily performed, is condemned, and a method of traction and compression described, having for its object the lengthening out the neck of the tumor, relieving by compression the engorged vessels and imprisoned fluids and gases. Anæsthetics for the purpose of reducing hernia are not commended, although careful manipulation under their effect, should always precede an operation; aspiration should not be used except in some very rare cases.

He believes the Emly operation to be one of the most simple in surgery, and should always be done early. Waiting for fæcal vomiting is a relic of the (surgical) dark ages. It is always safer to open and examine the contents of the sac. In amputating masses of omentum, numerous aseptic silk ligatures should be used, instead of tying off with one ligature of catgut. Should the bowel be of a dark chocolate color, but not necrotic, hot compresses should be applied after cutting the constriction. Where the gut is gangrenous, a temporary artificial anus is believed to be the safer method for the patient. The use of methods for favoring permanent cure to follow operations for relief are strongly commended. The author has used silk exclusively for four years in all hernial operations, and since he has himself sterilized and prepared it, has had no trouble about its coming out of the deep muscular tissues.

THE MANAGEMENT OF GANGRENOUS HERNIA.

Dr. Joseph Ransohoff, of Cincinnati, read a paper and cited the statistics of strangulated hernia during the past twenty years. Of these but fourteen per cent. were found gangrenous. Four cases were reported in detail. In two, the suspicious area was returned to the abdomen; they both died. In the other two the constricting band was divided, the gangrenous portion excised, and the healthy part returned to the peritoneal cavity; both these latter cases recovered. The author discussed at length the steps of the operation and the logic by which this treatment might be expected to give satisfactory results.

DISCUSSION OF HERNIA.

Dr. Marcy, of Boston, after discussing the subject in full, enumerated as essentials for the operation:

(1) Asepsis.

(2) Resection of the sac.

(3) Restoration of the obliquity of the canal in inguinal hernia in the male.

(4) Closure of the wounds by means of buried tendon sutures.

(5) Coaptation of the skin by a blind buried suture, and sealing with iodoform collodion, re-enforced by a few fibres of cotton without drainage.

DISCUSSION ON ABDOMINAL SURGERY.

Dr. B. A. Watson, of Jersey City, said the essential in all abdominal surgery was asepsis. Had we any means of knowing the condition of the peritoneal cavity as to asepsis, we would know when to operate and when operation should be avoided or postponed. In the absence of this knowledge he was inclined to to wait a short time and be guided by the symptoms presenting, watching with the utmost care and prepared to operate at any hour. He strongly disapproved of Dr. Link's idea that the family physician and the country doctor should operate in all cases at once and not wait for the arrival of a surgeon, claiming that no one unfamiliar with the details of antiseptic work should attempt an abdominal operation, or, indeed, any operation whatever.

Recent Literature.

Diseases of the Skin. A manual for practitioners and students. By W. Allan Jamieson, M.D., F.R.C.P. (Ed.). Third edition. Philadelphia: Lea Bros. & Co.

A third edition of Dr. Jamieson's work on diseases of the skin has appeared, enlarged and enriched by the additions of increased space to several subjects that have of late come into prominence, as dermatitis herpetiformis, pityriasis rubra pilaris, lymphangioma circumscriptum, etc. The author's plan of interpolating a description of cases, of which 118 are scattered through the volume, makes the book an interesting one for the expert, but diminishes its value considerably for the student and general practitioner, as many of these cases are cited on account of some obscure deviation from the ordinary type, or leave some doubt as to their nature. Exception will be taken by almost all modern histologists to the author's view (the old one) of the anatomical nature of molluscum contagiosum. Whether or not the view that the contents of these tumors are in part composed of causative gregarinæ be accepted, it is quite generally conceded that the growths are not connected with the glands or hair follicles. It is also a disappointment not to see lupus classified distinctly under the heading of tuberculosis, in an edition bearing the date of the current year.

In the matter of treatment the book is to be commended as affording much that is interesting and suggestive, as an account of the managnment of almost every specified case is included. Whether the modifications of previously existing methods that have been proposed by Unna, of whom the author is an ardent disciple, have in every case constituted an important advance in treatment, may be as yet regarded as a matter of individual opinion.

Dr. Jamieson's large experience ensures for the book a wide reading, especially among those particularly interested in dermatology. The book is original, and on the whole strong: and the writer impresses us, even when we differ from him, with a sense of his honesty and straightforwardness. The nine colored illustrations may be characterized as fair.

A Practical Manual of Diseases of the Skin. By George H. Rohé, M.D., assisted by J. Williams Lord, A.B., M.D. No. 13, in the Physicians and Students' Ready Reference Series. Philadelphia and London: The F. A. Davis Co.

As this book is intended only to serve as a handbook for the general practitioner, and does not claim to be anything more than a brief *résumé* of the more important established facts, criticism is, of course, limited to the care with which the matter has been compiled. Unfortunately, the book does not bear the mark of great painstaking. The space is most peculiarly apportioned, nearly one-third of the whole book being devoted to the cutaneous manifestations of syphillis, while almost as much space is given to exfoliative dermatitis as to psoriasis. The statements made do not always coincide with those of a majority of modern specialists. At the end of the book are numerous formulæ, but it is noticed that many of their numbers do not tally with those in the text that refer to them. In a word, the book cannot be regarded as a valuable addition to the "Ready Reference Series."

Higher Medical Culture: Medical Science Based on the Four Vital Properties and Laws of Organic Force. By W. R. Dunham, M.D. Cambridge: Printed for the author. 1892.

The four vital properties of our author are named sensibility, sensation, instinct, and contractility. There seems to be "three departments for the exhibition of applied law of organic force."

Those who desire to acquaint themselves with the results which the author reaches after propounding these propositions had better procure his little book from him and read it. We have no desire to prejudice a possible reader one way or the other, as we are sure we do not understand what is presented in these pages.

On the Simulation of Hysteria by Organic Disease of the Nervous System. By Thomas Buzzard, M.D., F.R.C.P.L., etc. 16mo, pp. iv, 113. London: J. & A. Churchill. 1891.

This little volume is the reprint of a presidential address delivered before the Neurological Society of London. The author first speaks of cases of weakness of the legs often thought to be functional, but due probably to progressive muscular atrophy beginning in the ilio-psoas muscle, and characterized by inability to flex the thigh strongly on the pelvis, or to go up stairs. He next dwells upon the value of absence of knee-jerk as a distinctive feature of organic disease, and of the absence or diminution of the plantar reflex as an indication of hysteria, provided there be no distinctive symptoms, such as loss of knee-jerk, atrophy, degenerative reaction or spasticity. More than half the book is devoted to cases of atypical multiple sclerosis, which is very often mistaken for hysteria. Most hysterical symptoms may be due to multiple sclerosis, and temporary paralyses, shifting from one limb to another, are more probably due to sclerosis than to hysteria. In sclerosis, the plantar reflex is apt to be retained, the knee-jerks may be exaggerated, squint or optic atrophy may occur, and if intention tremor develop the diagnosis may become clear. "The figure of Hysteria shrinks in proportion as the various forms of organic disease acquire greater solidity and sharper definition." The author's style is clear and agreeable, the mechanical execution admirable, and no one can regret the half-hour spent in its perusal.

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THE PLACE OF DYSPEPSIA IN GENERAL NOSOLOGY.

One of the essayists at the recent meeting of the American Medical Association thinks that "the time has now come for discarding the term dyspepsia altogether as a pathological entity, and of relegating it to the limbo of broad symptom-groups occupied by such terms as heart-disease, paralysis and deafness."[1]

What to do with dyspepsia has long been the puzzle with writers on both special and general pathology, and we see the subject disposed of variously, according to prevalent doctrines. To some authorities, the term is only an expression of material lesions of the stomach, to others, it is from first to last a neurosis. From Broussais down to the present time, multitudes have regarded dyspepsia as a manifestation of chronic or catarrhal gastritis. Thus Leube, for the most part, treats it in Ziemssen's Cyclopedia, and in the article on "Disorders of the Stomach," in Wood's Reference Handbook, the term is not used. Fox, in his "Diseases of the Stomach" has only one form of dyspepsia, the "atonic" (that is, nervous). In 1878, Leube demonstrated the fact that many cases which had previously been grouped under the term gastric catarrh were clearly free from catarrh. The stomachs were to all appearances organically sound. He found derangements of the gastric juice associated with many of the troubles of digestion; the use of the stomach-tube now gave an immense impetus to the study of gastric disorders. Some enthusiastic workers in this line outstripped Leube himself, and came to regard dyspepsia as simply a plus or minus of hydrochloric acid. Germain Sée's work on the dyspepsias (1879–1882) is written from this point of view, and the still more recent and masterly treatise of Hayen and Winter treats of dyspepsia as, in the main, a morbid chemical phenomena. "To constitute a dyspepsia," says Germain Sée, "a chemical disorder is the condition *sine qua non*." The terms *hyperchlorhydria, hypochlorhydria, anachlorhydria* express Sée's principal divisions; these terms almost correspond to the *hyperpepsias* and *hypopepsias* of Hayen and Winter. According to these writers, the chemical alteration is the primordial lesion the nervous troubles and the digestive derangements which follow are only secondary effects.

There is already vigorous reaction against this too exclusive way of regarding the subject; neurasthenia is coming to the front as the primordial lesion, the chemical and functional derangements being effects. and this is especially the standpoint of the French school of medicine under the leadership of Charcot, Debove, Bouchard and others. It is agreed that the term dyspepsia stands for a definite clinical syndrome that demands separate and independent consideration in treatises on medicine; and the authors of the new *Traité de Médecine* seem, in handling this subject, to have attained the proper mean, assigning to the nervous and constitutional element the primordial rôle, while making due account both of morbid states of the mucous and muscular coats and of chemical derangements of the gastric juice. Recognizing the fact that the same causes may give rise to all the different forms of dyspepsia, and that in the present state of science the classification that commends itself must be pathological and clinical rather than etiological, they divide the dyspepsias as follows, into:

(1) Simple neuro-motor dyspepsia without hyperacidity, organic or hydrochloric.

(2) Hyperchlorhydria.

(3) Hypochlorhydria with stagnation of the contents of the stomach and often hyperacidity.

Dilatation of the stomach, concerning which so much has been written of late years, and which has been the subject of a very ingenious theory by Glenard, is reserved for separate consideration. It is a common resultant of a number of etiologic factors; stenosis of the pylorus from any cause, fatty degeneration or atrophy of the muscular coats, etc. Under the name of dilatation of the stomach, Bouchard has described a morbid state in which the gastrectasis is the primordial fact, and in which the sensory and dyspeptic phenomena are more or less pronounced. He attributes to toxæmia from absorption of poisons (toxines) produced in the stomach the principal rôle in the genesis of the accidents observed in connection with gastrectasia. Just here, it is proper to say that modern pathologists are assigning more and more importance to the part which these toxines of gastric origin play in the symptomatology, direct and remote, of all the dyspepsias, and what a few years ago was ascribed to lithæmia more properly comes under the head of toxæmia, as is well shown by Dr. C. G. Stockton in his address last month before the Association of American Physicians, at Washington.

(1) Dyspepsia with neuro-motor predominance includes nearly one-half of the cases of dyspepsia. Persons belonging to this category are affected with *nervöse dyspepsie* (nervous dyspepsia), as Leube understood it. The symptoms are those of discomfort and pain, with

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[1] Dr. Harold N. Meyer: On Catarrhal Gastritis.

weight in the epigastrium after eating. The stomach and abdomen are flatulently distended, and there are eructations. Among the toxæmic symptoms are headache, disinclination for study or exercise, malaise, vertigo, insomnia. Constipation and hæmorrhoids are seldom absent; the dyspepsia is both intestinal and gastric. The appetite may remain good, and there may be no emaciation. In a word, these patients present to a greater or less extent the symptoms peculiar to neurasthenia. A neuropathic temperament is the foundation of their ailments.

Repeated examination by the Debove tube reveal neither organic hyperacidity nor hyperchlorhydria. There may even be hydrochloric deficiency, but this is of little importance if the muscular mechanism of the stomach is all right — if *there is no stagnation and resulting-exaggerated acid fermentation.* The work of the stomach may be a minimum quantity, almost *nil*, without the general condition suffering much in consequence, as has been shown by many experimental and clinical facts. " Robust healthy persons, not at all dyspeptical may present a marked degree of hyperchlorhydria." Dogs have had their stomachs extirpated, and have got well and remained in health, with their œsophagus opening into the duodenum; and Van Noorden, by his experiments in the " dosage " of urea of the ingesta and egesta, has found that albuminoid substances are as well utilized in dyspeptics with insufficient gastric digestion as in healthy individuals.[2] Facts of this kind are not lacking to show that neither an excess nor a deficiency of HCl in the gastric juice is of sufficient importance to characterize a clinical form of dyspepsia.

(2) The second division of the dyspepsias, "hyperchlorhydria," indicates a constant relation between the dyspeptic manifestations and an excess of HCl. " The vice of secretion — the acid hypersecretion — seems to be often the expression of a state of general neurosis with predominant gastric determination." In other words, the hyperchlorhydria and the troubles of secretory and motor innervation all take their rise in the same neuropathic state.

Hyperchlorhydria presents itself under numerous clinical types, all of which are characterized by pain which is often most marked when the stomach is empty. The crises of pain resemble those of migraine or tabes, and often suggest the possibility of a real material alteration in the cerebro-spinal axis. Generally the pain comes on near the close of a meal, is in the pit of the stomach and takes on an increasing intensity.

This pain is relieved by the ingestion of a little liquid, sometimes of food, and especially of an alkaline liquid. In some patients it comes on regularly at one or two o'clock in the morning. Sensation of burning or rending, radiating to the back, are complained of. These pains when very intense are followed by vomiting. The dilution of the gastric juice, its saturation by alkalies, its mechanical expulsion, are conditions which suppress the cause of the pain by suppressing the action on the mucous membrane of a gastric juice charged with HCl (Mathieu).

These dyspeptics endure fasting poorly, eat much, and do better on a diet largely animalized. They are nervous, irritable, easily fatigued, and are tormented by insomnia. A multitude of hypochondriacs belong to this class. They, too, have abdominal distention, eructations, and constipation. When the gastric juice, siphoned from the stomach, is examined, it is found to be inordinately acid from HCl (two to three per thousand), and the chyme shows albuminoids to be much better digested than starches. With the filtered gastric juice, artificial digestions rich in peptones can be rapidly obtained.

Hyperchlorhydria was described for the first time by Reichmann in 1882 and 1884.

(3) The third type of dyspepsia is " hypochlorhydria, with organic hyperacidity and stasis." Here, hydrochloric acid secretion is deficient, but there is excess of organic acids from abnormal fermentations taking place in the stomach. There is more or less dilatation from atony and relaxation of the muscular walls; foods and liquids stagnate in the stomach and ferment, giving rise to acid eructations, pyrosis and pain. Vomiting is also a frequent symptom. Undigested food long remains in the stomach. If the contents of that organ be siphoned off in the morning after fasting, quite a quantity of sour rancid liquid will be obtained; there will be from a pint to three pints with débris of the last meal. Gastritis is apt to supervene sooner or later in these cases.

The writers of the new *Traité de Médecine*, it will be seen, consider all the dyspesias, except such as clearly follow gastritis, cancer, round ulcer, or are secondary to heart disease, liver disease, etc., as nervous in their origin. They refer to the fact that we often find simple neuro-motor dyspepsia with or without excess or deficiency of HCl in persons of neuropathic or arthritic family (arthritic may be regarded as almost the equivalent of neuropathic). In these patients, we see the neuropathic manifestations precede the dyspeptic. Moreover, the general symptoms: Headache, vertigo, dizziness, erratic pains, etc., are such as belong to the neurasthenic series. A similar dyspeptic tendency is noticed in candidates for gout, diabetes, in the migrainous, in exophthalmic goitre and in hysteria. Nervous dyspepsia has often been known to arise in predisposed persons under the influence of strong emotions, disappointments, reverses. Lastly these patients are habitually relieved by a treatment addressed especially to the neuropathic state, as rest, hydropathy, and change of climate.

The principal cause of dyspepsia being as above stated, — as occasional or exciting causes, may be mentioned, mental emotions, excesses in eating or drinking, the abuse of highly seasoned meats, indigestible foods generally, and of alcoholic liquors. In some cases, nervous dyspepsia has been known to follow influenza, and in not a few it has succeeded an attack of typhoid fever.

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[2] Ztschr. f. Klin Med., 1890.

MEDICAL NOTES.

The late Dr. D. Hayes Agnew left an estate of about $250,000. He bequeaths to the University of Pennsylvania, $50,000, his work on surgery, his library and anatomical collections.

Cholera has spread from Persia to the provinces on the south shore of the Caspian Sea, and from these provinces to Russian ports on the west shore. The appearance of the disease at Baku, the centre of the petroleum trade, threatens those southern provinces of Russia, in which the inhabitants are already weakened by famine.

Rotunda Hospital, Dublin. — The governers of the Rotunda Hospital in Dublin, have decided to build an additional hospital building, and have already raised a large part of the necessary funds for the purpose.

Experiments in Snake Poisons. — There has recently been erected, in connection with the Calcutta Zoological Garden, a building for the study of the poisoning of snakes. Specimens of the principal poisonous snakes will be kept.

A Microbe of Beri-Beri. — The *Review Scientifique* of May 28th states that Dr. Leopold, of Montevideo, in cultivations of the blood of animals suffering from beri-beri, has discovered a micrococcus which, after culture and injection into the blood of healthy animals, seem to reproduce the two chief forms of the disease, generalized œdema due to dilatation of the heart, and paralysis.

Succi the Faster. — Succi, the Italian who has made himself prominent both in this country and in Europe, by his fasting, has become insane and has been sent to an asylum in Paris. Two years ago he completed a period of forty days fast in London, and later in New York a fast of forty-five days. He recently attempted another one in London, but broke down before it was accomplished and went to Paris, where he was soon afterwards found to be insane.

BOSTON AND NEW ENGLAND.

The Alumni Association of the Harvard Medical School held its second annual meeting and dinner on Tuesday, June 28th. About 260 members sat down to dinner, at which Dr. J. R. Chadwick presided. Speeches were made by the presiding officers, President Eliot of the University, Dr. Wm. Pepper, Provost of the University of Pennsylvania, Prof. Wm. H. Welch, of the Johns Hopkins University, and Dr. James C. White, President of the Massachusetts Medical Society. An able and interesting report was presented by the committee appointed to visit the medical school. The occasion was very successful from every point, and will be more fully reported in a future number.

Drainage into the Back Bay. — On account of the odors from the Back Bay in Boston at low tide, the Board of Health have taken measures to prevent the houses on the water side of Beacon Street from discharging their house sewers into the bay, as is at present done.

Small-pox in Quincy. — A case of small-pox is reported from Quincy, the patient being a girl sixteen years old, who has recently arrived from Sweden. She was promptly isolated, as were also the other inmates of the house. Every one who was suspected of having been exposed to the disease was vaccinated.

A Rhode Island Law for the Prevention of Blindness. — A law has recently been passed in Rhode Island similar to those in New York and Maine, part of which is as follows: "Should any midwife or nurse, or person acting as nurse, having charge of an infant in this State, notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse, or person acting as nurse, so having charge of such infant, to report the fact in writing within six hours to the health officer, or some qualified practitioner of medicine, of the city or town in which the parents of the infant reside."

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Miscellany.

THE THERAPEUTIC VALUE OF SUPPURATION.

Vochier having observed improvement in cases of puerperal septicæmia, taking place coincidently with the appearance of a focus of suppuration in some part of the body, suggested that in certain cases the establishment of suppuration by the subcutaneous injection of turpentine might be of therapeutic value. Later a case of pneumonia was reported by Lepine, in which this method appeared to have been of great benefit. A case has recently been reported by Gingeot.[1] A man twenty-nine years of age, of alcoholic history, suffering from acute pneumonia, received on the ninth day subcutaneous injections of turpentine into the four limbs. At the time his condition was very critical. The injections were very painful and were followed by extensive œdematous patches, and later by suppuration. Within two hours of the first injection the temperature fell two degrees, and this was followed by subsequent improvement. The patient ultimately recovered. A similar case is reported by Raoul in which a patient, apparently moribund on the sixth day, was apparently cured by similar treatment. The explanation of the improvement given by Gingeot is that the production of artificial abscesses, by setting up leucocytosis, brings up reinforcements of phagocytes, as it were, to the assistance of the original defenders.

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THE LEGAL REQUIREMENT OF PROFESSIONAL SECRECY.

The Supreme Court of Michigan has confirmed a decision bearing upon the conduct of a physician who introduced an unprofessional, unmarried man as his assistant in a case of confinement, the patient naturally supposing that the assistant was a physician.[2] The defence of the doctor was that he was sick and very much fatigued, and therefore asked this friend to accompany him. No objection was made by the patient or her husband, and it is agreed that he behaved himself in a perfectly proper and becoming manner. The plaintiff having found out later, not only that he was not a medical man but that he was young and unmarried, brought a suit to recover damages sustained from shame and mortification upon discovering the true character of the defendant. The court held that the plaintiff and her husband had a right to presume that a practising physician would not, upon an occasion of that character, take with him and introduce into the house a young man in no way, either by education or otherwise, connected with the medical profession. This person could hear, if not see, all that was said and done. The fact that at the time the plaintiff consented to his presence supposing him to be a physician does not preclude her from maintaining an action and recovering substantial damages upon afterwards ascertaining his true character.

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[1] Sem. med., May 18.

[2] International Medical Magazine, June.

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EFFECTS OF AN OVERDOSE OF CODEINE.

METTENHEIMER reports a case showing the effects of an overdose of codeine.[1] An elderly lady consulted him for a slight catarrhal, non-febrile affection which, however, gave rise to a troublesome, spasmodic form of cough. For this he prescribed 0.03 gramme (about half a grain) of phosphate of codeine, in the form of a pill, to be taken every three hours. The patient, however, swallowed four of these pills, or about a grain and a half of the codeine salt, at once. Shortly afterwards she vomited twice and suffered from abdominal pain. There was, too, suppression of urine, and she felt very ill, being sleepy, but unable to go to sleep. The next day she was still drowsy and had no appetite, but there was no return of the sickness. She was then seen by Dr. Mettenheimer, who found the pupils contracted, the pulse hard and quick, and the respiration accelerated. The cough had entirely disappeared. The contracted state of the pupils, the loss of appetite, and the abdominal pain persisted for several days. No urine was passed until thirty-six hours after the pills were taken. On the third day the drowsiness had passed away. The cough did not return for a week, and when it did it was comparatively slight. This case seems to show that codeine in large doses has a very similar effect to opium, and that it may prove a most efficient remedy for some kinds of cough. As the tongue remained clean it would appear that the vomiting was due to cerebral, rather than to gastric, irritation.

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PREPARATION FOR THE STUDY OF MEDICINE.

DR. E. L. HOLMES,[2] in his doctorate address at the Rush Medical College, takes up the question of the study of Latin and Greek in connection with the study of medicine. The address was intended for those who cannot pursue a collegiate course preparatory to their medical studies, and who consequently may enter a medical school with absolutely no knowledge of either Latin or Greek. So many medical technical terms are directly taken from one or the other of these languages that a certain amount of knowledge of them is almost necessary. Without having studied either language when he receives his degree of Doctor of Medicine, a student has learned a large number of Greek and Latin words with their English technical meanings. The English language contains so many words from one or the other of these languages that the study of English alone involves the unconscious study of a certain amount of Greek and Latin. The author proposes by the use of very simple grammars to take advantage of this for teaching as much as is required for medical reading. A rudimentary Latin and also a Greek grammar should be constructed for the primary object of teaching English, secondary of teaching Latin and Greek. In connection with these there should be a reader containing extracts from classical prose or poetry, almost every word of which should be a good English word. By learning the meaning of the roots and prefixes and suffixes of those words which are used both in literary English and in medicine, he would be able to appreciate and to find out for himself the derivation of most of the compound words which he meets. After this study of English, Latin and Greek, the student can understand without difficulty the technical terms of every science in every modern language. He has a systematic knowledge of sufficient Latin and Greek to enable him to continue alone his readings of classics, if he has the time and taste so to do. The author considers there is great need of such elementary text-books for the use of professional students.

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THE CURE OF INFECTIVE DISEASES.

G. AND F. KLEMPERER, in the *Berliner Klinische Wochenschrift*, May 2d, treat of this subject in regard to immunity induced subsequently to infection.[1] The value of the immunity depends upon its degree and the rapidity with which it can be established. The most rapid method is by blood serum, as discovered by Behring and Kitasato. In animals the cure of several diseases has already been thus effected.

Every well-marked and acquired immunity is transferable to other animals. The serum treatment is a specific one. The authors have been able to establish immunity in the same rabbit against two separate infections, namely, that of the pneumococcus and that of mouse septicæmia. The difficulty of obtaining the serum must constitute an obstacle to hæmatotherapy, and hence a simpler method of establishing immunity is sought for. This consists in the introduction of an attenuated culture into the veins. By this process the protective substances have still to develop, whereas they are already present in the serum. Thus the immunity conferred by the former method occurs only after a few days, but that by the latter in a few hours. Previous failure by the first method has been due to the feebleness of the immunity induced. The degree of the immunity depends on the amount of the culture introduced. The difficulty lies in concentrating the latter. This the authors have effected by means of the air-pump down to one-tenth of its former volume, and without the application of too great heat. Against the pneumococcus infection some degree of the immunity is present on the following day. In a very virulent pneumococcus infection in rabbits this method does not succeed, but a less virulent infection can be easily cured. Thus, in addition to the serum treatment, a slowly-developing infection in animals can be cured by an immunity subsequently induced by the introduction of an attenuated culture into the veins.

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[1] Lancet, June 18th.

[2] Journal American Medical Association, June 4th.

[1] British Medical Journal, May 28th.

The advantage of this method consists in the readiness with which the remedy may be prepared, the disadvantage in its uselessness against sudden and rapidly fatal infection. In man the majority of the infective diseases develop slowly, so that they may permit of this method of treatment.

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THERAPEUTIC NOTES.

Resorcin in Gastric Ulcers. — Pope[1] uses resorcin in a dose of five grains three times a day in cases of gastric ulcer. It is both antiseptic, analgesic and hæmostatic. Its analgesic property being the most valuable, enabling the stomach to tolerate food, He has also given it with advantage in gastric cancer.

Treatment of Poisoning by Cocaine. — Eloy[2] gives the following directions for the treatment of acute poisoning by cocaine. The patient is placed in a horizontal position in order to prevent syncope, and his face bathed with cold water. If convulsions come on cold should be applied. If asphyxia is present flagellation, massage and artificial respiration are resorted to, and if the respiration depends upon the tetanic contraction of the respiratory muscles inhalations of chloroform are employed. For the intense pallor it is well to give inhalations of nitrite of amyl. Should these means prove insufficient, it may be well to administer strong coffee or caffeine, or if swallowing is impossible, hypodermic injections of ether. The entire object of the treatment is to moderate the reflex excitability of the nervous system, to sustain the heart, and to re-establish the equilibrium of the circulation.

Permanganate of Potassium in the Treatment of Diphtheria. — Bowman[3] reports several cases of diphtheria in which most excellent results were obtained by the use of a solution of permanganate of potash of the strength of three grains to the ounce. Three or four applications an hour were made directly to the membrane with a large camel's-hair brush for eight or twelve hours. After this once every two to six hours is sufficient. In some cases a spray is a better method of application.

Methyl-Violet in Malignant Tumors. — Nanu has obtained very good results[4] in ten out of twenty-five cases of malignant tumors by injecting methyl-violet according to the system of Von Moorhof. The diagnoses were confirmed by microscopic examination. On the other hand, Torrie after a trial of this method in several cases comes to the conclusion that it is never of any benefit and may be harmful.

Chloride of Zinc Injections in Ununited Fractures. — Menard[4] reports a case in which an oblique compound fracture of both bones of the leg had failed to unite at the end of five months. Remembering Lannelongue's experiment on the formation of bone in rabbits as the result of injections of chloride of zinc into the periostum, Menard then injected 1.25 g. of a one in ten solution of chloride of zinc into the outer and posterior surfaces of the tibia and into the space between the fragments. The injection caused a good deal of pain, but after immobilization of the limb for a fortnight the swelling of the soft parts had completely disappeared, and the seat of the fracture was surrounded with firm callus. A month after the injection consolidation was complete and the patient was able to walk.

A New Trephine. — Tauber[5] describes a new form of trephine, by means of which a disc of bone in the shape of a truncated cone can be removed from the skull. The advantage claimed for this shaped button is that on replacing it the level of the skull is preserved, that is, the button does not tend to fall in, also its margin is in close contact with the hole from which it was removed. The author believes that with this instrument, a surgeon may safely remove a series of discs and thus expose a large extent of the surface of the brain. The openings which are not united may be immediately filled up with every confidence of complete closure by speedy osseous reunion.

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[1] Provincial Medical Journal, May 2d.
[2] Rev. de Clin. et de Thérap., December 30th.
[3] Therap. Gaz.
[4] Rev. de Chir., May 10th.
[5] Centralbl. f. Chir., No. 20, 1892.

RECORD OF MORTALITY

For the Week ending Saturday, June 18, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,515,301	858	410	23.04	16.56	7.68	3.72	3.60
Chicago . . .	1,099,850	500	238	12.00	9.60	.04	.40	1.40
Philadelphia .	1,046,964	430	165	17.48	8.51	5.52	6.90	1.61
Brooklyn . .	806,343	366	166	16.20	12.67	5.13	1.08	.54
St. Louis . . .	451,770	174	64	16.80	5.60	11.76	1.12	2.24
Boston . . .	448,477	199	65	13.50	13.50	2.00	6.00	2.50
Baltimore . .	434,439	—	—	—	—	—	—	—
Cleveland . .	262,000	87	31	21.42	7.14	5.95	2.38	1.19
Pittsburg . .	249,000	—	—	—	—	—	—	—
Milwaukee . .	240,000	80	44	15.00	6.25	2.50	11.25	—
Washington .	230,392	137	64	24.09	6.57	16.06	.73	—
Nashville . .	76,168	32	11	25.00	—	12.50	6.25	—
Charleston . .	65,165	34	14	14.70	—	11.76	—	—
Portland . . .	36,425	14	6	7.14	14.28	—	7.14	—
Worcester . .	84,655	30	10	6.66	6.66	—	3.33	—
Lowell . . .	77,696	39	17	20.48	5.12	20.48	—	—
Fall River . .	74,398	32	16	21.91	3.13	9.39	3.13	3.13
Cambridge . .	70,028	30	11	13.33	6.66	6.66	6.66	—
Lynn	55,727	11	2	14.28	—	7.14	—	—
Lawrence . .	44,654	18	11	22.22	11.11	16.66	5.55	—
Springfield . .	44,179	14	7	14.28	7.14	7.14	—	—
New Bedford .	40,733	20	10	8.00	—	6.00	—	—
Holyoke . . .	35,637	—	—	—	—	—	—	—
Salem	30,801	10	3	2.00	—	1.00	—	1.00
Haverhill . .	27,412	9	2	—	—	—	—	—
Brockton . .	27,294	4	2	—	50.00	—	—	—
Taunton . . .	25,445	10	1	20.00	—	—	10.00	—
Newton . . .	24,376	6	0	—	33.33	—	—	—
Malden . . .	23,031	5	2	—	—	—	—	—
Fitchburg . .	22,037	11	2	9.09	—	—	9.09	—
Waltham . .	18,707	6	0	—	33.33	—	—	—
Pittsfield . .	17,281	3	3	33.33	—	—	—	33.33
Quincy . . .	16,723	1	0	—	—	—	—	—
Northampton .	14,990	6	1	—	33.33	—	—	—
Newburyport .	13,947	3	1	—	—	—	—	—
Brookline . .	12,103	11	4	9.09	—	—	—	—
Medford . . .	11,079	7	0	—	14.28	—	—	—
Everett . . .	11,068	2	0	—	—	—	—	—
Hyde Park . .	10,193	3	0	—	—	—	—	—
Peabody . . .	10,158	2	0	—	—	—	—	—

Deaths reported 3,219: under five years of age 1,383; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 563, acute lung diseases 246, consumption 319, diarrhœal diseases 194, diphtheria and croup 132, measles 60, scarlet fever 59, typhoid fever 43, cerebro-spinal meningitis 25, whooping-cough 19, erysipelas 14, malarial fever 12, small-pox 5.

From measles New York 37, Brooklyn 12, Philadelphia 3, Chicago and Boston 2 each, Cleveland, Fall River and Springfield 1 each. From typhoid fever Chicago 14, Cleveland 8, New York and Philadelphia 5 each, Washington 4, Brooklyn and St. Louis 2 each, Boston, Worcester and Taunton 1 each. From cerebro-spinal meningitis Chicago 8, New York 6, Washington 4, Brooklyn 3, Philadelphia, St. Louis, Lynn and Brookline 1 each. From whooping-cough Philadelphia 5, New York and Chicago 4 each, Washington 2, Brooklyn, Boston, Nashville and Fall River 1 each. From erysipelas New York 7, Chicago 3, Philadelphia, Brooklyn, Boston and Cleveland 1 each. From malarial fever Brooklyn 6, New York 4, Nashville and Charleston 1 each. From small-pox New York 4, New Bedford 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending June 11th, the death-rate was 17.9. Deaths reported 3,490: acute diseases of the respiratory organs (London) 208, measles 205, whooping-cough 85, diarrhœa 63, diphtheria 51, scarlet fever 42, fever 19, small-pox (Newcastle) 1.

The death-rates ranged from 11.8 in Croydon to 26.5 in Swansea; Birmingham 19.8, Bradford 16.9, Hull 13.2, Leeds 15.1, Leicester 14.2, Liverpool 21.4, London 17.5, Manchester 23.7, Newcastle-on-Tyne 20.6, Nottingham 12.8, Sheffield 16.5, Sunderland 18.1.

METEOROLOGICAL RECORD,

For the week ending June 18, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: –

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...12	29.87	74	90	58	60	54	57	W.	W.	22	14	C.	C.	
M..13	29.89	83	94	72	66	69	67	W.	S.W.	9	12	C.	C.	
T..14	29.80	85	96	74	61	70	66	W.	W.	10	13	C.	R.	.01
W.15	30.05	69	74	64	51	58	54	N.W.	S.	14	12	C.	C.	.11
T..16	30.09	69	80	58	58	77	68	S.	W.	11	24	F.	C.	
F..17	30.09	76	92	60	70	87	78	S.W.	N.E.	11	12	C.	O.	.73
S..18	30.30	61	64	58	73	89	81	N.E.	E.	12	10	O.	O.	
☞	30.01	74	83	63	62	72	67			13	14			1.21

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 18, 1892, TO JUNE 24, 1892.

Leave of absence for one month to take effect on or about July 1, 1892, is granted CAPTAIN WILLIAM BANISTER, assistant surgeon, U. S. A.

MAJOR JOHN S. BILLINGS, surgeon, U. S. A., granted leave of absence for one month and fourteen days, with permission to go beyond sea.

RECENT DEATHS.

RICHARD SPRAGUE, M.D., M.M.S.S., died at the Massachusetts General Hospital, June 28th, aged thirty-two years. On Friday last he was thrown from an open electric car while attempting to get on, and received a fracture of the base of the skull. Dr. Sprague graduated from Harvard College in the class of 1881, and from the Medical School in 1887. He was surgical house-officer in the Massachusetts General Hospital, 1887–88.

SIR WILLIAM AITKEN, professor of pathology in the Army Medical School at Wetley, died in London, June 27. He was the author of several works, and was prominent in the introduction of the clinical thermometer.

BOOKS AND PAMPHLETS RECEIVED.

An American Leper. By D. W. Montgomery, M.D. Reprint. 1892.

Expert Witnesses. By J. T. Eskridge, M.D. Denver, Col Reprint. 1892.

Proceedings of the Philadelphia County Medical Society, Session of 1891.

Clinical Contributions to Brain Surgery. By John B. Roberts, M.D , Philadelphia. Reprint. 1891.

What to do in Case of Accident. By B. Merrill Ricketts, Ph.B., M.D. Cincinnati: James Barclay. 1892.

The Effect of Fluids on the Strength of Catgut. By D. Braden Kyle, M.D., Philadelphia. Reprint. 1892.

A Series of Fifty Consecutive Operations for Cataract. By Robert L. Randolph, M.D , Baltimore. Reprint. 1892.

To What Extent is the Diagnosis of Pregnancy Possible in the Early Months? By Charles Jewett, A.M., M.D., Brooklyn, N. Y. Reprint. 1892.

Diseases of the Nervous System. By J. A. Omerod, M.D., Oxon., F.R.C.P., London. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1892.

Materialism and Modern Physiology of the Nervous System. By William H. Thompson, M.D., LL.D. New York: G. P. Putnam's Sons. 1892.

A Case of Associated Streptococcus Infection of the Vermiform Appendix and Fallopian Tube. By Hunter Robb, M.D., Baltimore. Reprint. 1892.

How to Feel the Pulse and What to Feel in it; Practical hints for beginners. By William Ewart, M.D., F.R.C.P. New York: William Wood & Co. 1892.

Arsenical Poisoning, by means of Wall Papers, Paints and Other Articles in Domestic Use. By Henry Povall, M.D., Mount Morris, N. Y. 1892.

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Original Articles.

DYSENTERY.[1]

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In this paper we shall attempt to give a general review of those anatomical lesions of the large intestine which are usually grouped together under the name dysentery. The word dysentery is simply a clinical expression, descriptive of diarrhœa accompanied with pain and tenesmus. It was afterwards found that when pain and tenesmus were present in an intestinal flux, the colon or rectum, or both, were generally the seat of disease, and gradually the word became used in an anatomical sense to express a pathological lesion. Not only do we have various pathological conditions included under this term, but we may have extensive lesions of the large intestine without the clinical symptoms of which the word is expressive. Even in that form of dysentery which from its etiology, the character of its lesions, its symptoms and course, we are justified in regarding as a definite disease due to a definite cause, pain and tenesmus do not form a marked feature in the symptoms.

Our study of the disease is based on 34 cases which have been found in 320 autopsies at the Johns Hopkins Hospital; 305 of these autopsies were made on patients from the hospital, the others were made on cases outside.

When we study the lesions of dysentery from an anatomical point of view, we can distinguish various forms, which though they may be more or less associated with one another, present broad and striking points of difference. We have divided them into the simple or catarrhal, the diphtheritic, and the amœbic. The last is distinguished from the others, not only by the anatomical differences in the lesions, but also by the broader difference of a definite etiology.

Diphtheritic dysentery, as the name implies, is characterized by the presence of a membrane on the surface of the mucous membrane due to a combination of fibrinous exudation and necrosis. It may involve not only the large, but the small intestine as well. It begins with the appearance of small, opaque, whitish-gray masses on the surface of a hyperæmic mucous membrane. These masses cling closely to the surface; they cannot be washed off or removed without the production of a loss of substance. The more elevated portions of the surface formed by the longitudinal muscular bands and the cross elevations produced by the circular muscular fibres, are the portions most affected. The depressed areas frequently appear as irregular fields of intact mucous membrane in strong contrast to the diphtheritic elevations. These small patches may coalesce, the whole surface may become affected, and the intestine be converted into a dense, rigid tube. In such cases the membrane is usually broken up into small areas, more or less regular in form, by longitudinal and transverse fissures. In other cases there appears to be but little tendency for the areas to coalesce, and the whole surface is thickly covered with small opaque areas, giving an appearance which has been aptly compared to that produced by scattering bran over the surface. The surface is not usually equally affected, and in the same intestine we may find every change from a few scattered spots to a more or less continuous membrane. The process is usually most intense at the bends of the intestine. In the most acute cases the entire intestine is intensely injected and swollen. In other cases, there may be no perceptible change in the mucous membrane outside of the diphtheritic areas, and even here the injection may reach only a slight degree.

Sections through the membrane show that it is composed of dense masses of fibrin, necrotic cells, and nuclear detritus. This extends a variable distance into the mucous membrane, or even in some cases into the submucosa. At the bottom, it is frequently more or less marked off from the healthy tissue by a line of pus-cells. We can frequently recognize, in the necrotic material, the remains of glands. The nuclei of the cells do not stain, and the cells themselves are converted into dense refractive masses. The nuclei are broken up, and form the brightly-stained points found in and at the edge of the membrane. Sometimes the membrane is not so sharply limited, and the fibrin extends more or less into the surrounding tissue. The surrounding mucous membrane is injected, and variable numbers of pus-cells are found between the glands. In the submucous tissue there is intense injection and dilatation of the blood-vessels, which usually are surrounded by a zone of small cell infiltration. In some cases there is an extensive formation of fibrin in the submucous tissue not connected with the membrane on the surface. The fibrin is much more diffuse and has the same fibrillar arrangement as the connective tissue, whereas that on the surface forms a dense reticulum.

Accompanying this process, there may be more or less extensive ulceration. The diphtheritic membrane is separated from the surrounding tissue by suppuration, and is cast off, leaving irregular ulcers. When recent they are shallow, and only extend to the area of necrosis. The ulcers may then heal, or the necrosis and fibrinous exudation may extend in the bases of the ulcers. Although the ulceration in diphtheritic dysentery is not usually a prominent feature, it may be so extensive that only small islands of mucous membrane remain. The ulcers are usually shallow and not undermined. The irregularity in the form of the ulcers, especially when they are recent, is a striking feature. Frequently the ulcers appear as fissures, or fissures may radiate from a central ulcer. In very severe and chronic cases the entire wall of the intestine is thickened and contracted. The muscular coat is hypertrophied, and the submucosa in places converted into a dense, hard, cicatricial-like tissue of a slaty color. Even from the peritoneal side we can recognize the process, for the intestine has a dark, slaty color which does not depend upon change in the mucous membrane, but in the deeper parts. In the more acute case the inflammation may extend to the peritoneum as in Case 34, in which there was a fibrinous exudation on the peritoneum, immediately over the portion of the intestine most affected. There is little or no change in the follicles to the naked eye. On microscopic examination they are almost always slightly enlarged, and we may have, along with the diphtheritic lesions, very small follicular ulcers, confined to the surface of the enlarged follicles. This was the form of dysentery found in eleven of our thirty-four cases. It may appear as an independent affection or associated with a number of other diseases. In the eleven cases it was associated with the following conditions: chronic nephritis, 4; acute nephritis, 1; bronchitis and bronchia-pneumonia, 1; amyloid degeneration, 1; cirrhosis of liver, 1; peritonitis, 1; septicæmia, 1; acute diphtheritic gastritis and enteritis, 1.

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[1] Read before the Association of American Physicians, at Washington, D. C., May 25, 1892.

The descriptions of the lesions in most of the acute epidemics of dysentery conform to this type.

In the epidemic of dysentery in Berne, described by Vogt, most of the cases were diphtheritic. One of the earliest descriptions of it is that given by Cheyne and Osborn in the dysentery prevalent in Ireland in the beginning of this century. It has gradually become to be regarded as the type of dysentery in general. Rokitansky speaks of a necrotic inflammation of the mucous membrane of the uterus as a dysentery of the uterus. It is apparently due to a number of causes. It may be found in poisoning by corrosive sublimate and the mineral acids. Its frequent association with Bright's disease has been supposed to be due to the presence of carbonate of ammonia, which is formed in the intestine, from urea. It is found in a number of infectious diseases, in puerperal fever, in scarlet fever, in small pox, and in septicæmia. Secondary results do not seem to follow it. In none of our cases was there abscess of the liver. Abscess of the liver seems to be very uncommon in acute dysentery, and does not play any part in the description of epidemics. The slighter forms of diphtheritic dysentery are often an unexpected find at autopsies, and may not be accompanied by any symptoms during life.

We can distinguish from diphtheritic dysentery, catarrhal or simple dysentery. We will have to make this a collective description for those forms which cannot come under the head of diphtheritic or amœbic dysentery. In a catarrhal inflammation of the mucous membrane, according to Virchow, there is increased nutrition of the surface shown in its lighter grades by an increased activity of the secreting cells, and in its higher by suppuration. The suppuration may proceed to ulceration. The name catarrhal is one obviously ill chosen, nor can we recognize an increased functional activity of cells as inflammation.

We can recognize in this a number of conditions and we cannot say that they represent different steps of one and the same process. In certain cases there is a more or less intense hyperæmia of the mucous membrane, which may be general or confined to certain areas; there may be slight punctiform hæmorrhages in the mucous membrane or in the submucosa. The entire mucous membrane may be more or less swollen and the surface have a dull, grayish appearance. It is often covered with mucus in which there are numerous pus-cells. On microscopic examination of the mucous membrane there is more or less loss of the surface epithelium. The glands are frequently distorted, and the exfoliation of cells extends for some distance into them. They frequently contain pus-cells. The interglandular tissue is thickened, and contains pus-cells. Although there may be no loss of substance to the naked eye, microscopic examination will frequently show that there is softening and necrosis extending a variable distance into the mucous membrane. The glands in such places are broken down, their confines lost, and they appear as irregular masses of epithelium surrounded by pus-cells. We may have along with these changes, or without them, more or less extensive ulceration. The ulcers in the most acute form are shallow and never undermined They are formed by an extension of the superficial suppuration and softening. They may extend into the submucosa, or even to the muscular coat. One of the most typical examples of this form of ulceration is given in Case 7. The mucous membrane of the entire large intestine in this case was hyperæmic and swollen, but the most marked change was immediately around the ulcers; here there was an infiltration with pus-cells most marked just above the muscularis mucosa, and the glands of Lieberkühn showed various degrees of disorganization. All around the ulcers the purulent infiltration extended, in some places down to the muscular coat. The submucous coat was thickened, the vessels hyperæmic and surrounded by masses of granulation and pus-cells. One of the most marked features was the enormous swelling of the connective-tissue cells in the submucosa. They were converted into large, irregularly shaped masses with a large vesicular nucleus. Scattered among the swollen connective-tissue cells there were numerous masses of fibrin. The vessels showed an increase in number and swelling of the endothelial cells. The walls were thickened, and there were numbers of pus-cells both in the vessels and in the walls.

There is nearly always a general involvement of the lymphatic structures of the intestines. Not only is there thickening from hyperplasia of the lymphatic tissue between the glands of Lieberkühn, but the solitary follicles are swollen. At times this swelling of the follicles may be so slight that it is only perceptible on microscopic examination, in other cases they may be two or three millimetres in diameter. The swollen follicles in some cases are grayish and transparent, in others more opaque and white. The swelling is due to a hyperplasia of the lymphatic tissue. Among the lymphocytes there are usually a number of larger epitheliod cells, and there may be some pus-cells present. To the simple swelling of the follicles another change is soon added. The epithelium over the follicles gives way, and a small ulcer is the result. The follicles then appear as elevated nodules with a central depression. We may have the other lesions in the mucous membrane without this change in the follicles or the follicular change may be so extensive as to mask the others.

This form may become chronic. The ulcers show no tendency to heal. The process of softening and ulceration continues; and we may have large chronic ulcers with hard, indurated bases and thickening of the surrounding tissue. One of the best examples of this is found in Case 32. The ulcers in this case were large and deep, with sharp-cut and slight undermined edges. The base of the ulcer was formed of dense granulation tissue. Most of the ulcers extended only into the submucous coat, but in some the circular muscular coat was also involved and the cellular infiltration extended between the muscular coats to the peritoneum. The most chronic of these ulcers strongly resembled an ordinary ulcer of the leg. In Case 20 there was a single, large, chronic ulcer of the rectum, and the balance of the intestine showed only a moderate degree of inflammation. In this case there was an abscess of the liver.

We found lesions of this type in fifteen of our thirty-four cases, a little less than half. The number is large because it includes all the cases not due to amœbæ and without a fibrinous exudation. It was associated with the following conditions: chronic nephritis 2; carcinoma of stomach 2; phthisis 2; general paralysis of insane 1; abscess of liver 1; peritonitis 1; pneumonia and abscess of lung 1; bronchitis and broncho-pneumonia 1; carcinoma of tongue 1; malarial fever 1; general anæmia 1; fatty degeneration of heart and kidneys 1. Of the fifteen cases, the condition was chronic in but three. In all the others, the lesions were more or less acute. But two cases (30 and 31) of the dysentery of young children were examined. In one of these, Case 30, there was extensive superficial ulceration which was quite similar in character to that in Case 7. The follicles showed an enlargement only on microscopical examination. In the other, while there was a general diffuse inflammation of the mucous membrane with here and there slight softening of the superficial layers, the ulceration was confined to the follicles. In many of the cases the hyperplasia of the lymphoid tissue, both that of the mucous membrane and the follicles plays an important part, and the ulceration is secondary to the affection of the follicles. It is probably caused by a simple necrosis of the mucous membrane over the follicles due to interference with the circulation. The lymph glands in the mesocolon in the acute cases both of this and the diphtheritic form were enlarged, reddened and softened. In two of the cases, in both of which the disease could be regarded as an independent affection, it was followed by peritonitis in one, and abscess of the liver in the other. The character of the abscess was totally different from the more common abscesses following amœbic dysentery.

With regard to the etiology of both the catarrhal and diphtheritic dysentery, we are very much in the dark. In the catarrhal dysentery especially, the lesions are so various that it would not be possible to believe that they could all be due to one distinct cause. In the diphtheritic form, though the lesions may vary greatly in extent, they all have the same essential character. In both forms it is probable that a diminution of the normal resistance of the tissues plays an important part, and this would explain the frequency with which they are met with in the last stages of various diseases.

With regard to the action of bacteria in the production of these forms of dysentery, we know very little. There have been but few observations, and these have not thrown much light on the subject. Ziegler, in his text-book on pathology, has described a small bacillus in cases of epidemic dysentery. It was found both in the exudation and in the mucous membrane. From the constancy of its presence and the relations it bears to the intestinal lesions, he is inclined to regard it as a causative factor. Klebs has also described, in diphtheritic dysentery, a small bacillus, both in the necrotic membranes and in the glands which were separated from the wall. They were also found in the mucous membrane, and in the submucosa, but in very small numbers. He was enabled to make pure cultures of these bacilli. From his description of the bacilli and the cultures, it seems probable that it was the colon bacillus. We have found similar bacilli in cases both of catarrhal and diphtheritic dysentery. In Case 7 they were especially numerous, both in the ulcers and in the adjoining mucous membrane at the bottom of the glands between the separated epithelial cells and the gland wall. In several places they were also found in the adjoining submucosa. That we do not find similar bacilli, or any, in the normal mucous membrane is of no weight. We know that in any lesion of the intestine, as soon as the protecting epithelium is removed and the tissue exposed, the colon bacilli can and do enter the tissue and may be found in the organs. The same might be said of the work of Chantemesse and Widal. They cultivated a small bacillus from the dysenteric stools of five cases of dysentery and from the tissue of the intestine, and from the mesenteric glands and the spleen, of a fatal case. By the injection of these cultures into the intestines of guinea-pigs, they produced a diphtheritic inflammation of the mucous membrane. Similar bacilli were found there and in the tissues. From the description of the bacilli and cultures in all these cases, it is very probable that the bacillus was the colon.

Case 30, a child dying while under the care of Dr. Booker at the Thomas Wilson Sanitarium, has been carefully investigated by Dr. Booker, and makes one of the few cases reported in which there have been careful bacteriological examinations of both the stools during life, and the intestines a short time after death. The child, twenty months old, suffered from diarrhœa for three weeks before death. The stools were often small, consisting of lumps of mucus and blood, and showing under the microscope chiefly blood-corpuscles and pus-cells, with a comparatively small number of bacteria. The pain at stool was not very marked, and was manifested by restlessness and whining, and not by loud cries. Booker obtained, from cultures made at the autopsy from the ilium and colon, numerous colonies of a bacillus which he had not previously met with in the diarrhœal or dysenteric stools of children. This bacillus resembles the bacterium lactis ærogenes in its morphology and growth, but may be distinguished from this by its growth in litmus milk. In the sections of the colon many bacilli were found, which resembled those found in the cultures, but the colon bacilli were most numerous. Both the colon and the other bacillus, which he calls the new bacillus, were found in the cultures made from the lymph-glands of the colon.

There has recently appeared,[2] an article by Ogata in Japan, in which he gives the result of his investigations in an epidemic of dysentery prevailing in one of the provinces of Japan. He examined the bacteria found in the stools of a number of cases, and in tissues taken from one autopsy. Amœbæ were found neither in the stools nor in the ulcers. The short description which he gives makes it possible that the disease may have been amœbic dysentery. The walls of the large intestines were so swollen that the lumen was almost entirely closed. In the mucous membrane of the transverse and descending colon and in the sigmoid flexure of the rectum, there were numerous small ulcers. No large ulcers were found. Like Ziegler and Klebs, he describes the organisms as a small, thin bacillus. The bacilli were found in great numbers in the sections of the ulcers, in the mucous membrane, and in the submucous tissue. They were pathogenic for cats, guinea-pigs, and mice. Subcutaneous injections of them in guinea-pigs produced inflammation of the large intestine with ulceration.

Nothing definite as to the nature of the disease can be told from his description.

In Case 34, which was a typical case of acute diphtheritic dysentery, accompanying nephritis, a careful bacteriological examination was made of the tissues. Numerous organisms were found in the lesions of the mucous membrane, and in the peritoneum over them. In both places the predominant organisms were micrococci, which occurred both as single individuals and in chains. In no case were we able to find organisms which from their relation to the lesions we could regard as definitely the cause of them.

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[2] Centralblatt. f. bacteriologie, bd. xi, No. 9.

The part which the colon bacillus plays in dysentery may be an important one. We know that in nearly all cases in which there is a lesion of the mucous membrane of the intestine, this bacillus is found not only in the seat of the lesion, but in the tissues. The bacillus is pathogenic for a number of the lower animals; and we do not know but that many of the symptoms of dysentery, apart from those directly referable to the alimentary canal, may be due to these bacilli. It does not seem probable that a bacillus like this, which is constantly present in the alimentary canal, could directly produce lesions of the mucous membrane. But it is not improbable that under certain conditions, its virulence could be increased, or at least it might be able to act when the resistance of the tissue has in some way been lowered. The occurrence of dysentery in the last stages of numerous diseases speaks somewhat in favor of this view.

When we turn to the third form of dysentery which we have made, we find a definite disease, characterized by definite anatomical lesions, and having a definite etiological factor. Eight of the thirty-four cases were of this kind. When we examine the lesions of the mucous membrane in all of these cases, we see that although they vary in character in the different cases and even in the same intestine, there are certain features in common. The intestine is always considerably thickened, and although all of the coats are involved in this, the submucous coat is the one most affected. There is not only a general thickening, due to an œdematous condition, but there are sharply circumscribed projecting nodules in which are small cavities filled with viscid gelatinous pus. There is usually a small opening on the surface leading into these cavities. Frequently these small cavities communicated with one another by means of sinuous tracts which are filled with the same material. The elevated nodules vary in size, and are seated in the submucosa. The openings into them are frequently no larger than the head of a pin or so large that the whole cavity is freely exposed. Even in these cases the surrounding mucous membrane is deeply undermined, and there are often found masses in the submucosa, leading to similar ulcers. These undermined ulcers in connection with the formation of cavities and sinuous tracts in the submucosa may be regarded as the form of ulceration most frequently met with. Ulcers of this character are found in the same intestine with other forms of ulcers. They are most numerous in the last portion of the transverse and descending colon. There are other ulcers with somewhat undermined edges, which represent simply excavations in the thickened submucosa without distinct cavity formation in the tissue, and ulcers which represented a later stage of the excavated ulcer. In these the undermined edges have sloughed away, leaving the edges in places smooth, in others only slightly undermined. These had a firm base, which generally extended to the muscular coat.

This submucous coat is always the one most affected. This is infiltrated and œdematous, not only in the neighborhood of the ulcers but in places which are free from ulceration. The ulcers increase in extent by the gradual infiltration and softening of this tissue, with subsequent necrosis of the overlying tissue. The roof which covers in the more or less closed ulcers is broken through, the infiltration and softening continue at the sides, and an ulcer with deeply undermined, ragged edges is formed. The base of these ulcers is clean and is formed by the muscular coat. Although the ulcer advances in the submucosa by the gradual softening and disintegration of the tissue, the muscular coat offers a barrier to this destruction. The upper layers of it become necrotic, and the cellular infiltration extends through it into the inter-muscular connective tissue septa and the subserous coat. Then the same process which took place in the mucous membrane is repeated here. The circular muscular coat is dissected up, the vessels supplying it are destroyed, and it undergoes necrosis. The large sloughs of tissue which are cast off and frequently passed in the stools are composed either of this coat or of the muscularis mucosa. While these processes are taking place, the peritoneal coat becomes enormously thickened, and the same process of destruction is continued in this. There are adhesions formed with the surrounding viscera, and the greatly swollen intestine becomes convoluted and adherent to itself and to the surrounding viscera.

The changes in the mucous membrane are for the most part secondary to those in the submucous coat. The ulcers are formed by a continuous advance of infiltration and softening in the submucous and inter-muscular tissue, with necrosis of the overlying tissue. It is possible to divide the ulcers into four forms: (1) Ulcers characterized by cellular infiltration, softening and cavity formation in the submucosa; these have a small opening in the mucous membrane and often communicate with neighboring ulcers by passages in the submucosa. (2) Ulcers with slight undermining of the edges, representing simple excavations in the thickened submucous tissue. (3) Ulcers with smooth sides and clean bases. (4) Ulcers with extensive adhering sloughs. Although these various forms at first sight seem rather different, the differences merely represent different results of the same process. They are due to the nature of the tissue, to its arrangement in layers separated by loose connective-tissue, the rapidity of the extension of the process, and probably in part to the combined action of other bacteria with the amœbæ.

In all of the cases there was very little change in the mucous membrane at a distance from the ulcers. The covering layer of epithelium was generally absent, and there were slight erosions of the upper part of the glands. Lower down in the mucous membrane, some of the glands were dilated and filled with accumulations of mucus and pus-cells. In all of these dilated glands the epithelial cells were filled with mucus, and there seemed to be an increased amount of mucus in the epithelium generally. There was no infiltration of the mucous membrane with leucocytes except in the immediate vicinity of the small glandular cysts which contained them. In some places, cysts of considerable size with irregular walls were found, which were probably due to confluence of neighboring glands. At the edges of many of the ulcers, especially those with smooth sides and clean bases, there was marked proliferation of the glandular epithelium. This was shown not only in branching and budding of the glands at the edge, but in a regular epithelial investment of the entire edge of the ulcer, which extended down over the

TABLE OF CASES.

Case.	Class.	Associated Diseases.	Anatomical Lesions.	Intestinal Symptoms.
1	Catarrhal.	General endarteritis, chronic nephritis.	Large amount of mucus in the intestine, all of the follicles particularly those in cæcum and ascending colon, enlarged and several of them ruptured on the surface forming small ulcers.	No symptoms.
2	Diphtheritic.	Acute and chronic endocarditis, chronic Bright's.	Mucous membrane of descending colon and upper portion of rectum, over a distance of 15 cm. is intensely congested. There are small hemorrhages in the mucous membrane with adherent fibrinous exudation on the surface. In the cæcum there are small ulcers with irregular edges, the bases of the ulcers covered with pseudo membrane.	No symptoms.
3	Acute Diphtheritic.	Operation for strangulated hernia, peritonitis with streptococci.	All of the follicles in the colon are enlarged. On the surface of many of them especially near the lower end there are small erosions of the mucous membrane. Over these places and over the adjoining mucous membrane there is a slight superficial fibrinous exudation. In places the mucous membrane is covered with these minute losses of substance which have a fibrinous exudation, both over and around them. The follicles are prominent in the lower ilium.	No symptoms.
4	Catarrhal.	Chronic endocarditis, chronic diffuse nephritis.	Mucous membrane of large intestine hyperæmic and contains much mucus. Throughout its entire length, but most marked in the cæcum there are small circumscribed elevations from size just visible to the naked eye up to 1½ mm. in diameter. On section they contain a soft whitish mass. They are of a grayish translucent color and the larger of them are more opaque. The entire cæcum is studded with these small prominences which are here larger and more opaque than elsewhere. In the small intestine the follicles are slightly enlarged.	No symptoms.
5	Diphtheritic, chronic and acute.	Acute peritonitis from streptococcus infection, catarrhal pneumonia, acute Bright's disease.	The large intestine is thickened. There are numerous slaty colored spots in which there are small deep ulcers. On the surface both of mucous membrane and the eroded places there are small patches of whitish fibrinous exudation which is not easily removed. Most of these patches are no larger than the head of a pin.	No intestinal symptoms
6	Amœbic.	Peritonitis, abscess of the liver.	The large intestine is adherent to surrounding tissues by fresh adhesions. It is soft and tears easily on attempting to remove it from the body. Its walls are thickened and it is greatly dilated. The average circumference is 14 cm. There are numerous ulcers and sloughs extending from the cæcum to the anus. In the cæcum there are numerous round elevations which often communicate with the lumen of the bowel by a small opening. Others apparently have no opening. There are also large irregular ulcers filled with grayish looking material on removal of which the muscular coat is seen. In the transverse and descending colon there are large irregular ulcers covered with partially adherent dark sloughs. On removal of these in some places the transverse muscular coat is laid bare and in other places the ulceration extends through this to the longitudinal muscular coat or to the peritoneum. All of the ulcers both the large and small are greatly undermined, and the bases are rough and irregular and show numerous points of ecchymosis. All the coats of the intestine are thickened and œdematous. There are also elevated ridges leading off from the ulcers and connecting adjoining ulcers. On section these ridges are filled with the same transparent gelatinous material as the ulcers contain. The lymph glands in the mesocolon are slightly enlarged and not softened.	Pain in abdomen and diarrhœa.
7	Catarrhal.	Carcinoma of the stomach with metastases.	There are numerous ulcers in the large intestine, the descending colon and rectum being most affected. The ulcers are generally superficial and many of them are confined to the mucous membrane. Others are deeper, but none of them extend to the muscular coat. Some of the ulcers are perfectly round; others are of very irregular shape and produced by the union of adjoining ulcers. The edges are smooth and not undermined. In the middle of some of the ulcers there are small portions of intact mucous membrane. The intestine is not thickened except about some of the largest and deepest ulcers. The mucous membrane generally is pale and soft. There are some portions of it more elevated than the rest which are more opaque and softer.	Diarrhœa, with pain and tenesmus two weeks before death.
8	Amœbic.	Abscess of liver.	The large intestine is contracted. There are numerous ulcers of various shapes and dimensions, which are most numerous in the cæcum and ascending colon. The edges of the ulcers are undermined and the ulcers generally round or oblong in shape. They contain a grayish gelatinous material which can be lifted from the base of the ulcer and from beneath the overhanging edges. In the transverse colon the ulcers are larger. In one place the floor of the ulcer is formed by the longitudinal muscular tissue. Some of the smaller ulcers project above the surface and communicate with one another by fistulous tracts in the submucosa.	Diarrhœa, with pain and tenesmus.
9	Diphtheritic.	Chronic nephritis, membranous enteritis.	The large intestine is dilated, its walls thin. Scattered over the mucous membrane there are numerous serpiginous erosions and shallow ulcerations covered with fibrinous exudation. This condition is most marked in the cæcum and ascending colon. The mucous membrane of the rectum contains shallow ulcers with here and there intense injection of the eroded surface Mucous membrane of small intestine is opaque and slightly yellowish. This appears due to a superimposed layer of material which can be scraped off in slightly adherent masses, but which does not wash away. In this there are numerous irregular fissures which are slightly stained with bile.	Diarrhœa, with pain and tenesmus for past year alternating with periods of constipation.
10	Amœbic.	Peritonitis, abscess of liver and lung.	The colon is free from adhesions except at two places where it is firmly adherent to the stomach. It contains intensely fetid soft brownish contents. There are numerous ulcerations which are most extensive in the cæcum and ascending colon. Here there are large areas entirely devoid of mucous membrane, with a firm base extending to the muscular coat. The mucous membrane adjoining these is hyperæmic and undermined. In the transverse colon there are much deeper ulcers — one penetrating into the fat of the mesocolon, and one passing entirely through to the adherent peritoneum. The entire colon is greatly thickened. The ilium for 12 cm. above the valve contains ulcers of the same character as the colon.	Intermittent diarrhœa, stools yellowish-brown, contain no blood.
11	Catarrhal.	General paralysis of insane.	The large intestine contains numerous hard balls of fæcal matter. The entire surface, but especially the ascending colon, is covered with a firm white layer of mucus, which cannot be washed off but can be pulled in small adherent strips. In the cæcum there is a small polypus the extremity of which is necrotic.	No intestinal symptoms
12	Amœbic.	. . . . . .	There is more or less extensive ulceration throughout the large intestine. It is least marked in the transverse colon, but everywhere else the bowel is riddled with ulcers. The mucous membrane where intact has a grayish-red color deepening to a chocolate brown. There is nowhere any necrosis or fibrinous exudation on the surface. The ulcers are very irregular in shape; they run into one another and are either clean or covered with a thin granular looking pellicle of a grayish color. They often reach the muscular coat, but do not penetrate it. Their edges are greatly undermined. In the transverse colon there are only a few widely separated ulcers, and between these the mucous membrane is healthy. In the cæcum the ulcers are shallower than in the other parts of the intestine. The submucous coat in the vicinity of the ulcers is greatly thickened. In the lower portion of the ilium there is a diphtheritic inflammation.	Irregular diarrhœa.
13	Amœbic.	Abscess of liver and lung.	The large intestine shows numerous ulcers, which are especially marked in the transverse and descending colon. These ulcers are sharply circumscribed and of various shapes with the long axis generally transverse to the intestine. Most of them extend to the muscular coat and in some cases into this. The edges of all are greatly undermined. Several of the ulcers extend through the transverse muscular coat which is dissected up for a short distance around the ulcer.	Acute diarrhœa, with pain and tenesmus.
14	Amœbic.	Peritonitis.	The large intestine is very much thickened. There is also extensive ulceration, the ulcers varying greatly in character and extent. In the lower portion of the descending colon there are small ulcers with undermined edges filled with viscid, transparent pus. In the upper portion of descending colon there are larger ulcers with deeply undermined edges and a clean base extending down to the muscular coat. The undermined edges are filled with gelatinous pus and some of the ulcers are connected with one another by sinuous tracts in the swollen submucosa. In the transverse colon there is a large loss of substance 8 cm. in length. It is partly covered by a large mass of dark brownish necrotic material which is attached to one side of the ulcer. This large slough is composed of the circular muscular coat. The base of the ulcer is principally formed by the thickened peritoneum. At the hepatic flexure and partly covered in by adhesions there is a large opening 10 x 3 cm. The wall of the gut here is formed partly by the adherent ilium and partly by a necrotic slough of the muscular coat which adheres along one edge of the ulcer. In the rectum there are also extensive ulcers covered with sloughs.	Diarrhœa, with pain and tenesmus.
15	Amœbic.	Abscess of liver perforating into duodenum, peritonitis.	There are numerous adhesions about the colon. It is dilated and thickened and contains a large amount of soft yellowish-brown material. In this material there are small white translucent masses which do not mingle with the other contents and can be lifted out entire. The mucous membrane is pale-grayish, œdematous looking and there are numerous ulcers of various size, particularly in the ascending and transverse colon. These ulcers have ragged undermined edges and extend down to and into the muscular coat. Between the ulcers there are numerous elevations on the surface, some of these round, others long and irregular. In most of them there is a small opening on the apex leading into a small cavity filled with viscid gelatinous material. Many of these cavities communicate with one another by fistulous tracts in the submucosa. Some of these tracts are from 2 to 5 cm. long.	Diarrhœa from beginning of illness, soft stools containing blood and necrotic material.

TABLE OF CASES (CONTINUED).

Case.	Class.	Associated Diseases.	Anatomical Lesions.	Intestinal Symptoms.
16	Amœbic.	Abscess of liver and lung.	The entire large intestine is dilated, thickened and covered with numerous ulcers. In the intestine there is a thin brownish material. The ulcers have irregular shapes with wide overhanging edges. The smaller contain viscid translucent material, which can be lifted as a mass from the cavity. Most of the ulcers extend only to the transverse muscular coat. Others pass through this and the base is formed by the thickened peritoneum. The transverse colon is most affected. In this the ulcers occupy large areas with only small masses of mucous membrane separating them. The bases of some of the larger ulcers are imperfectly divided by septa, showing that they were formed by the confluence of several.	Intermittent diarrhœa, soft, brownish stools.
17	Diphtheritic.	Bronchitis and broncho-pneumonia.	The large intestine in several places is doubled or folded on itself and there are adhesions between these and with the surrounding viscera. The mesocolon is thickened and hyperæmic and the glands in this enlarged and reddened. The intestine is firm and thickened. There are extensive ulcerations which are most marked and deepest in the descending colon and rectum. They are generally superficial, only a few extending to the muscular coat. The bases are firm and indurated, partly covered with an adherent fibrinous exudation. The edges are sharp and not undermined. In the lower colon and rectum where the ulceration is most extensive, there are only small islands of intact mucous membrane. In the transverse colon there are several large superficial ulcers with smooth edges. The bases of all of these are hard and covered with a slight adherent fibrinous exudation.	Illness began two w'ks before death, diarrhœa with tenesmus.
18	Diphtheritic.	Pelvic peritonitis, amyloid infiltration.	In the cæcum there are numerous small irregular erosions of the mucous membrane. They are most numerous and extensive in the descending colon and rectum. The edges of the erosions are sharp and not undermined, the bases generally clean but here and there a small amount of fibrinous exudation is seen on the surface. The submucosa beneath and about the ulcers is thickened and infiltrated with pus.	Diarrhœa for past 5 or 6 mos., with pain and tenesmus, stools very frequent, and often contain blood and mucus.
19	Diphtheritic.	Chronic diffuse nephritis.	The large intestine is thickened and surrounded with dense masses of fat. The mucous membrane is absent over almost the entire ascending and transverse colon. Only here and there small areas of intact mucous membrane are seen. In the splenic end of the transverse colon and in the descending colon there are smooth shallow ulcers with indurated margins. Everywhere in and about these ulcers there is a closely adherent diphtheritic deposit.	Eighteen days before death, diarrhœa with some blood in stools.
20	Catarrhal.	Abscess of liver.	The follicles in the lower end of the ileum and in the entire large intestine are enlarged. The mucous membrane of the large intestine is thickened and hyperæmic. In the rectum 6 cm. from the anus there is a round ulcer 14 mm. in diameter. Its edges are smooth and slightly undermined, its base clean and soft.	No diarrhœa.
21	Catarrhal.	Phthisis.	In the lower end of the ileum and in the entire large intestine the follicles are swollen. The mucous membrane of the large intestine hyperæmic, swollen, and there are small erosions generally not involving the entire thickness of the mucous membrane and chiefly on the surfaces of the swollen follicles.	Diarrhœa 4 weeks before death, with some abdominal pain.
22	Catarrhal.	Peritonitis.	The entire large intestine is thickened and somewhat dilated. The entire surface is firm and of a slaty color. In this there are numerous rather superficial losses of substance with firm smooth edges and a slaty indurated base. The mucous membrane has areas of hyperæmia.	Diarrhœa lasting 3 mos. followed by ascites, which began 7 weeks before death.
23	Catarrhal.	Death one month after operation for carcinoma of breast; pneumonia and abscess of lung, acute pleurisy.	The large intestine somewhat dilated and contains soft black masses of fæces. The entire mucous membrane is hyperæmic. In the descending colon there are numerous shallow ulcers. The rectum contains numerous large ulcers with soft, reddened, elevated edges.	Diarrhœa commenced on day of operation, and continued until death.
24	Diphtheritic.	Arterio-sclerosis, diphtheritic gastritis and enteritis.	The mucous membrane of the stomach is reddened in places and presents chiefly along the greater curvature, a thin superficial diphtheritic exudation of a dirty yellowish-white color, adherent to the mucosa and consisting apparently of a superficial necrosis of the mucous membrane. It occupies several patches 2 to 3 cm. in length. In the small intestine there is an intense diphtheritic enteritis involving the entire length of the jejunum and ileum and most intense in the lower end of the ileum. The mucous membrane is coated with a superficial dirty brownish, firm necrotic layer. All of the coats of the intestine, are of a dark red color and soft consistency. In the colon the process is more intense than in the ileum and more in patches. The mucous membrane is coated with a thick opaque yellowish diphtheritic layer and in many places has a rough or rugous surface caused by elevated and depressed parts. There are no actual ulcerations. The diphtheritic process extends to the rectum but is not more intense in one part than in another.	Ten days before death began to complain of diarrhœa, which resisted ordinary treatment, stools very frequent, containing at times blood.
25	Catarrhal.	Bronchitis, broncho-pneumonia, interstitial pneumonia.	The mucous membrane of the colon is intensely hyperæmic and thickened. Here and there over the surface there are small superficial erosions.	Pain in abdomen and diarrhœa with tenesmus, 20 to 30 dark liquid stools daily.
26	Diphtheritic.	Gangrenous inflammation of penis, septicæmia, anæmia.	The colon contains soft yellowish fæces which are firmer in the rectum. The solitary follicles are swollen and some of them are as large as split peas. Many have yellowish, apparently necrotic, centres or even a bit of yellowish membranous material adherent to them. In some places the swollen follicles have a central loss of substance, producing small follicular crater-like ulcers.	No intestinal symptoms
27	Catarrhal.	Malarial fever, bronchitis.	The rectum contains hard yellowish scybalæ coated with mucus. Similar balls of fæces also in colon and cæcum. The mucous membrane of large intestine particularly in the sigmoid flexure and colon, is coated with firmly adherent, stringy, tenacious, white mucus often peculiarly arranged in anastomosing lines. The mucus is of about the consistency observed in the discharges in cases of mucus or membranous diarrhœa.	No intestinal symptoms
28	Catarrhal.	Œdema of glottis following removal of tongue for carcinoma.	The follicles in the entire large intestine are moderately swollen. Mucous membrane hyperæmic.	No intestinal symptoms
29	Catarrhal.	Carcinoma of stomach with metastases.	The mucous membrane of the large intestine is hyperæmic. All of the solitary follicles are enlarged, white, opaque, and appear prominent against the dark color of the mucous membrane.	No intestinal symptoms
30	Catarrhal.	Anæmia.	The entire length of large intestine from the cæcum to the anus is extensively ulcerated. The ulceration is generally superficial, involving not more than the mucous membrane. The ulcerated part has a smooth grayish appearance with irregular margins. The remaining mucous membrane standing as islands and larger and smaller areas, on this grayish ulcerated surface. These portions of mucous membrane are highly congested, swollen, brownish red and velvety. [At first glance it is not altogether easy to say whether there is any ulceration except the small ones, but frozen sections show the ulceration to be so extensive in places, for instance, just above the anus, that only here and there a small islet of mucous membrane remains.] There is no undermining of the mucous membrane. The process involves the whole large intestine with about equal intensity. Perhaps rather more intense in the lower part. In the superficial ulcerated portions, there are small, round, deeper ulcers, generally not more than 2 to 3 mm. in diameter which can be easily recognized as ulcers.	Diarrhœa, with slight pain.
31	Catarrhal.	Fatty degeneration of heart and kidneys.	In the splenic flexure and descending colon there is a large area 7 cm. long of deep injection of the entire circumference of bowel. There is some mucus and blood in the lumen of the intestine. At this place and in the entire descending colon, the solitary follicles are swollen and injected. In some of them there is a slight depressed loss of substance in the centre. The mucous membrane between the follicles and ulcers is swollen, soft and injected.	Diarrhœa, with bloody mucus stools.
32	Catarrhal.	Phthisis.	Mucous membrane of ascending colon normal. Commencing at the end of the transverse colon there is extensive ulceration. The ulcers cover almost the entire extent of the gut and between them there are only small areas of mucous membrane. They extend along the gut for a distance of 45 cm. The ulcers are deep, irregular in shape, the adjacent mucous membrane thickened and slightly overhanging the ulcers. The bases of ulcers are firm, pale and covered with irregular granules. In the lower half of rectum the mucous membrane is entirely absent with the exception of a small fold just above the anus. The mesenteric glands are not enlarged. There is no appearance of caseation or tubercles in the bases of the ulcer nor in the thickened peritoneum over them.	Diarrhœa.
33	Diphtheritic.	Cirrhosis of liver, fibrous peritonitis, ascites.	The large intestine is the seat of superficial patches of diphtheritic ulceration most intense in rectum, extending halfway up colon disappearing in ascending colon. Mucous membrane of rectum very much reddened and hæmorrhagic with round, oval and irregular superficial ulcerations. They do not extend through the entire mucosa and are covered with a thin gray diphtheritic exudation on a hemorrhagic base. There are also flat projections of a grayish-red color, covered with a thin grayish-brown exudation. The ulceration is very superficial. Higher up the ulcers are less numerous and more regularly round and oval, measuring from ½ to 1 cm. in diameter. The non-ulcerated elevated patches of diphtheritic exudation are more numerous than in rectum.	Diarrhœa.
34	Diphtheritic.	Chronic nephritis, tuberculosis.	In the last part of the descending colon and rectum there are numerous ulcers. These are superficial with well defined edges. Their base is rough and irregular and covered with a dirty grayish diphtheritic exudation. Most of the ulcers have their long axis transverse to the intestine. The mucous membrane around the ulcers is distinctly hemorrhagic. The ulceration extends almost to the middle of the descending colon gradually becoming less intense. At this portion the ulcers are almost circular with clean sharp cut edges and a diphtheritic base. There are also ulcers which represent only superficial erosions of mucous membrane and which are without any fibrinous exudation.	Diarrhœa, with slight pain.

from ulceration. The ulcers increase in extent by the

entire edge of the ulcer, which extended down over the undermined portion, and in some cases partly over the floor of the ulcer. In this new growth of epithelium there were bud-like projections into the tissue beneath, and in some cases these had a lumen and represented newly formed glands. In cases characterized by the formation of cavities in the submucous tissue, the roof of the cavity was frequently entirely covered by a new formation of epithelium which had grown downwards from the mucous membrane. In most of the ulcers, there was not only this proliferation of the epithelium, but the entire mucous surface was folded and turned in over the ulcer.

The submucous tissue around the ulcers is infiltrated with cells. These are in part scattered diffusely through the tissue and partly arranged in masses and rows. The connective-tissue cells are large, pale and swollen, and in some cases the nuclei do not stain. The processes come out clean and distinct in the homogeneous-looking intercellular tissue. This tissue loses its fibrillation; it is not arranged in bands, but is clear and homogeneous-looking. The cellular infiltration is most intense in the immediate neighborhood of the ulcers, but there are often masses of pus and round cells separated from the wall of the abscess and lying close beneath the muscularis mucosa.

Amœbæ were first found in the intestinal contents by Lambl, in 1849. Losch was the first author who gave an accurate description of a species of amœba which he found in the stools of dysenteric patients, together with a careful clinical history and account of the autopsy. This work of Losch is really the pioneer work on the subject, and his description of the organism to which he gave the name of amœba coli, is so good that but little has since been added to it. The case of Losch's was one of chronic dysentery with periods of complete remission, lasting three years. The lesions in the large intestine were characteristic, consisting of thickening with extensive undermined ulcers and sloughs. Next to the work of Losch, that of Kartulis in Egypt, is the most important. In a series of publications in Virchow's Archiv, he describes the amœbæ both in the ulcers in dysentery and in abscesses of the liver accompanying this. In his last paper he reports successful attempts which he made to cultivate them, and claims to have produced dysentery in cats by injecting a pure culture of the amœbæ into the rectum, and then tying the anus in order to have the material retained.

Dr. Osler was the first in America to demonstrate the amœbæ. He found them first in the contents of an abscess of the liver and subsequently in the stools of the same patient.

The amœbæ are present in the stools, and may be easily recognized. In searching for them, there is some choice in the portion of the stools to be examined. They are rather more numerous in the small, gelatinous masses which are often found in the fæces. The numbers of them which are found in the different cases, and even in the same case at different times, vary greatly. At times no single portion of the fæces which can be examined is free from them. In other cases they are only found after a long search. Their numbers in general are proportionate to the severity of the lesions, and they are most abundant in those cases in which the lesions are most acute and most extensive. They may be most easily recognized when moving actively. In an inactive condition they are round and are more refractive than the other cells in the fæces. Their appearance when moving is characteristic. The activity of their motion varies greatly in the different cases, and even in different observations made on the same case. At times the movements are so slow that one must look carefully for some time to make it out, at others the movements are so rapid that certain phases can scarcely be followed. The movement is of two kinds; a progressive movement, and one limited to the protrusion and retraction of pseudopodia. They are from fifteen to twenty-five micro-millimetres in diameter, and we can distinguish in them a slightly granular, refractive interior filled with large vacuoles, and a smooth, homogeneous exterior. The motion seems to take place from the exterior homogeneous substance, the ectosarc. A process of this is thrust out, and the interior substance flows into it. Some observers have observed a nucleus in the actively-moving amœba, but we have not been able to distinguish a nucleus from the various vacuoles it contains. It is easy to see the nucleus in sections of tissues which have been hardened in alcohol and stained with safranine.

In the intestine the amœbæ are found in varying numbers in the submucous tissues around the ulcers. They are frequently found in the lymphatics and sometimes in the blood-vessels. Wherever they are present the tissue is swollen, infiltrated with cells, and in some cases there is fibrin formation in the tissue. As a rule, there is no necrosis in the immediate vicinity of the amœbæ; but in a few instances the connective-tissue cells around them have lost their nuclei, and there is some nuclear fragmentation. They were most numerous in the fat of the mesocolon in one case, at the bottom of a deep ulcer which had penetrated into this. As a rule, they are most numerous in the smallest ulcers where the process is rapidly advancing and where there is no suppuration. They are either found simply scattered through the tissue, or they seem to constitute the advance guard of the cellular infiltration.

It is impossible to say just how the ulcers begin. It is possible that the small glandular cysts in the mucous membrane were the starting-point of the process, but it seems more probable that the amœbæ reach the submucous tissue producing but few lesions in the mucous membrane, and that the essential lesions are produced in the submucosa, the mucous membrane being attacked from below. So far as can be seen, the changes which they produce in this are œdema with some fibrin formation and necrosis. The œdematous tissue softens, the mucous membrane is broken through, and the ulcer is formed. The reaction on the part of the tissue is shown, not by the formation of pus, but by the formation of granulation tissue.

In the thirty-three cases of dysentery, abscess of the liver was found in seven cases; in six of the eight autopsies of amœbic dysentery; and in one of the cases of simple dysentery. In four of the cases of amœbic dysentery more than one abscess was found, and in two cases they were so numerous and small that they resembled rather multiple tumor metastases than true abscesses. In all of the cases the right lobe was affected, and in two cases there were also abscesses in the left lobe. The most common seat of the abscess formation was the right lobe, and there were certain places of predilection in this. They were usually found near the surface, and either in the lower surface of the right lobe, corresponding to the hepatic flexure of the colon, or in the upper surface, close to or within the suspensory ligament.

The contents of these liver abscesses and the character of the wall varies according to the chronicity of the process. On section of the smallest abscesses a small amount of glairy semi-transparent fluid exudes, and leaves behind an irregular sponge-like mass, the fluid being apparently held in the meshes of this. In the older and larger abscesses, the contents are more fluid. The fluid from these has a grayish opaque color, and suspended in it are more solid masses of tissue. The contents of some of the abscesses were brownish or streaked with brownish red from admixture with blood. The character of the wall varied. In the smallest and most recent abscesses, there was no distinct limiting wall, save the surrounding liver tissue. The larger and more chronic abscesses are lined with a distinct layer of connective-tissue which is sometimes dense and hard, at others soft and œdematous. Even in the same abscess the character of the wall differs. In places it is smooth and fibrous, and at others there were large masses of necrotic tissue, extending from the abscess into the surrounding liver tissue.

On microscopic examination the contents of the abscesses varied. In the smaller abscesses there was fatty granular material, small irregular masses which could be recognized as fragments of liver-cells and a varying number of pus or lymphoid cells. In the larger abscesses the fluid contained a great deal of fat, numerous red blood-corpuscles, fragments of liver-cells, and very few pus-cells. Amœbæ were found in considerable numbers in the contents of all the abscesses, but they were more numerous in the smaller and more recent abscesses than in the larger and more chronic.

Two distinct sort of changes could be made out in the liver. In all cases, but much more marked in some than in others, there were extensive necroses. These were always more marked in the centre of the lobules than elsewhere. In one case, in all sections examined, the centres of all the lobules for a varying distance around the hepatic vein, were necrotic. The necrotic cells have no nuclei, and are converted into irregular refractive masses which stain intensely with eosin and picric acid. In these necrotic areas in the capillaries, and in the necrotic cells, there are numbers of leucocytes. This necrosis is not due to the presence of the amœbæ. There are none found in the liver save in connection with the abscess formation. The action of the amœbæ seems principally shown in the softening and liquefaction of the tissue. The sponge-like tissue in the small abscesses represents the remains of the portal tissue which often formed a more or less connected network while all the remaining portions were softened and converted into glairy semi-gelatinous fluid. The wall of the abscess was exceedingly irregular, extending wherever the necrotic tissue came in contact with it, and leaving almost intact the portal tissue. The amœbæ were found on sections scattered irregularly through the contents of the abscesses and frequently grouped in numbers around the remains of the portal tissue.

The smaller abscesses do not appear to exert any pressure on the surrounding liver tissue. There is no connective-tissue formation, and the cells apart from the necrotic changes spoken of, do not undergo any change. In the larger and more chronic abscess there is a more or less distinct wall of connective-tissue which extends to a varying depth into the surrounding tissue. We find in this newly-formed connective-tissue both newly-formed bile ducts and rows of liver-cells resembling these. The liver-cells for a considerable distance around are converted by pressure into long spindle cells, and bear more resemblance to the spindle cells of a sarcoma than to liver-cells.

Abscess of the lung was found in three of the eight cases. The lower lobe of the right lung was in every case the seat of the abscess. In two cases the diaphragm was perforated, and the lung abscess was directly continuous with an abscess in the upper surface of the liver. In the other, there was an abscess in the liver, but the diaphragm was intact. The lung abscesses resembled those in the liver in several respects. They were all very similar to each other in their general appearance. All were lined with ragged masses of necrotic material. In every case the tissue adjoining the abscess was firm and solid. Near the abscess it was of a whitish opaque color, further away it was more grayish and transparent. The consolidation embraced the entire lobe in which the abscess was seated. The consolidation differed from that in croupous pneumonia; the tissue could not be torn; the cut surface was perfectly smooth; and a large amount of fluid could be squeezed from it. Microscopic examination of the abscess contents or rather of the contents clinging to the wall, for the abscess was generally nearly or entirely empty, revealed much granular detritus, numerous round lymphoid cells, numbers of red corpuscles, pus-cells and amœbæ. The wall of the abscess is composed of necrotic tissue and a varying amount of connective-tissue. As in the liver, in some places this formed a definite wall to the abscess; in others, the wall bordered directly on the lung tissue. The consolidated lung around the abscess offers a perfect picture of interstitial pneumonia. The walls of the alveoli are thickened by connective-tissue formation, which often projects as bud-like masses into the alveoli. The lining epithelium loses its normal characteristics, and its converted into low cuboidal or cylindrical cells. The alveoli contain as well, masses of fibrin, which generally take the form of irregular filamentous masses. Immediately around the abscess the alveoli are often completely filled with large, round, fatty cells. The bronchi in the tissue are much altered. The walls are thickened, and contain great numbers of round cells, and the lumen is often filled with fibrin and pus-cells.

The amœbæ varied greatly in numbers, both in the different cases and in different parts of the same abscess. These were found in the contents of the abscess, and were especially numerous in the places where the abscess is rapidly advancing, and where there is no limiting wall of connective-tissue. They are in the greatest numbers in the alveoli immediately adjoining the abscess. They are found in the tissue all around the abscess, but in smaller numbers as the distance from the abscess increases. They are not found in the bronchi at a distance from the abscess, but in the bronchi near the abscess they are frequently found in considerable numbers. Here they are not only in the wall, but in the lumen as well. In the fibrous wall of the abscess they were found in considerable numbers in some sections, in others they were entirely absent. In this place, as in the corresponding part of the liver abscess, they were either in the blood-vessels or in the spaces of the tissue.

We have given so much space to the description of these lesions because they are those of a definite disease. The lesions which are produced by the amœbæ in the different organs are all the same in kind. They are different from those produced by any bacteria that we know of, and the mode of their production is different. The amœbæ seem to produce both a necrosis of the tissue and a liquefaction of the inter-cellular substance of the connective-tissue, as well as of the cells. This action of the amœbæ is seen more clearly in the production of the abscesses in the liver and lungs, where the process is uncomplicated by the action of bacteria, than in the intestine. There is never the remarkable destruction of cells with the breaking up of nuclei and the formation of nuclear detritus which is observed in the action of certain bacteria. Nuclear detritus is usually present in a certain degree especially in the abscesses of the lung, but not necessarily so. The necrotic cells seem to undergo a slow destruction and liquefaction, the nucleus sharing the same fate as the cell protoplasm. In all cases the number of amœbæ found in the lesions, bears a distinct relation to the activity of the process. Aside from this direct action of the amœbæ on the tissue, we must recognize as probably of equal importance with this, the action of the soluble products which they produce, as shown in the diffuse necrosis of the liver cells.

There is no doubt that amœbic dysentery is a common and wide-spread disease. Numerous cases of it have been reported in Egypt, Europe, and in the United States. In an article published with Dr. Lafleur we went over the most important literature of dysentery with a view to determining the frequency of this form. Both from the clinical and anatomical descriptions of the disease one could be sure of its frequent occurrence, more especially in the description of the disease in the tropics. Chronicity and intermittent character clinically, was associated with thickening and submucous infiltration and sloughing at the autopsy. It is not the acute epidemic dysentery; in that the lesions are distinctly diphtheritic.

The relations of abscess of the liver to this form of dysentery is interesting. The observations of Dr. Lafleur and myself were made on fifteen cases, eight of which died, and in six of these there were abscess of the liver. Of course, the statistics from so small a number of cases are unimportant, but the number is a very high one. From the numerous statistics on the relation between dysentery and liver-abscess in India, we find about one case of liver-abscess to four and one-half of dysentery; in Algeria, one to five and five-ninths. Of course, these statistics include all cases of dysentery, and we know that liver-abscess is a rare complication of diphtheritic or simple colitis. That it does appear in this, we see from Case 20, in which there was a slight inflammation of the colon and a simple chronic ulcer near the rectum. The abscess in this case differed in a marked degree from the amœbic abscesses. The contents were distinctly purulent, and the wall was that of an ordinary abscess.

The observations both of DeCastro and Kartulis show abscess of the liver to be a common complication of dysentery among the Europeans in Egypt, while Griesinger did not find one case in 186 autopsies on dysentery in native Egyptians. The testimony of all observers is that it is more common among Europeans in the tropics than among the natives. When we turn to the statistics on this subject in Europe and America, the infrequency of liver-abscess, as compared with the tropics, is very striking. Rokitansky in his essay on the dysenteric process says he has never encountered this complication; nor did Finger find an example of it in the 231 autopsies he made in Prague. Baly did not encounter it in the hundreds of autopsies he made in the Millbank prison. Lyons found only one liver-abscess in 51 autopsies of dysentery made in the Crimea. Cheyne found it in five out of 30 autopsies in Ireland. The only statistics which we have are those of Woodward and Fox. Woodward found five cases of abscess in 90 cases of follicular dysentery, and Fox in St. Louis found it five times in 30 autopsies on chronic diarrhœa and dysentery.

This much greater frequency of the complication of liver-abscess in the tropics than in Europe and America, in what we regard as the same disease, is inexplicable. Certainly many of the cases described by Finger we would regard as typical of amœbic dysentery. We know — not only from the description of dysentery in Prague, in Vienna and elsewhere in Germany, but from personal observation — that cases are numerous in which the lesions are those of amœbic dysentery, and yet abscess of the liver accompanying it is a very rare complication. Hlava has found the amœbæ in 60 cases of partly sporadic, partly endemic, dysentery. He says nothing about abscesses of the liver, and we presume this was not present in his cases. In Egypt where the observations of Kartulis were made, and where dysentery ranks as one of the most common diseases, abscess of the liver is certainly more rare than in either India or Algiers. From all reports on the subject we know how rarely abscess of the liver is found in England. When found there, it is usually in sailors who have returned from a voyage to the tropics or in people who have contracted dysentery in India. We have, however, found several cases reported of typical dysenteric abscess in people who have never been out of England.

We think that the following conclusions may be made:

From the various inflammations of the large intestine which form the anatomical lesions of dysentery, we can separate one distinct form, both clinically and anatomically, which is produced by amœbic dysentery.

The other inflammations of the colon may appear independently or in the course of other diseases. It is probable that they may be due to a number of causes. It is at present impossible to distinguish in them a characteristic lesion which we can regard as due to the action of a single cause.

Our endeavors both clinically and pathologically should be mainly in the direction of ascertaining whether there are other diseases due to definite etiological factors, the anatomical lesions of which are found among the catarrhal and diphtheritic inflammations of the colon.

The Barnes Medical College is the name of a new institution lately chartered for the teaching of medicine in St. Louis. Dr. C. H. Hewes, late professor of neurology, psychiatry and electro-therapy in the Marion-Sims College of Medicine of St. Louis, is president of the faculty. Dr. Pinckney French, late of the Marion-Sims, is secretary. The school will be open for the reception of students by the first Monday in October next.

THE SURGICAL ASPECT OF THE PARALYSIS OF NEW-BORN CHILDREN.

BY ROBERT W. LOVETT, M.D.,

Out-Patient Surgeon to the City Hospital, Assistant Out-Patient Surgeon to the Children's Hospital, Surgeon to the Infants' Hospital.

It is desired to call your attention to a class of cases of surgical injury occasionally received by children during birth. I allude to those cases of paralysis of the arm, which appear from time to time in surgical clinics, and about which there is surprisingly little information in the books.

This paralysis of the arm is not, of course, the only one which children receive during difficult labors. Cerebral injury resulting in hemiplegia or spastic paralysis (often spoken of as Little's disease) is in some cases the outcome of injury received during birth. But more often it is the outcome of a cerebral or meningeal inflammation occurring in early life, while in other instances the disability is the result of fœtal changes.

A second form of paralysis which may be mentioned as sometimes occurring during birth is paralysis of the legs, due to an injury to the spinal cord from excessive traction upon the legs. Such cases as these are not likely to find their way into literature; but there are at least three well-authenticated cases on record. In all of them paralysis of both legs was found to exist after birth. In one, the case of Nadaud,[2] the presentation was a head, but the labor was excessively difficult and the child was only delivered after strong and long-continued traction made by the forceps.

In the case of Parrot[3] the presentation was a breech. Very strong traction was made on the legs and complete paralysis of the lower extremeties was present immediately after birth. The child died in a few days; and autopsy showed a rupture of the spinal cord at the level of the seventh cervical vertebra.

A third case was reported by Gueniot[4] (but not in detail), where severe traction caused a rupture of the spinal cord at the third cervical vertebra, with fracture of the spine.

These are the only cases that I have been able to find on record; and I mention them now more to call your attention to the discussion of such cases than for their practical value.

The commonest forms of paralysis directly attributable to injury during birth are facial paraylsis and paralysis of the arm.

Of facial paralysis there is very little to be said. I have had no personal experience in the matter, but it is described as being generally transient, and in the great majority of cases passing off in a week or two after birth. It is produced by direct injury to the nerve by the application of the forceps, although it occurs in occasional cases where instruments have not been used, especially in face presentation. Parrot and Troisier have demonstrated the paralysis to be due to injury of the nerve, most often at its exit from the stylo-mastoid foramen. This may go to the extent of a fatty degeneration, but in general the pathological changes to be noted are slight in the few cases where an autopsy has been made.

Although in general the paralysis disappears in a few days, or at most a few weeks, there are cases on record where facial paralysis has been permanent, as in a case reported by Duchenne.[5]

Paralysis of the arm, which I wish to make the especial subject of my paper, is fortunately not a very common accident. In 5,600 cases of surgical disease in children coming to the surgical out-patient department of the Children's Hospital since 1884, there have only been two cases of obstetrical paralysis of the arm, and this would point to a decided infrequency of the affection, as many kinds of paralysis find their way to this clinic. Last year, for instance, there were some 60 new cases of various sorts of paralysis brought to the department.

I am able to present you an analysis of nine cases of this affection, especially with regard to the end results to be expected; and, so far as possible, I have made prominent the practical features of them. Of these nine cases, two occurred in my own experience, one occurred in the practice of Dr. C. W. Townsend (who has kindly allowed me the use of his notes), for one case I am indebted to Dr. J. G. Dearborn, of Charlestown, and the other five are from the records of the nervous out-patient department of the Boston City Hospital, occurring in the services of Drs. Prince and Bullard, to whom I am indebted for permission to use the cases. Dr. Stickney, the house physician at the Children's Hospital, has rendered me much assistance by finding and investigating the present condition of these cases, in some of which several years have elapsed.

The condition is made manifest immediately after birth by an inability to use one arm, it hangs powerless at the side, with the palm turned backward, and often the fingers are flexed tightly. If the arm is lifted from the side it falls lifelessly back into place, and although movement of the fingers is generally present, it is impossible to use the arm to any extent on account of the paralysis of the shoulder muscles.

It is desirable, if possible, to know the cause and the natural history of this condition, especially with regard to the prognosis.

Cases of paralysis of both arms are on record, as in Observation X of the series reported by Nadaud.

This paralysis is not always the result of difficult labor. In most cases, however, it is to be attributed to some abnormality in the birth of the child.

Of my nine cases, I was able to learn of the character of the labor in all but one. One labor was described as a cross-birth, but beyond that no information could be obtained. The second was a footling presentation, with a long, hard labor, and forceps were applied to the after-coming head. The remaining six labors were with the head presenting. All were multiparæ, and in four of the six the labor was described as hard and forceps were used. The two remaining cases are particularly worthy of attention. In one the child was the eighth, and the labor was described by the mother as being unusually easy. The other is of such interest that it is presented in detail, as it demonstrates very clearly how paralysis may result from what appears to have been an easy labor. In this instance the woman was delivered at the Boston Lying-in Hospital, and six weeks afterwards came to the surgical clinic at the Children's Hospital.

Case I. Mrs. M., twenty-six years old, was delivered of her second child at the Lying-in Hospital on January 6,

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[1] Read by invitation before the Obstetrical Society of Boston, April 9th, 1892.

[2] Nadaud: Thèse de Paris, 1872, No. 282.

[3] Parrot: L'Union medicale, 1870, No. 11.

[4] Gueniot: Ibid.

[5] Quoted by Nadaud.

1892. She entered the hospital at 6.40 A. M., the pains having begun at 1 A. M. The membranes ruptured at 8.15 A. M., and an hour later the child was born. The presentation was a head, with the position of occiput left anterior. The labor was an easy multiparous one, and instruments were not used. The first stage occupied seven hours and thirty-five minutes; the second, twenty-five minutes; the third, five minutes. After the head was born there was no advance, and strong traction on the head combined with pressure on the fundus was necessary to deliver the body. The child weighed ten pounds.

It was noticed immediately after birth that the right arm was not used; and February 13, 1892, six months after birth, the child was taken to the Children's Hospital. No bony lesion was found, but the paralysis seemed to be complete so far as the arm was concerned, although the fingers could be moved a little. The child had some electrical treatment from Dr. Bullard, but on March 29, 1892, the following note was made:

"No improvement has occurred: the arm hangs powerless at the side; the fingers are doubled in the palm, which is turned backward; and there is slight limitation in the movements of the shoulder."

This demonstrates how little is required in a given instance to produce so serious a lesion as this.

In certain cases a disability of one arm simulating paralysis is due to a fracture or dislocation of the upper end of the humerus. In the case of a fracture the nerves may be involved in the callus, and impairment in their functions (a true paralysis), may result from their involvement, or the disability may be only a transient one due to the fracture itself. I saw last winter, in consultation with Dr. Greenleaf, a woman, thirty years old, who had a wasted and shortened arm with a deformity of the upper end of the humerus, the result of a fracture received at birth; but the disability was so slight that her husband had never noticed the impairment of the usefulness of the arm, which was quite marked in careful examination.

The disability of the arm noticed at birth is, however, in most cases a paralysis due to an injury of the brachial plexus, which lies at the root of the neck, embedded among the muscles and directly in front of the trapezius muscle. It is therefore liable to severe pressure in the descent of the child. This sets up an irritation which may eventuate in a neuritis resulting perhaps in fatty degeneration of the nerves, and upon the extent of the original injury depends the amount of disability. Theoretically, it seems curious that the accident is not more common if it can be produced by such trifling causes as in the labor described last.

There has been a general consensus of authority as to the cause of the affection, although Jacquemeyer attributes it more often to prolonged pressure of the humerus against the nerves of the plexus in the axilla.

In a case reported by Danyau[6] it was clearly demonstrated at autopsy that the nerves had been locally injured and were surrounded by ecchymoses produced by the blades of the forceps. A long contusion running down the border of the trapezius muscle was seen externally.

It is asserted by some writers that the injury to the plexus is produced by too deep an insertion of the forceps into the pelvis; but the fact that two of these nine cases occurred without the use of forceps at all shows that such a supposition cannot explain by any means all of the cases.

The paralysis is most marked in the deltoid and biceps muscles, the supinator longus, and the supra- and infra-spinatus. Gowers states, that the paralysis is most often due to an injury of the branch from the sixth cervical nerve to the brachial plexus. It seems difficult to understand how traction upon the head can be severe enough to stretch the nerve roots of the plexus without producing other injuries; and pressure directly upon the nerves of the plexus by some of the bones of the pelvis is a more satisfactory explanation in those cases where it can be assumed.

In short, so far as we can judge, the cause of the paralysis would seem generally to lie in strong traction made oftenest by the forceps, but that in certain cases the paralysis is probably produced by direct pressure upon the plexus either by the instruments or by the bony prominences of the pelvis.

Once more, it may be said that it is hard to understand how traction upon the head, or even upon the arm itself is sufficient to stretch so seriously the brachial nerves without tearing apart the shoulder-joint or inflicting some other injury. And again it is difficult to comprehend why the affection should be so uncommon if it can be produced by strong traction, in view of the fact that strong and even violent traction is so often necessary during delivery.

The cases that I have analyzed have all followed one course. The paralysis has been complete, and the arm has hung lifeless at the side for weeks and months, with little or no improvement in its condition. Atrophy is not marked at first, but gradually comes on in slight degree, and the shoulder appears wasted and droops a little. In the course of years, a certain amount of motion is restored to the arm; and in the oldest cases among those analyzed, there was a fairly useful arm. There is some shortening of the bones and some atrophy of the muscles; but the disability is chiefly to be attributed to the paralysis of the muscles of the shoulder.

I give in detail the present condition of a typical case, now six and a half years old:

Case II. Willie H. The labor was a particular easy one and the paralysis at first was complete in the right arm. The child has had but little treatment. He is now well developed, and stands with the right arm hanging at the side. The elbow is slightly flexed and the palm turns backward. The humerus is half an inch shorter than the left one, and the arm is half an inch less in circumference. The grasp of the hand is good, but motions which involve the deltoid and spinatus muscles are imperfect. He can raise the hand to the opposite shoulder, and with some difficulty to the mouth, but not to the top of the head. He is just learning to write with that hand, but feeds himself very imperfectly.

This case serves as an example of what may be expected at the end of some years.

Case III. By the kindness of Dr. J. G. Dearborn, of Charlestown, I was enabled to examine a young lady, nineteen years old, whose right arm had been paralyzed from an injury received at birth, and the case was of such interest that it is given in detail. This patient was born by a difficult labor, in which forceps were used. The paralysis was noted soon after birth, and the child had the benefit of early and continued treatment. Her present health is excellent, and her condition at the end of nineteen years has much bearing upon the prognosis of this affection. She stands with the right shoulder drooping, and the clavicle on the right side is an inch shorter than on the left. The right arm is four inches shorter than the left, and two and one-half inches of this shortening is in the humerus, the rest in the bones of the forearm. The hand is slightly smaller than on the other side. The forearm and arm of the affected side both measure one inch less in circumference than on the opposite arm. The grasp of the hand is fairly good. But it is in the movements of the shoulder that one chiefly notices the disability. The arm cannot be fully extended at the elbow, but can be flexed beyond a right angle. The arm cannot be lifted at all from the side by voluntary effort. The patient can touch her chin with the hand of the affected side, but cannot raise it to the mouth or to the opposite shoulder. The arm, as it hangs at the side can be used, and the movements are perfectly co-ordinated. Practically, she can do very little that is useful with the hand, but she notices an improvement in its usefulness each year.

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[6] Bull. de la Soc. de Chir., 1851, ii, p. 148.

It seems hardly worth while to do more than summarize the remaining cases, to show the data from which conclusions of this paper have been obtained.

CASE IV. Harry H., one year old. Fifth in family. Long, tedious labor, and forceps delivery. Paralysis at first was complete, but now the child can move the arm slightly, and there is considerable power in the hand. As yet, the left arm is practically useless.

CASE V. Joseph D., five years and nine months. "Cross birth," and complete paralysis of the left arm. Last winter the child was operated upon for a muscular contraction of the arm which had come on and rendered it useless. This case is open to doubt, and may possibly have been one of cerebral paralysis.

CASE VI. Katie D. Died at the age of one year and six months. The account of the labor could not be obtained. The paralysis remained complete to the time of death.

CASE VII. Minnie F., three years old. This child was born by a footling presentation, and forceps were applied to the aftercoming head. The paralysis of the left arm was complete, but at the age of two years the child was able to feed herself and to raise the hand to the mouth. The arm, however, was shorter than the right, and not very useful.

CASE VIII. Thomas F., nine months. The labor was not a very hard one, but forceps were used. The paralysis of the right arm was at first complete. With treatment by Faradism for two or three months the arm improved, and the hand can now be raised to the chin but not to the head. It seems to be steadily gaining, and the case was the most favorable one among those seen.

CASE IX. Charles M., six years old. Child was the tenth in a family of eleven. The head presented, and forceps were used. The left arm was completely paralyzed from birth; but improvement began early, and has been continuous. The humerus on the affected side is half an inch shorter than the other, and all the motions at the shoulder are much restricted. The arm is only fairly useful, although the atrophy is slight. This case corresponds most closely to Case II, a child of the same age.

In view of these cases and their uniform slowness of improvement and incompleteness of recovery, it is hard to see on what ground nearly all of the books speak of the affection as transient and of little account in most cases. For example, I quote from the best as well as the most recent article on the subject: "*The paralysis usually passes off in a few days*, but if the damage be severe and irreparable, will be permanent."[7] It is a matter of the greatest importance that the question of prognosis should be carefully formulated; and in the discussion it is to be hoped that some gentlemen will have a more favorable experience to relate.

But from the cases given here, which are certainly representative and qualified to give a view of the end results, the prognosis must be set down as bad, and the paralysis of the arm occurring at birth must be regarded as a very serious affection which will improve with discouraging slowness and leave the arm, after all, in a very unsatisfactory condition, and in the most favorable cases only partly useful.

The diagnosis rarely presents any difficulty. The paralysis is present at birth, and involves only the arm. It may be simulated (*a*) by fracture or dislocation of the shoulder; (*b*) by a hemiplegia occurring before; during, or after labor; (*c*) by infantile paralysis, which should be mentioned as a possibility in very early life, although the greatest of rarities in the first months. A case, however, stands on record from Duchenne where anterior poliomyelitis occurred on the twelfth day after birth. As a matter of fact the paralysis of the arm received during labor rarely is noted until some days after birth.

In the treatment of this affection, electricity is universally advocated as the best and most available measure at our command; and the faradic current is used in preference to the galvanic. But few parents will persist in a treatment which is likely to stretch over months, with little or no sign of improvement; and practically most of the cases analyzed here have been untreated so far as any continuous application of electricity is concerned. In the lighter cases electricity might be of much practical benefit; in the severer, it would certainly aid in preserving the nutrition of the muscles and hastening the improvement so far as possible.

One measure which seems reasonable has been used in the cases coming under my own observation, namely, a supporting bandage to the arm and shoulder, generally applied in the form of a Velpeau. In any paralysis of the deltoid and shoulder muscles the weight of the arm drags heavily downward and stretches the ligaments and the disabled muscles. In a case of slight paralysis it might be a very important matter to support temporarily the arm and save the muscles from further stretching and irritation. In a severe case, of course, it would do little or no good. Indeed, it is easy to see that, where an injury to the nerves lies at the root of the trouble, measures addressed only to the muscles supplied by those nerves are not likely to produce any radical improvement.

In conclusion, I would call your attention once more to some of the more important practical conclusions to be drawn from the analysis of these cases. The paralysis most often occurs in very difficult and in instrumental labors, but it is not necessarily limited to these, and may result from labors apparently normal. It is probably due to some injury of the brachial plexus, and is generally associated with strong traction made upon the head. Last, and most important of all, is the fact that the affection is not in most cases a transient one, but that the outlook is doubtful at best, and a disabled arm is most likely to result after years of slow and unsatisfactory improvement.

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[7] Keating's Encyclopedia, vol. iv, p. 807.

Clinical Department.

A CASE OF EXTREME DYSPNŒA AND CYANOSIS BEFORE, DURING AND AFTER LABOR.[1]

BY R. PROVAN, M.D.

Mrs. S. H., a lady about thirty-five years of age, called upon me during the summer to ascertain whether she was pregnant or not, as she had not menstruated for over two months; and if she was pregnant, wished my opinion in regard to the probable danger of her having a child, taking into account her age and the family tendency to heart disease, which she informed me existed on her mother's side, and also that her father and brother had been troubled in that way. On making a careful examination, I could discover no apparent reason why she should not have a child, as there was no heart disease and no deformity of the pelvis, no organic disease of any kind, and her general health was good. Accordingly, by all means, I recommended her to have her baby.

She went away apparently satisfied, but returned again in about two weeks with serious apprehensions that she would not live through her confinement. Again I tried to dispel her fears, assuring her that there was no good reason why she should not do well. I did not see her again for several months, when she consulted me about a nurse and other matters. She was then perfectly well, cheerful and happy, and continued so up to within three days of her confinement.

February 29th, she had occasion to go down stairs in the evening and was taken with a severe attack of dyspnœa, which continued all night, she not being able to lie down or get any sleep. I was called in the morning, but the breathing was greatly relieved before my arrival and continued better through the day. At night, however, it became very much worse and she was obliged to sit up all the second night without any sleep.

The following day she was considerably better again. Towards evening some pregnancy pains came on and continued for several hours, when the pains subsided but the dyspnœa increased to such an extent that her husband ordered a carriage and came for me in haste. This was between 11 and 12 P. M., March 2d. On my arrival, her condition was truly alarming. She was gasping for breath, her hands were cold and livid, her pulse scarcely perceptible, threadlike and irregular, her countenance had a cyanotic, deathly hue. She did not look as if she could survive many hours. I immediately sent for digitalis and a carbonate of ammonia mixture, which was speedily obtained and administered freely. I sent a messenger for Dr. Stedman to come to my assistance and he responded promptly. I made an examination, and found the os dilated about the size of a silver half-dollar, and decided to rupture the membranes and let the waters escape, thinking it might afford some relief to her breathing, and am convinced that it did, for when Dr. Stedman arrived, half an hour later, there was some improvement in her condition, this probably was due partly to the digitalis and carbonate of ammonia.

The question for us to decide was, Shall we proceed to forcibly dilate and deliver her, and if so shall we give her ether? She could not lie down, there were no labor pains, and with her sensitive nervous organization and extremely weak condition, she could not stand the shock without ether. After considering all the conditions, Dr. Stedman suggested that perhaps it would be well to have further counsel. So a carriage was sent fo. Dr. Green. Before he arrived, however, she had some labor pains come on, and by having her supported on the edge of the bed we were able to dilate the os so that the forceps could be applied. This having been accomplished, there was not so much objection to administer ether as she would not have to be kept under its influence for so long a time.

When Dr. Green arrived we were not long in deciding that the best thing to do was to give ether and deliver at once, which was done as rapidly as possible, the time occupied being less than half an hour. She did not, however, rally as we had hoped she would, but remained in a semi-collapsed condition. Dr. Stedman and Dr. Green both gave brandy hypodermically to keep her from flagging. I remained all night with her, and indeed slept in the house a number of nights after, by her husband's urgent request.

There have been several times when her pulse could not be counted and scarcely felt. Her stomach has retained nourishment, stimulants and medicine remarkably well up to the present time, occasionally nausea and vomiting has occurred, when we have had to resort to injections. The third night after delivery she became cold, and circulation was very poor. I gave her nearly a quart of milk with three ounces of brandy and twenty grains of carbonate of ammonia by enema, the nurse compressing the natis to prevent it from coming away. This was continued for nearly half an hour, and it was all retained. It revived her considerably; the pulse became stronger and her cheeks had a hectic flush for some hours.

There was no analysis of urine made previous to child-birth. She had no œdema of limbs, and the dyspnœa only came on three days before delivery. There were no other symptoms of kidney trouble until about March 9th, when her limbs became œdematous, gradually increasing until it involved the back and abdominal walls, but not the abdominal and pleural cavities. There has been some œdema at the base of the lungs, and the right arm and hand became very much swollen; the veins were hard and rather painful near axilla.

In the urine examined March 9th or 10th, a small deposit of albumen was found, which increased in amount until the 16th, and after that time gradually diminished until the 20th, when it entirely disappeared for one day, only to return the next, and is still present in very small quantity. The first examination under the microscope contained no casts. A specimen examined several days later by Dr. Stedman contained granular and hyaline casts with pus and blood globules.

I have the bedside notes taken by two professional nurses from March 5th to the present time, giving a record of the pulse, temperature, respiration and treatment, which will furnish any information desired. These records also give the amount of nourishment and stimulants taken each day, together with the quantity of urine passed, the movements from the bowels, etc. As Mrs. H's condition remained quite critical and the insomnia (which has been an exceedingly troublesome symptom) continued, Dr. Sinclair was twice called in consultation and made some valuable suggestions.

I shall not prolong this paper by giving the opinions of the eminent counsel we had in this case in regard to diagnoses, prognosis and treatment. I can say, however, that if it should be my misfortune to have another such patient, I could desire no better medical skill and support than from the gentlemen whose names I have mentioned. To Dr. Stedman I am greatly indebted for his prompt and cheerful service by night and by day, relieving me of much of the care and responsibility of this anomalous and interesting case.

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[1] Read by invitation before the Obstetrical Society of Boston, April 9, 1892.

Note. — The patient died suddenly April 10th, her brother, a man about forty years, died a few days later, and a post-mortem examination made on him showed an absence of one of the valves of the heart.

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Medical Progress.

RECENT PROGRESS IN MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BOSTON.

ESTABLISHMENT OF SOCIETIES FOR THE PROTECTION AND AID OF DISCHARGED ASLYUM PATIENTS.[1]

By the direction of the French Government, societies for the supervision and aid of insane patients on their discharge from asylums, are being formed throughout that country. In a circular to the different prefects, the Minister of the Interior calls attention to the fact that asylum physicians often hesitate to set certain patients at liberty, whose mental condition seems to have so far improved as to make it useless to keep them longer under treatment (or even those who have recovered) for fear that thus suddenly thrown on their own resources without oversight or perhaps without means of support, they will fall back into their old habits of life which gave rise to their insanity. This is particularly the case with those who, as often happens, are prevented from obtaining employment simply because they have been inmates of an asylum.

He advises that protective societies be formed for the oversight and assistance of such insane persons, through the first phases of their return to ordinary life.

He adds that the Superior Council of Public Charities, in the course of an inquiry into the proposed revision of the lunacy laws of France, have recently formulated a series of recommendations regarding these "Societies of Patronage," which are in effect as follows:

That the Minister of the Interior urge the various prefects to encourage the formation of societies for the purposes above described, in every possible way, in all the departments.

That it shall be the office of these societies to aid convalescent or recovered patients by the following means: gifts of money, clothing and tools (this assistance to be weekly, monthly, or quarterly); redemption of articles in pawn, payment of rent, admission to convalescent homes, in cottages intermediate between confinement and complete freedom, or in hospitals or houses of refuge; finding situations for them in work-shops, business houses, on farms, etc., and finally, their supervision in whatever place they are employed.

That the different societies be encouraged to coöperate.

That these societies be authorized to invest the savings of the insane, and remit thereto the interest.

The minister expresses himself as heartily in favor of and ready to help to carry to consummation the views of the council, and calls for speedy information from the prefects as to the results of the operation of the project as well as suggestions for its furtherance.

Dr. Rayner,[2] in an article on the after-care of male patients discharged from asylums, refers to what is being done in England along the same lines in the After-Care Association for the discharged insane women, and strongly urges the extension of this admirable charitable work to insane men similiarly situated.

THE INSTINCT OF LIBERTY AMONG THE INSANE.

Verga[3] attempts to throw light upon this subject through statistics, his inquiry being: Does the normal instinct of liberty exist in the insane? At the asylum of Montefello out of 1,211 patients, 65.81 per cent. desired liberty, 15.19 simply wished to get well, while 19 per cent. were apathetic. The women seemed to care less than the men about leaving. The patients who are attached to aslyum life and want to remain are cases of degeneration or dementia, as he illustrates by tables of statistics. The older the patient the more ready is he to stay. Wretched homes or outside conditions have nothing to do with their willingness to remain in the asylum. Epileptics like the asylum because they are protected from danger there. Some paranoiacs like asylums because of delusions. The chief reason is due to hereditary or acquired degeneracy.

UNCONSCIOUS PSYCHICAL ACTIVITY IN MENTAL PATHOLOGY.

As De Sarlo[4] looks upon it the idea of unconscious mental activity is not the Alpha and Omega of psychology, but is useful in order to understand many phenomena. He applies Janet's work to psychiatry. But many before Janet had appealed to the unconscious activity to explain these phenomena.

(1) In *psychopathic defects*, psychical elements which are detached from personality, from principal apperceptive activity (from consciousness) are few, and form a partial automatism which functions on its own account and preserves close relations with the rest of the mind. The separation is very slight and permits the confirmation outside the mind of insignificant phenomena which exaggerate or modify the manifestations of normal consciousness and sometimes oppose it.

(2) In *morbid degenerate forms* (periodic and circular insanity, hysteria, epilepsy, hypochondria, paranoia) the psychic elements which concur in forming a second personality are multiple and tend to be organized in a complex fashion. In such cases the second personality, which may be simultaneous or successive in the same individual, speaks and acts on its own account and remains by the side of the first personality, with which it often has no rapport. There are two or more true personalities simultaneously or successively in the same individual. At other times the abnormal group is so rich in elements as to attract the subject's attention to disturb or take away his liberty, and may finally be substituted completely for the principal personality (paranoia).

(3) In *psycho-neuroses* then is no formation of abnormal groupings of psychic elements or the constitu-

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[1] Archives de Neurol., 1892, pp. 262, 263.

[2] Journal of Mental Science, October, 1881.

[3] Arch. Italiano p. le Malad Nerv., xviii, 252, September and November, 1891.

[4] Rivista Sper. di Freniatria, xvii, 97, 201, 1891.

tion of a new personality, but there is an unconscious normal activity, which functions in an exaggerated or perverted way. To feel every deterioration of organic or psychic life as pain (melancholia), or to have a sense of euphoria with greater motor activity (mania), is a deductive process analogous to what takes place in the normal state. In disease unconscious action in morbid conditions (exhaustion, intoxication) becomes exaggerated and perverse. Ordinary deductions become sophisms.

These states resemble strange vague feelings which we all have, a persistence of emotional states after cause is removed.

Psychic disassociation and automatous function of mental aggregates which normally are in reciprocal dependence, is at the bottom of many mental affections. They came on with exhaustion and debility. The abnormality of unconscious activity, with psychic disaggregation depends finally on all debilitating, degenerative, toxic and infective influences. He cites various cases of *folie du doute* illustrating unconscious activity.

PROGNOSIS OF ACUTE MANIA.

Willerding[5] concludes an article on this subject as follows:

(1) About 70 per cent. of all cases of acute mania are cured after running a course averaging several months.

(2) Early treatment in insane hospitals has a favorable effect upon the course of the disease.

(3) A family history of insanity does not necessarily make the prognosis unfavorable.

(4) Cases of mania occurring as sequelæ to disease, alcoholism or pregnancy have a favorable prognosis both as regards duration and ultimate cure.

(5) Cases due to slight injury of the head usually recover.

(6) The return of the menstrual flow accompanying an improvement in the mental condition is an indication of speedy return to health.

(7) The younger the patient the greater is the hope of recovery.

(8) Recurrent mania presents a bad prognosis for complete and lasting cure.

(9) When the disease is of long standing the probability of recovery is poor,

(10) The sudden onset of the maniacal excitement is an unfavorable symptom except in those cases following pregnancy or traumatism of the head.

(11) Sudden stoppage of the maniacal excitement must raise the fear of recurrent mania or of early relapse.

(12) Great increase in weight before the beginning of the quiet stage must be similarly interpreted.

(13) The more severe the attack the poorer is the prospect of complete recovery.

(14) Paralysis and convulsions must be looked upon as grave complications.

ALTERATIONS OF THE CEREBRAL PIA MATER IN THE INSANE.

Dr. Greco[6] reports the following results of forty-eight cases:

(1) In general paralysis we find peri-arteritis of the smallest vessels of the pia, especially in the layer nearest the cortex; in general the signs of chronic fibrous leptomeningitis. At times in the smallest vessels of this region, beside peri-arteritis, we find obliterating endo-arteritis, and in the medium-sized vessels, thickening and fatty degeneration of the muscular coat.

(2) The regularity with which we find peri-arteritis of the smallest vessels in general paralysis, even in patients who die early, when the brain substance shows no sign of sclerosis or atrophy, goes to support the views of Meyer, Rumpf, and Mendel, that the vascular lesions, as a result of persistent hyperæmia, represent the first histological changes in the brain of the general paralytic, and that the changes in the cells and neuroglia are secondary.

(3) In pellagrous insanity we find the pia diffusely opaque, with slight increase of connective-tissue in its structure, often with slight nuclear infiltration, either diffuse or about the minute vessels of the pia or brain substance.

(4) In some cases of pellagrous typhoid, and especially in acute delirium, we find signs of recent hyperæmia in the pia.

(5) In other forms of insanity (particularly periodic, epileptic, terminal dementia, etc.), the pia is slightly thick, with rigid and tortuous vessel walls. Similar changes are seen in sane persons of advanced age or with marasums. Very rarely the thickening is great and the brain substance atrophic and indurated, and the lateral ventricles are dilated and full of serous fluid.

(6) In the insane all forms of thickening of the pia begin ordinarily over the central convolutions.

In the forty-eight cases in which thickening of the pia was present, twenty-one were cases of general paralysis; nine of pellagrous insanity; six of terminal dementia; four of acute delirium; and one each of periodic insanity, relapsing mania, relapsing lypemania, epileptic imbecility, epileptic insanity, melancholic stupor, senile dementia, and dementia agitata.

THE PATHOLOGY OF GENERAL PARALYSIS.

F. Brazzola[7] describes elaborately and minutely a clinical case of general paralysis of the spinal type, giving fully in detail the gross and microscopic findings of the autopsy. The case was one with a strong hereditary tendency to alcoholism, but without other nervous antecedents. There was possibly also some specific heredity and the patient himself was undoubtedly syphilitic.

The symptoms were, as stated, largely of spinal origin, though the characteristic paretic cerebral symptoms also were apparent. At the autopsy there were found lesions in nearly all portions of the nervous centres, meningitis and encephilitis, and sclerosis and degeneration of spinal cord, specially in the columns of Goll which were involved throughout their whole extent. The direct cerebellar, the columns of Burdack, the pyramidal columns, and in the lumbar regions nearly all the sections of the cord, were also involved. The peripheral nerves were also altered by a light neuritis, and there was everywhere decided vascular alterations from which the mischief appeared to take its start. These consisted largely in an endarteritis which was probably of specific origin. In his discussion of the case the author dwells especially upon the part which the vascular changes played in the production of the alterations of the nervous system proper, and is inclined to recognize a direct relation between the two.

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[5] Allgm: Zeitschrift f. Psych, and Psycheich-Gericht. Med., 1891, and Review of Insanity and Nervous Disease, September, 1891.

[6] Rivistà Sper. di Freniatria, xvii, 276, 1891.

[7] Archivio Ital., xviii, fasic., xvi, 1891; and Review of Insanity and Nervous Diseases, March, 1892, p. 300.

He holds that the arteritis of dementia paralytica is, in very many cases at least, specific, and therefore there is a direct relation between syphilitic infection and paresis.

He does not, however, reduce all the etiology to this one cause, but holds that it is the predisposing condition. Other factors are necessary for the development of the disease and he recognizes the importance in this relation of heredity, vicious habits, over-work, etc., that may diminish the resisting power on the part of the nervous system. "Finally," he says, "as I have already done in other memoirs, I wish to insist on the relations which exist between progressive paresis and tabes. Without going into particulars, I hold that these two morbid species have the closest relations etiologically, clinically, and anatomo-pathologically. The causes that lead to them are the same; clinically they grade into each other; there are true forms of passage from one to the other (such as the case I have described); in an anatomo-pathological point of view, especially since the latest works on tabes, the two forms approach each other more and more; and the different morbid syndromes depend solely upon the different localizations of the lesions and their different degrees of intensity."

TOXIC AND BACTERICIDAL ACTION OF THE BLOOD SERUM OF THE INSANE.

D'Abundo[8] in a preliminatory on this subject has the following observations and results. One cubic centimetre of blood serum of sane persons, per one hundred grammes of animal weight, injected in the vein of a rabbit proves fatal. Paranoiac serum is nearest like that of sane persons. In the depressive intercurrent periods the toxicity is lowered; with excitement it is increased a trifle above normal. In melancholia the toxicity is diminished considerably, increasing with agitation. In dementia it is constantly diminished (instead of 15 c.c. it required 60 to 100 c.c. to kill). In general paralysis (also in acute mania) the toxicity was notably increased while it was diminished in the post-epileptic state (particularly stupor), imbecility, and moral insanity. In pellagrous insanity there was a slight increase of toxicity when the blood was altered at all. In idiocy there was usually no change, occasionally diminution of toxicity. The diminution of toxicity is due to general slowing of chemical changes, or the elimination of toxic products is greater, or toxicity is diminished by the entrance into the circulation of new substances or other compounds which counteracts its influence. The increase of toxicity is due to lack of equilibrium of elimination, diminished elimination, over-production of toxic matter or new substance. The bactericidal power is increased except in depressive forms.

SULPHONAL AND POISONING BY SULPHONAL.

Grill[9] warns of the danger of giving sulphonal to patients who cannot be kept continually under observation, and mentions the earlier communications on the pharmacological and therapeutic properties of this drug. He thus gives the results obtained by treating thirty-five patients (29 women and 6 men), with sulphonal at the Danish asylum at Aarhus. In all 1075.5 grammes of the hypnotic were used. Its hypnotic action was tried in nineteen patients with partly recent, and partly more chronic psychosis, and its sedative influence in sixteen restless insane. Doses of two grammes act nearly always as a certain hypnotic, and smaller doses, half a gramme, three to four times a day, have a pronounced sedative influence; yet there is a great difference in individual susceptibility. Sulphonal seems to have a distinctly cumulative action, and it is due to this that poisoning occurs. The writer has observed nine cases of poisoning, which are given in full in the original. The symptoms were those usually observed. In the milder cases there was great somnolence; in the more severe ones, digestive disturbances and paralysis of the lower extremities. In two cases albuminuria with a few hyaline cylinders was remarked. One of these, where 101 grammes of sulphonal were taken in 101 days, ended fatally; the necropsy revealed nothing. In all the cases a very dark (dark-red) color of the urine was noticed.

SULPHATE OF DUBOISINE IN INSANITY.

Lewald[10] thinks duboisine meets the desideratum of a drug to quiet excited patients that is potent, safe and easily given. Chloral is dangerous, hyoscine may cause collapse, and sulphonal is unsuitable. Ostermeyer and Preininger commend duboisine. It is soluble and best given subcutaneously. The safe and effective dose is .002 gramme. His cases were 21 women: Six of hallucinatory insanity; four, agitated dementia; three, paranoia; three, epilepsy; one, senile dementia; four, periodic mania. Mydriasis soon appears. Motor unrest ceases in ten to thirty minutes. Patient becomes quieter; talks slower and more intelligently; moves more slowly; and 75 per cent. of the patients fell asleep and so remained from two to seven hours. Some vertigo and staggering at first, due to sleepiness rather than special effects of the drug. Seventy-two per cent. slept quietly and soundly; 24 per cent. were quiet for one to three hours; and four per cent. were not affected.

Duboisine works better in women than in men. Ostermeyer found 66 per cent. (both sexes) slept; 13 per cent. were quiet. Preininger 64 per cent. (both sexes) slept; 23 per cent. were quiet. One case of paranoia was rendered more excited; pulse small (168), respiration 35, face flushed, after 0.002 grammes. Recovered under ether injections and cold application. This effect was due to action of duboisine on the heart. Hence the drug is not absolutely safe. Mydriasis and dryness of the throat are the unpleasant sequelæ.

THE ACTION OF HYOSCINE ON THE INSANE.

As the result of 914 doses of this drug, Serger[11] reaches the conclusion that "its value as a sedative is very problematical," and agrees with Granck that it is not suitable for use in the insane. Its disadvantages are: its inconstant action, variable dose, early establishment of tolerance, short duration of its action when it does act, and its unpleasant sequelæ, such as dry throat, difficulty of swallowing, hebetude and weakness, and depressing action on the heart.

"Heigh-ho!" said Mrs. Spriggins, "I see that poor old Mr. Wilkins has died intestate. I allus said high livin' would ruin his innards."

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[8] Rivistà Sper. di Fren., xxii, 529, 1891.

[9] Hospitals-Tidende, R. 3 bd. 9; and Review of Insanity and Nervous Diseases, March, 1892, p. 301.

[10] Neurol. Centralblatt, October 1, 1891.

[11] Allegem. Zeitschr. f. Psych., bd. 47.

Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Fourteenth Annual Meeting, held at Boston, June 20, 21 and 22, 1892. Dr. S. W. Langmaid, of Boston, President.

The President's Address is given in full in the last number of the Journal, page 649.

ON THE INFLUENCE OF CERTAIN DIATHETIC CONDITIONS UPON THE PROGNOSIS IN OPERATIONS UPON THE THROAT.

by Dr. D. Bryson Delavan, of New York.

It is important to discover, before operations upon the throat, the possible existence of a diathetic condition which might influence the result of the operation. The reader described several such general conditions, including the strumous, the rheumatic and the hæmorrhagic diatheses, and the diseases exophthalmic goitre and general lymphadenoma. He concluded that in the case of the two last mentioned, the removal of enlarged tonsils and of adenoid hypertrophy at the vault of the pharynx was attended with no extraordinary risk. With regard to the prognosis in strumous cases, complete removal of the offending tissue is more difficult, recovery slower, and recurrence more probable. In view of the latter, patients should be warned, in these cases, of the possible necessity for future operation. Still, the earlier such cases are operated upon, the better. In rheumatic cases, no especial difficulties are offered, and the prognosis is most brilliant. The hæmorrhagic diathesis is the most important because the most dangerous. Its presence contra-indicates all surgical interference. The only known accidents that have happened in this country in the removal of adenoid hypertrophy at the vault of the pharynx, have been in hæmophilic subjects. Adenoid enlargements are unusually common in these patients. There is no method of operating upon them, now known, that is safe. The galvano-cautery is not a reliable hæmostatic even in ordinary cases, as bleeding may occur after its use, both immediate and secondary. It should not be relied upon, therefore, in the case of bleeders. The writer urges, (1) that rigid examination as to the possible existence of the hæmorrhagic diatheses be made prior to operation upon the tonsils and adenoid tissue of the pharynx in every case; (2) that in the existence of hæmophilia, operation by any procedure at present known is absolute contra-indicated; (3) that since many of these cases urgently require relief for their throat troubles, it is most desirable that a method of reaching them more satisfactory than any heretofore practised, be suggested.

SOME PATHOLOGICAL CONDITIONS OF THE UPPER AIR-PASSAGES COINCIDENT WITH ATTACKS OF "LA GRIPPE,"

by Dr. S. Hartwell Chapman, of New Haven.

Since November, 1891, he had seen, during five months, certain secondary affections of the upper air-passages coincident with *la grippe*, and from a record of a large number of cases he had selected sixteen which were of more than ordinary interest, as the patients had previously been under treatment for other diseases from seven years to six months. Eight were cases of spinal diseases, one of diabetes insipidus, four of renal diseases, three of rheumatic gout. The onset of *la grippe* was quite similar in all these cases: headache, nausea, anorexia, flying pains, exhaustion, progressing to extreme malaise, moderate fever, pulse either considerably accelerated or greatly retarded, mild delirium, pain and stiffness in the back. He called attention to the close similarity between these symptoms of *la grippe* and the symptoms of the milder forms of epidemic cerebro-spinal meningitis. In the rheumatic cases, the affections of the upper air-passages, during the attack of *la grippe* were: in one, laryngitis crouposa, complicated with broncho-pneumonia; in two, aphthæ of mouth and pharynx, extending to the brim of the larynx. In the four cases of renal diseases, the attack of *grippe* showed the following coincident affections: sanguineo purulent naso-pharyngeal inflammation, combined with acute tonsillitis and sympathetic enlargement of the cervical glands. The swelling of the tonsils became so great as to threaten suffocation, and was relieved by cutting.

In some of them there was hæmorrhage, but not dangerous; in one, croupous-laryngitis. The duration of the naso-pharyngeal inflammation was about two months; of the laryngitis, only four days. In the case of diabetes, there was intense congestion of the entire pharynx and œdema of the larynx, which continued eight days, and markedly interfered with breathing. During the severest period of the disease the pulse, which before had been very rapid, fell to 70, and the patient was less nervous. In one of the eight cases of spinal disease, causing humpback, a form of paralysis developed which had been absent for many years; and during the attack the pulse was reduced to 50, the normal being 80. The spinous processes were intensely sensitive. In three cases of curvature of the spine, in females, the attack of *grippe* was not severe, but in all there was reduction in the rate of the pulse, extreme malaise, and very sensitive spine. Secondary affections were aphonia and purulent naso-pharyngeal inflammation.

Dr. Beverley Robinson, of New York, had not observed the complications mentioned by Dr. Chapman.

Dr. Mulhall, of St. Louis, gave some experience with œdema of the larynx in *la grippe*.

PHARYNGO-MYCOSIS.

Dr. Frederick I. Knight, of Boston, had been induced to write upon this subject because of the little attention which it had received by authors in this country, hoping to draw out a discussion. Ever since special attention had been paid to disease of the throat, observers had been struck by the peculiar obstinacy of chronic folliculitis of the tonsils, which had been not infrequently accompanied by a similar condition of the base of the tongue, and occasionally of the arches of the palate and of the pharynx. The affection consisted of whitish, yellowish or grayish exudations, situated at the mouths of the follicles, sometimes cheesy and easily removed, sometimes cretaceous, and sometimes only tough, stringy, running deep into the follicles. There was quick recurrence after removal of the products, and even after the subsequent application of strong medicaments. Frænkel had, in 1873, pointed out an abundance of leptothrix threads in such products, and some writers had looked upon the parasite as the cause of the condition. A number of other forms of parasitic growths in the throat had also been described. Other observers, notably Chiari, believed that the parasite was simply an accidental complication. In the treatment of typical cases of mycosis, the author had experienced the same difficulty as others, and found nothing satisfactory except boring deep into each follicle with a galvano-cautery point. If any of the discases were situated in a part of the tonsil which could be excised, this would shorten the treatment.

Dr. Delavan had found the treatment mentioned by Dr. Knight unsatisfactory, for enough of the leptothrix would remain to cause a recurrence. He had obtained the best results from frequent washing with borax, also bichloride of mercury, and above all correction of disturbed digestion.

Dr. De Blois, of Boston, used instrumental means, also a mild astringent, as of nitrate of silver, and gave attention to digestion.

Dr. Johnson, of Baltimore, found these cases mostly among debilitated school-children and old subjects. He used local and constitutional measures.

Dr. Mulhall, of St. Louis, had found nothing of any effect without treatment of the stomach.

Dr. Wright, of Brooklyn, said that these were fungi, and like other fungi would continue to grow as long as they received the proper food.

Dr. Chapman treated these cases locally, with fuming nitric acid, introduced through a grooved platinum needle, and internally by nitro-muriatic acid.

Dr. Beverley Robinson had not seen many cases, but in one failed to effect a cure with various remedies until the patient went to Sharon Springs.

Dr. Langmaid did not object to correcting any constitutional condition, but regarded local mechanical measures necessary.

A CASE OF FIBROUS EPITHELIOMA AT THE ROOT OF THE TONGUE.

Dr. Jonathan Wright, of Brooklyn, read the history of this case on account of the interest connected with the diagnosis, which was extremely difficult, and because of the rare form in which the disease presented itself. When he first examined the patient, the tongue seemed normal except for two prominences on each side, at the base, which felt hard and firm. Grave doubts were entertained as to their exact nature for several months: finally, Dr. McBurney operated for cancer, but by this time an ulcer had formed, which went to make the diagnosis more evident. The patient did well for a time, but finally died, without, however, a recurrence.

REPORT OF SOME CASES OF MEMBRANOUS SORE THROAT.

Dr. Beverley Robinson, of New York, made three cases the basis of a paper on membranous sore throat. He used the term "membranous sore throat" advisedly. In the three cases reported, there was great difficulty of diagnosticating between true diphtheria and a membranous sore throat of some other origin. The bacteriological examination, however, failed to reveal the Loeffler bacillus while streptococci were present in greater or less abundance. The author pointed out the fact that failure to find the Loeffler bacillus did not necessarily disprove the existence of diphtheria. He impressed the fact that a membranous sore throat of a simple character compared with diphtheria might exist, and one still be in great doubt as to diagnosis. Where such doubt existed, he claimed that it was unwise to prematurely make a diagnosis of true diphtheria, and cause the family the alarm and trouble which such an announcement would necessarily imply. At the same time certain precautions could be taken against unnecessary exposure of the well. He especially objected to sulphur fumigations. The treatment, however, might be carried out with all of the precautions which one would take in a case of true diphtheria. In this direction he spoke highly of the use of powdered cubebs, taken in small pinches into the mouth at frequent intervals. He must acknowledge, however, that the antiseptic powers of cubebs in the destruction of the Loeffler bacillus had not been proven, at least outside the body. He condemned the custom of the health-officers in some sections, of posting houses with diphtheria, as if persons passing such houses and not entering them were liable to take the disease.

Considerable discussion followed, and a resolution was adopted, making as a subject for discussion at the next annual meeting, "The Best Means of Protecting the Public against the Spread of Diphtheria."

PRESENTATION OF INSTRUMENTS.

Dr. Morris J. Asch, of New York, presented a tampon for use after operations for deviation of the nasal septum. The tampon consisted of a hard rubber-tube, with perforations. Dr. Asch also presented a set of Dr. Dessau's antiseptic electrodes and curette for adenoid growths.

Dr. D. B. Delavan, of New York, demonstrated a new method of administering iodide of potassium in cases of tertiary syphilis of the throat, where the ulceration had become so severe that the patient could not swallow with ease. The method consisted in peptonizing the milk with the essence of pepsin, in which the iodide of potassium was to be administered.

Dr. J. Wright, of Brooklyn, presented an improved forceps for the removal of adenoid growths in the post-nasal space.

Dr. John O. Roe, of Rochester, presented an improved Adam's forceps for straightening the nasal septum. It possessed the advantage of enabling one to over-correct the deformity.

Dr. C. H. Knight, of New York, showed an improved snare for removal of the tonsils with a ring-safeguard.

Dr. J. W. Farlow presented a form of adenoid forceps, which he had purchased in Paris, and had found an excellent instrument for removal of adenoid growths in children and adults.

INTUBATION FOR CHRONIC STENOSIS IN A BOY OF TEN.

Dr. C. H. Knight, of New York, read the history of this case. The boy was admitted to the hospital in October, 1891, and, according to the statement of his physicians, he had been ill for a week or more with dyspnœa, aphonia, cough and fever; there was a history of bad hygiene and poor diet. When admitted, the patient could not whisper, and his breathing was quite noisy and labored. A marked feature in the case was that the dyspnœa was decidedly more marked at night. It was relieved by inhalations of oxygen. The boy's condition grew worse; and on November 8th, Dr. Jarvis examined him and thought he found a neoplasm beneath the vocal bands. The vocal bands were red, and did not approximate on phonation. Beneath the cords, extending along their entire length and invading the anterior commissure, was a mass of tissue, paler in color than normal mucous membrane, having an uneven and, at certain points, an almost papillated surface. No ulceration could be discovered. The air passage was converted into an irregular slit, so narrow as to excite surprise that adequate respiration was possible. Owing to dyspnœa an O'Dwyer tube was introduced, which was worn more or less for many weeks. It was impossible to get sufficient of the pathological tissue to make a satisfactory microscopic examination. Dr. Knight's first impression of it was that it was tubercular, but the absence of pulmonary signs and the marked change for the better subsequent to intubation, pointed to simple subglotic papilloma. After about three months, the boy having got along well with the tube (which was worn only part of the time) he was transferred to the surgical division for tracheotomy, thyrotomy, and radical extirpation of the neoplasm, the idea still being that it was a purely local affair. From this time the patient's progress was rapid toward death from general tuberculosis.

The points of interest were: (1) The simplicity of intubation as compared with tracheotomy, and the ease with which the tube was extracted with the aid of cocaine and under the guidance of the mirror; (2) the slight amount of disturbance excited by the tube, and the absence of objection to its prolonged retention. Finally, the question suggested itself, Was it a case of primary laryngeal tuberculosis? He believed the patient was much more comfortable than he could have been with the tracheal instead of the laryngeal tube.

RARE FORMS OF LARYNGEAL GROWTH.

Dr. Alexander A. MacCoy, of Philadelphia, in a paper with this title, described two cases, one of myxoma of the larynx, which had come under his care in 1888; the other of fibroma of the larynx. The former condition was quite rare; the latter, not so infrequent. The myxoma seemed to have its origin from the margin of the orifice of the ventricle. The patient's voice was completely restored after its removal. In the other case, most of the growth was removed by the cold snare, and the remaining part would be operated upon later. It appeared to have sprung from the anterior and right surface of the arytenoid cartilage.

A CASE OF TUMOR OF THE LARYNX.

Dr. H. L. Swain, of New Haven, related the history of a case of fibro-myxoma of considerable size, attached by a pedicle to the anterior commissure of the vocal cords. He pictured the difficulties which he had encountered in removing this large growth, whose base was spread out over a greater surface than he had supposed. Its removal had been followed by relief of the difficulty connected with phonation and respiration, and the patient had remained free from recurrence two years.

Dr. C. C. Rice had found the guillotine snare more easily applied in the removal of small laryngeal growths than the forceps. He also mentioned having had syncope follow the use of four per cent. of cocaine in the throat, in the case of a policeman, recently.

Dr. Langmaid had, on the recommendation of a European author, used nicotine in operation for growth in the larynx in one case, and very threatening poisonous symptoms developed.

THE VALUE OF SPRAYS IN THE TREATMENT OF CATARRHAL AFFECTIONS OF THE UPPER AIR-PASSAGES.

Dr. C. C. Rice, of New York, said that in discussing this question it was not his object to recommend the spray as a method of treatment to take the place of others. He considered the question of the use of sprays in the form of medicated oily agents, of watery solutions, of astringents, etc. While remarking upon some of the advantages of petroleum preparations, he at the same time pointed out the danger of their inconsiderate use, in that they were followed by a dry condition of the nasal passages, which was anything but agreeable. Such antiseptics as iodoform and aristol lost much of their antiseptic properties when used with oily agents, nor could their stimulating action be so well relied upon when thus used. In catarrhal affections of the upper air-passages, nice judgment was required in selecting the drug and particularly the strength of the solution to be used as a spray. The pressure used, and the temperature should be adapted to the particular case, and the location to be reached by the spray. A weak solution of cocaine, say less than one per cent., was, perhaps, as good an astringent as any, and its place could seldom be taken for any purpose by such agents as morphine, aconite, etc. So far as the degree of pressure was concerned, fifteen pounds to the square inch was strong enough for the anterior nares, while twenty-five to thirty pounds was sufficient for post-nasal spray. All possible combinations could be made with cocaine, menthol, thymol, etc. By such treatment he believed that one could diminish the number of operations for nasal disease.

Considerable discussion followed, in which Dr. Bosworth, of New York, spoke rather disparagingly of nasal sprays as anything else than a cleansing measure, while Drs. Mackenzie, of Baltimore, Asch, of New York, and others, were inclined to give it a greater degree of credit.

THE CORRECTION OF DEFORMITY RESULTING FROM ABSCESS OF THE NASAL SEPTUM.

Dr. John O. Roe, of Rochester, presented photographs illustrating the results of a new method for correcting this deformity which he had found very successful in two cases. The method adopted by Tagliacozzi, and in use at the present time, consisted in the correction of the defect by a rhino-plastic operation. A serious defect, however, in this method, was the unsightly scar resulting from the operation, which was sometimes scarcely less pronounced than was the original deformity. Five years ago Dr. Roe had submitted to the profession an operation for the correction of the deformity termed pug nose by a subcutaneous incision, without, in the slightest degree, wounding the skin; and again in 1891, an operation equally new for the correction of angular deformities of the nose by subcutaneous incision. At the present time, he wished to present a simple method by which the deformity frequently resulting from abscess of the nasal septum might also be corrected by a subcutaneous and intra-nasal operation. In the case detailed, after considering the various devices to accomplish this purpose without injury to the skin, he adopted the following plan. There was as usual in these cases marked thickening and widening of the dorsum of the nose proportionate to the amount of flattening. This thickened ridge of tissue was incised on both sides a short distance from the septum at a point where it thinned into the alæ. The incision was made along the edge of the flattened tissue through the cartilage of the alæ to the under side of the skin, care being taken not to wound the latter which was raised from the dorsum of the nose, and these flaps then turned upward and held in place by small ivory spring plates on each side, having holes through which sutures were passed from one to the other, extending through the flaps. These threads were then tied so as to hold the flaps firmly in place, care being exercised not to strangulate the parts. These relieved the flattened condition of the nose, but not entirely. Owing to the entire absence of the triangular cartilage there was not sufficient support to hold the nose upright. In order to increase the solidity of the septum, he first scarified each side of the lower portion of the septum, leaving, however, the front portion of the skin intact. He then cut wide, thick flaps from the floor of the nostril opposite the portion of the septum which he wished to render more rigid. These he turned upward and fastened together with clamps, in the manner similar to the upper flaps, and also connected the upper border of the flaps to the cut portion of the septum with fine sutures. The result was excellent. To maintain the nose in position until the parts healed, he used a small spiral spring.

THE AFTER-RESULTS OF NASAL CAUTERIZATION,

by Dr. T. A. DeBlois, of Boston.

Owing to the difficulty of tracing patients upon whom operation had been performed which may not have proven ultimately successful, he gave the history of five or six in which he or others had cauterized the nose two or more years previously. In most of them the cauterization had been for an hypertrophied condition of the turbinated bone, and the immediate result, as far as relief of the symptoms was concerned, had been more or less successful. Two years subsequently the patient had returned, again complaining of nasal obstruction. A rhinoscopic examination had shown, in some, on either side of the original scar left by the cautery, a swollen and projecting mucous membrane which blocked up the nasal passages. In another case, a somewhat remarkable one, the mucous membrane which was thrown in corrugated folds, had been cauterized frequently at different hospitals. Some of these cases, and doubtless many others walking the street, showed that the cautery might fail of the desired effects by improper application, such as, on the one hand, making the scar-tissue too deep or, on the other, too shallow; and, again, of extending it through too great a distance or not far enough.

A somewhat lengthy discussion followed, which was devoted mostly to the immediate results of bad usage of the cautery. The efficacy and safety of this method of treatment in cases to which it was adopted was dwelt upon by Drs. Wright, Langmaid, Mulhall and others.

A CASE OF SUPPURATING ETHMOIDITIS.

by J. H. Bryan, of Washington, related the history of a case of suppuration of the ethmoid cells, terminating in caries, and illustrating the condition described as rhinitis caseosa. The patient gave a history of having suffered from caries of an upper molar tooth. In July her nose became closed, the secretions, at first watery, became thick and fetid. There was pain over the bridge of the nose, extending along the infraorbital ridge to the temporal region. Severe headache, pain on pressure of the eyeball, crepitating sensation under the orbit. On the left side of the nose was seen two mucous polypi attached to the anterior extremity of the middle turbinated bone. After snaring off the polypi, the thick caseous secretion was observed to come from both the middle meatus and from above, between the middle turbinated body and the septum. Examination with the electric light showed the left antrum to be opaque, showing this to be complicated with the inflammation of the ethmoid cells. In spite of treatment, the conditions grew worse until, on her way to his office, the abscess discharged spontaneously a great quantity of thick caseous secretion. After which the pain ceased and general health improved. The complications of suppurating ethmoiditis more frequently met with were abscess of the antrum; abscess of the orbit; and meningitis. In the above case, the antral complication was purely accidental, dependent upon a carious tooth.

The following officers were elected: President, Morris J. Asch, of New York; First Vice-President, S. Johnston, of Baltimore, Second Vice-President, J. C. Mulhall, St. Louis; Secretary-Treasurer, C. H. Knight, of New York; Librarian, T. R. French, of Brooklyn; Member of Council, S. W. Langmaid, of Boston.

Place of next meeting, New York, last week in May.

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AMERICAN MEDICAL ASSOCIATION.
SECTION ON SURGERY AND ANATOMY.

(Concluded from Vol. CXXVI, No. 26, page 666.)

THIRD DAY, THURSDAY, JUNE 9th.

IS AMPUTATION EVER INDICATED IN COXITIS?

was the title of a paper read by Dr. Herman Mynter, of Buffalo, N. Y.

He said excision is gradually superseding primary amputation, and would only consider secondary operation, when caries has recurred and the discharge increased. The apparent recurrence is in all probability only a continuance of the original trouble, and a useless joint would result unless the entire diseased shaft was removed. Two cases were cited to demonstrate the benefit of removing all of the diseased structure, plugging the acetabulum with iodoform gauze, and drainage for several weeks through a counter-opening made posterior to the original incision. Good movable joints, with one and one-fourth inches of shortening, respectively, was the result.

Dr. Ridlon said in the majority of cases, the trouble began outside of the joint, in the bone, and the extreme difficulty of locating the focus of the disease raised the question as to immediate operation or awaiting the results of local treatment. Unquestionably, if the patient is growing worse, he should be operated upon without delay. Unless we are able to remove all diseased tissue without a relapse within the period in which wounds usually heal, it is an open question whether the operation, with chances of septic infection, should be taken. Personally, he is prejudiced against operation, unless as a life-saving measure.

Dr. Andrews, of Chicago, thought that, in the majority of cases, after suppuration had commenced, excision was the best way out of the difficulty. However, cases that have done well without excision have shown that it is not absolutely necessary to life, but such cases undoubtedly recover more rapidly after the operation. He favors operation, but there are exceptions to all rules.

In closing the discussion, Dr. Mynter, thought his excellent results due to the great care in removing every portion of the diseased tissue. He believed packing with gauze and allowing the wound to heal by granulation, superior to primary union.

THE CREMASTERIC REFLEX IN VARICOCELE,

by Dr. T. A. McGraw, of Detroit, Mich.

The cause of varicocele has never been satisfactorily explained. The recognized causes are, a peculiar formation of the veins in the vicinity, great muscular action, and excessive venereal excitement, yet many men, subject to all the causes enumerated, escape. Local injuries, rendering the vessels incapable of forcing the blood onward to the heart, are undoubtedly a cause. In some there appears to be a predisposition to a varicose state of the veins. These may be regarded as incurable. The assistance given to the general venous system by the related muscles is well understood. but the fact that the circulation through the spermatic veins is almost entirely dependent on muscular contraction appears to have been forgotten. Were it not for this contraction, all men would have a varicocele. The cremaster muscles are the chief ones concerned. They cannot contract without squeezing the blood out of the veins, and this is undoubtedly their true and only important function. The force is from below upwards, and the contraction probably proceeds from the irritation excited in the veins by their distention. Later in life the venous walls become more unyielding and can better afford to be without support. A vigorous young man powerfully contracts his abdominal muscles, and if at the same time the cremaster muscles contract in a like manner, the blood, shut off, must either burst the vein or stretch it beyond repair, causing either hematocele or varicocele. These muscles vary in different men and in some cases are apparently entirely absent. Cases of varicocele ascribed to excessive venereal excitement are probably due to a paresis of the cremasteric nerves. While in a few cases the cremasteric reflex may be quite normal, the majority of such cases show a decided disturbance in the mechanism by which it is engendered. Dr. McGraw does not think hernia has the power of producing varicocele. His summary is as follows:

(1) The pathology of varicocele is variable; cases differ both in cause and pathological conditions. (2) In one group of cases, the vein-walls are at fault, having been weakened by injury or from congenital or acquired disease. (3) The primary diseases involve either the cremaster or the nervous mechanism controlling it; these cases show a marked deficiency in the cremasteric reflex.

In reply to a question from Dr. Mynter, of Buffalo, if the knowledge that the cremaster muscle may influence the production of varicocele would have any bearing on the treatment, he said it depended whether paralysis had anything to do with the varicocele or not, if so, electricity might be of service, but if the muscle was absent, removal of the scrotum would be the best treatment. This support, however, would not replace altogether the intermittent support of the cremaster muscle.

Dr. De Garmo, of New York, cofirmed the two points made. He carefully watched the effects of pressure and saw many cases of hernia and did not believe either effected varicocele. He could recall no varicocele coming on late in life, and never saw one caused by strain. He had had a case of combined hernia and varicocele which was subsequently operated upon by another surgeon for the varicocele and the hernia was cured.

In closing the discussion Dr. McGraw called attention to the fact that his paper was solely upon the pathology and had nothing to say about treatment.

VISCERAL PHLEBOTOMY,

by George Harley, of London, Eng., read by Dr. F. W. Mann, of Detroit, Mich.

Two cases were reported. In the first case the liver was punctured to a depth of eight inches in a patient dying from a greatly enlarged, hard, and inflamed liver, ascites and marked anasarca. Recovery followed with no relapse. In the second case, the liver was enlarged, inflamed, and contained strumous abcesses; it was also punctured. Great hæmorrhage followed through the bile-ducts into the intestines. The liver decreased in size and a perfect cure resulted.

Pulmonary phlebotomy, owing to the constant movement of the lungs making it difficult to close the wound, is the most difficult form of visceral phlebotomy. He advocated visceral phlebotomy on every accessible internal organ as being far superior to leeching or cupping.

ADVANCES IN ASEPTIC SURGERY,

by Dr. F. J. Thornbury, of Buffalo, N. Y.

GUNSHOT WOUNDS OF THE CEREBRUM,

by Dr. C. E. Ruth, of Muscatine, Ia., demonstrated by several cases that a bullet can be probed for and successfully removed from the brain, and with due precaution the normal brain tissue should not be punctured in the search. He exhibited several instruments made especially for the purpose. After many operations and experiments in this line the following conclusions were arrived at:

(1) A ball can be followed in its course through the brain.

(2) Having been followed to its point of impact on the opposite side of the skull, a trephine disc should be removed to establish drainage and remove the ball, if possible.

(3) The probe giving the maximum resistance to penetration with a minimum lateral friction on its shaft by the collapsed canal, is the best.

(4) A hemispherical front porcelain-tip and an aluminium shaft answer the indications for lead detection required in a probe, better than anything else.

(5) No one should follow the course of a ball through the brain without acquiring a thorough knowledge of the resistance offered by normal brain tissue to the penetration by the probes he makes use of, that he may know when he is applying force within the limits of safety.

(6) He should grasp and remove balls and pieces of bone frequently, on the cadaver, before attempting it upon the living human subject.

AIR IN THE VEIN,

by Dr. Edward Martin, of Philadelphia, was based upon experimental work on dogs and monkeys. He found it impossible to have animals aspirate air into the veins. Owing to the vein-walls collapsing it was impossible to have air sucked-in in the case of a dog, even when the jugular vein was opened and a vacuum created in the chest, providing the vein is not hardened by disease, nor artificially kept open. A few bubbles of air did no harm. With the monkey the result was different causing death in about half an hour after the air was aspirated, while with the human subject, the aspiration of air was one of the most disastrous accidents that could happen. He once wounded the axillary vein and though he heard two or three suction sounds, but as no evil result followed, he was convinced that it was due to air in the tissues and not in the vein. As to treatment, nothing has been added to the suggestions contained in the writings of Senn. The treatment is simply mechanically controlling the circulation from the wound to the heart.

TALIPES EQUINO-VARUS.

Dr. B. Merrill Ricketts, of Cincinnati, read a report of a case, of a boy fourteen years old, in a most aggravated form.

The foot turned straight backward, bringing the weight of the body directly on the astragalus. The plantar surface was thrown upward so that the only under surface of the toes touched the ground in the erect posture. At birth the left foot was in as bad a condition as the right but by proper treatment the deformity was corrected. The ankle-joint of the left foot allowed more than a normal extent of motion in all directions.

The operation consisted of an incision from the lower extremity of the fibula in the direction of the lower extremity of the tibia, exposing the ligaments and tendons of the joint. These tissues were crowded aside and the astragalus removed. It was greatly deformed having lost all its outlines. What remained of the Achillis tendon was very dense and it was necessary to divide all posterior tissues, to bring the foot forward in its normal position. It was necessary to divide the plantar fascia and the foot was retained in position by means of straps, but causing too much pressure they were removed at the end of the fourth day.

Once the temperature rose to 104° F., but after the tenth day it remained below 100°. At the end of four weeks he moved about on crutches and was discharged from the hospital at the end of ten weeks. He is now wearing a shoe and goes about without the aid of crutches.

Dr. Ridlon, of New York, said that while some claimed that all cases could be cured by stretching and dressing and others by tenotomy, there are cases of congenital club-foot absolutely requiring excision of the astragalus, and cited a case where after both these methods had failed, the astragalus was removed and found to be wedge-shaped posteriorly. After excision the result was satisfactory.

Dr. Sayre, of New York, did not claim all cases could be cured without removal of the astragalus; but he had never seen a case requiring excision. The bones being at first soft and malleable, if the foot is put in the correct position they will be moulded. In cases from twenty-six to forty-six years of age, without treatment from childhood, dividing the ligaments and all holding soft tissues, and requisite force employed in putting the foot in the normal position, had proved sufficient. No case was cured unless it was retained in position without apparatus. Operation may be desirable where the patient cannot afford the time necessary for the slower treatment.

AMPUTATION OF THE SCROTUM AND CIRCUMCISION,

by Dr. B. Merrill Ricketts, of Cincinnati.

An American, twenty-two years old, well developed, of nervous temperament, no syphilitic taint or predisposition to tuberculosis, had enlargement and thickening of scrotum and prepuce. Papillomatous growths covered the parts, with an occasional angioma. These growths also existed on the right leg. Upon removal of a bandage which had been worn for some time the leg swelled to twice its normal size, with a glistening appearance. If the growths were disturbed or the skin punctured, from five to thirty ounces of lymph exuded. This fluid was of a cream color and consistency and slightly tinged with blood. It was bitter, and crystallized on evaporation.

His trouble dated from an abscess in the right groin at the age of eighteen months. Had annually three or four chills followed by a temperature of from 103° to 104.2° lasting twenty-four to forty-eight hours. Enlargement of the limb, loss of appetite, inactive mind, glassy eyes, constipation with great tenderness in and about the right iliac fossa, always preceded these attacks. The glands in this region were very much enlarged. Operation was advised and accepted, with the understanding that circumcision be first performed and should it be followed by any bad symptoms, the scrotum would not be operated on. Two months after circumcision, scrototomy was performed without difficulty. During the year following there were two or three chills, followed by fever, but he gained in flesh. The operation was more as a palliative rather than a curative measure.

NEURECTOMY OF THE GREAT SCIATIC NERVE FOR PAINFUL NEUROMA AS THE RESULT OF A GUN-SHOT INJURY,

was the title of a third paper by Dr. B. Merrill Ricketts.

The man suffered excruciating pain for two years, and had been taking a maximum of fifteen grains of morphine, hyperdermatically, daily. The ball passed obliquely, three or four inches above the condyle anteriorly to the biceps tendon, upward at an angle of forty-five degrees, and passing out about the middle of the thigh externally. An incision, four inches long, was made in the median line, exposing the nerve, which was three times its normal size for a space of one and one-half inches. The nerve divided much higher than usual, so that it was necessary to divide one branch only. The internal branch was the one injured. A section, one and three-fourths inches including the enlargement, was made, and the leg strapped in a flexed position. A drainage-tube was inserted and the wound sutured. At the close of the third day the tube was removed, and the cutaneous sutures at the end of fifth day. There was but a slight rise of temperature during the course of recovery, and the pain gradually subsided. The morphine was withdrawn and after the twelfth day he was about on crutches and was discharged on the twenty-second day free from all pain and the morphine habit.

FORCED RESPIRATION. FELL-METHOD OF FACE-MASK AND TRACHEOTOMY IN DIPHTHERIA,

by Dr. George E. Fell, of Buffalo, N. Y.

The case reported was a boy seven years of age, suffering from diphtheria, and upon whom Dr. Fell performed tracheotomy. The patient was rapidly becoming cyanotic, and being unconscious, anæsthetics were unnecessary. Before completion of the operation asphyxia was indicated by rapid dilatation of the pupils, and the forced-respiration apparatus was applied five or six times during the operation to prevent asphyxiation. It was necessary to employ forced respiration through the tracheotomy tube for some time before he regained consciousness. Hydrogen dioxide was freely used in the mouth, nasal cavities and tracheal incision, relieving the great dyspnœa by liquefying the membranes in the bronchial incision. It was necessary to apply the forced respiration in some instances to overcome the cyanosis. The exudation continuing to interfere with respiration, he succumbed sixty hours after the operation.

ILLUSTRATION OF METHODS OF OPERATING IN HERNIA.

Dr. H. O. Marcy, of Boston, gave a stereopticon exhibition of the various methods. His pictures were from Sir Astley Cooper, Langenbeck, Scarpa, and Bougeray.

TREATMENT OF COMPOUND FRACTURES,

by **Dr. W. H. Myers**, of Fort Wayne, Ind.

Particular stress was laid on antiseptic and aseptic treatment, showing great decrease in mortality since their introduction. He does not believe in drainage. After a thorough antiseptic cleansing he closes the wound, applies several layers of bichloride gauze and finally applies a plaster-of-Paris bandage for the purpose of securing absolute rest. A surgeon should not resort to amputation too hastily as is often the case, especially along railway lines. He gave the history of a case in which two and one-half inches of the tibia were carried off. Four pieces of bone were removed and carefully replaced after the wound had been cleansed. The immovable dressing was applied for twenty-eight days. Recovery was uninterrupted and most satisfactory.

Dr. Ricketts, said a surgeon had a right to an exploratory incision in doubtful cases. In compound fractures, if the dislodged bone can be returned and union secured, there is no reason why, when there are several fragments, the surgeon should not cut down and wire the pieces. In the majority of cases wire should be used to keep the pieces in position.

Dr. Ridlon, of New York, said some surgeons claim bones will not unite if the periosteum is not in place. This he could not understand, when, in abdominal surgery, portions of the peritoneum are cut away and nothing thought of it.

Dr. North, of Michigan, strongly opposed the use of the knife where it can be avoided, even where the products of ulceration flow out of the wound, as it is often possible to perform a successful operation even after the lapse of a year.

Dr. Ricketts called attention to the fact that buttons of bone, without the periosteum, are returned to the skull and union takes place.

Dr. Griffith used chips of decalcified bone and bone developed from them, therefore he did not think the periosteum was necessary.

Dr. McCaul, of Michigan, had a perfect union take place with a returned trephine button without the periosteum.

Dr. Emmet, of Iowa, had used Senn's decalcified bone-grafts with perfect success.

The Chairman, **Dr. Gaston**, said his experience confirmed the views just expressed.

Dr. Emmett related a case of a seriously injured foot and where the patient refused amputation. Gangrene setting in a knee amputation was necessitated. The man sued the physician for $5,000, — winning the suit which was sustained by the Supreme Court on the ground that the patient was not the one to know whether an operation was necessary or not and the physician should have used his own judgment.

Dr. Duffield, of Detroit, thought that decision places a surgeon in a peculiar position and would advise in such cases to call counsel, tell the patient of the decision, and if he refuses, let him get another surgeon.

Dr. North inquired what should be done if in spite of all treatment, non-union continues.

Dr. Ricketts thought large doses of mercuric chloride, internally, would cause bone union.

Dr. Myers sawed off the extremities of the bone and nailed them together.

Dr. Ridlon, in two cases, put the limb in position and rendered it immovable. Then by constricting the limb above the seat of injury produced œdema about the injured part and both cases resulted in perfect bony union.

The question was further dicusssed by **Drs. Milton**, of New York, **Graves**, of Michigan, and the Chairman.

THE POWERFUL EFFECT OF SULPHONAL IN ARRESTING THE CRAMPS OF FRACTURED LIMBS AND OTHER REFLEX SPASMS.

by **Dr. Edmund Andrew**, of Chicago.

He first noticed this effect in a recently fractured femur. Fifteen grain doses arrested the spasms in this case. Another case was a slight fracture of the spine. The same doses of the drug had a similar effect in this case also.

In nocturnal spasms the drug should be given two hours before sleeping time. Eight grains three times a day having produced a cessation of nocturnal emissions, perhaps it might act well in premature ejaculations in copulation. It also stopped two cases of obstinate hiccough. Fifteen grains before retiring relieved a long standing case of nocturnal cramps of legs and thighs, in ten weeks, no longer requiring the remedy. Two fifteen grain doses arrested a painful jerky movement of thigh and leg resulting from contusion of the sciatic nerve. It appears that the anti-spasmodic power of sulphonal is of greater importance than its hypnotic influence.

Dr. Andrew's experience with sulphonal was supolemented by similar experiences by **Drs. Brooks**, of Iowa; **Murphy**; **James A. Work**, of Indiana; and **J. P. Strittmater**, of Philadelphia.

AMPUTATIONS IN THE LIGHT OF MECHANICAL SCIENCE VERSUS PROTHETICAL SCIENCE,

by **Dr. S. L. McCurdy**, of Dennison, Ohio.

He thought joint ampuations made better stumps than amputations above the joints, giving as his reasons: (1) The broad articular extremities of the bones made better stumps. (2) The knobs found at the knee by the condyles and at the ankle by the malleoli formed points for the socket adjustment, and prevented the objectional motion of a cone-stump. (3) Artificial-limb makers can and do make limbs for disarticulations.

He thinks the Syme's operation affords the best and most comfortable stump. Artificial-limbs should have the bearings upon the four following points: (1) The ankle; (2) The knee; (3) Below the knee, or about the head of the tibia; (4) The perineum.

DR. ANDREW requested information regarding an artificial foot after Pirogoff's operation, to which DR. McCURDY replied by saying Pirogoff's operation should never performed, but even for this a good foot could be made.

DR. KING, of Missouri, disagreed with nearly every point made in the paper, basing his objections upon a large personal experience in railroad surgery.

DR. CRAIG, of Pennsylvania, fully agreed with Dr. King. Saving the joint after removing the ball of the foot would make a permanent cripple of a man, and thought that in foot amputations near the ankle joint, it would be better to amputate midway between ankle and knee.

COSMETIC SURGERY OF THE NOSE,

by DR. JOHN B. ROBERTS, of Philadelphia.

He said that many sufferers put up with unsightly deformities on account of their ignorance of what could be done for their relief. Slight operations often made a remarkable change in the personal appearance of a patient. In operating, external wounds could be made unnoticeable, and many operations could be done within the nose by way of the nostrils or through the mouth under the upper lip.

Cosmetic surgeons should remember the frequency of tertiary syphilis of the nose and avoid excising a gumma and allowing destruction of the nose from syphilitic ulceration. All sorts of crooked and twisted noses he claimed were amenable to treatment. The method of inserting metallic bridges as a substitution for the bony bridge in sunken noses was given in detail.

OPERATIVE PROCEDURES AT THE BASE OF THE BRAIN,

by DR. ERNEST LAPLACE, of Philadelphia.

He said that the three fossæ of the skull were separate and on a different plane from each other, but each could be reached by trephining. For the anterior fossa, the trephine should be applied immediately above the supra-orbital arch, at its junction with the temporal ridge.

The dura is separated by malleable platinum-wire instruments, flat and wedge-shaped which can be gently pushed over the rough surface of the skull, and reach all parts of the floor of the fossa.

For the middle fossa, the trephine should be applied on a line extending from the middle of the zygomatic process to the external angular process of the frontal bone.

For the posterior fossa apply the trephine immediately above the external occipital crest to the right or to the left. This will expose the cerebellum below the lateral sinus. All these operations were successfully performed upon dogs. The chief advantage is thorough scientific drainage in cerebral injuries. Hæmorrhage should be controlled by packing with iodoform gauze, or gnawing off the edge of the bone and applying the hemostatic forceps. Strychnine will restore physiological equilibrium. He cited the case of a boy in illustration of the principles outlined. The boy ran a fencing-foil under his left eye through the sphenoidal fissure into the brain. He lost consciousness and aphasia and right hemiplegia followed. Fifteen days afterwards the middle fossa was reached by trephining and the platinum-wire instrument insinuated as far as the cavernous groove, withdrawing about a teaspoonful of clotted blood. This was followed by rapid improvement and terminated in a complete recovery. One very remarkable feature was the amount of serous oozing from the trephine opening, indicating great intra-cranial tension.

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THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING, April 9, 1892.

DR. R. PROVAN reported by invitation,

A CASE OF EXTREME DYSPNŒA AND CYANOSIS, BEFORE, DURING AND AFTER LABOR.[1]

DR. C. M. GREEN said it was certainly a most remarkable case, the chief interest being in the diagnosis. This Dr. Provan and Dr. C. E. Stedman had already made before he saw the case, that there was a small embolus in the lungs. He could recall one case similar to it where intense dyspnœa began with the labor in a case of twin pregnancy, and resulted fatally just as he extracted the second child. Thrombosis of the heart or embolism of some large pulmonary vessels occurred in this case. In Dr. Provan's case the patient was extremely cyanotic, the dyspnœa was intense and the extremities were cold. It seemed, therefore, altogether too serious a case to refer it to the class of asthma gravidarum, which is of functional nature. He could not help thinking, therefore, that embolism was the cause of dyspnœa in this case.

DR. A. D. SINCLAIR said that it was certainly a case of great interest, and he does not feel at all sure of the diagnosis, although embolism seems the most probable one. There was a certain amount of congestion and œdema of the bases of both lungs.

DR. C. E. STEDMAN said that it often happens that very little can be found in the lungs in cases of embolism. Her spasmodic breathing was not relieved by ether, and her condition was as critical after labor as before. The diagnosis of embolism is suggested more than it is maintained.

DR. PROVAN said that her present condition was still critical, the dyspnœa had improved but little. In answer to questions, he said that the urine was improved in quantity and quality. At one time, the patient passed only about eight ounces in the twenty-four hours.

DR. C. W. TOWNSEND suggested the possibility of the renal origin of the dyspnœa. The dyspnœa in these cases even without much œdema of the lungs is sometimes very marked. He had just come from seeing a patient, a man with interstitial nephritis, who has for some weeks had severe dyspnœa, owing to the renal condition. It is possible that in Dr. Provan's case the renal dyspnœa may have been added to by pulmonary embolism.

DR. S. L. ABBOT asked if Dr. Provan's patient had

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[1] See page 11 of the Journal.

had during the recent epidemic any symptoms of influenza. He had been struck with the resemblance of the symptoms to those of cases of tachycardia, which he had recently seen, which he could ascribe to no other cause. Notably one of very great severity, in which the heart-beat was as high as 200, with very great dyspnœa, without a sign of organic heart disease, and which continued long enough to cause considerable œdema of the lower extremities. He had never before seen such persistent, severe dyspnœa. The statement of Dr. Provan impressed him strongly with the conviction that his case was one of weak heart caused by influenza. Such symptoms may follow a very slight manifestation of the epidemic influence, to which the patient attached no special significance.

Dr. Provan said that the patient had not had influenza. The phlebitis of the arm began on the sixth day, and was attributed, probably without reason, to the patient having been frequently raised in bed by the shoulders.

Dr. R. W. Lovett read, by invitation, on

THE SURGICAL ASPECT OF PARALYSIS IN NEW-BORN CHILDREN.[2]

Dr. C. M. Green said that he had seen three cases of paralysis of the arm at birth, one being the case referred to by Dr. Lovett as occurring at the Boston Lying-in Hospital. The second one occurred in a case following difficult version eight years ago, and was due to a dislocation at the shoulder. He lost sight of the case and does not know the ultimate results. In the third case the arm hung useless, and he asked Dr. Post to see the baby. Dr. Post could detect no fracture of the arm or clavicle, but he thought it best to treat it as such with a bandage. There was complete recovery.

Dr. Sinclair said that there must be some peculiar liability to the trouble on the part of the child, for so many children are pulled about violently during delivery without causing any bad results.

Dr. S. L. Abbot referred to a case in an adult with paralysis of this sort. The forearm was very strong, but the patient was unable to raise it.

Dr. C. W. Townsend said that he had seen a fracture of the clavicle and also of the humerus from injuries at birth. In both cases recovery was complete without paralysis.

In the case Dr. Lovett spoke of, referred to by him, the humerus was said to have been broken at birth.

Dr. R. W. Lovett said that there was no history of fracture in any of the other cases.

Dr. E. J. Forster mentioned the case of a young lady of eighteen, with obstetrical paralysis, for which she had received much treatment with no benefit.

Dr. J. G. Blake had seen two cases of this affection. In one of them the blunt hook had been used to get out a shoulder, and although there was no bruising or fracture, paralysis occurred, and still continued at the end of a year. The second case was of cerebral origin. It occurred after a short easy labor, and followed convulsions. In this case there was a displacement of the right parietal bone, which still persists although the child has recovered from the paralysis.

(To be continued.)

An International Congress of Dentists will be held at Chicago, in August, 1893, during the World's Fair.

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ANNUAL REPORT OF THE BOSTON CITY HOSPITAL.

The present report of this institution is an uncomfortable one for purposes of comparison with its predecessors, as it embraces a year of thirteen months, a result necessitated by an attempt to make the departmental year and the municipal fiscal year, previously different, correspond.

During the official year of thirteen months, 7,910 patients have been treated in the wards, 15,560 as out-patients, and 440 at the Convalescent Home, — a total of 28,910 who have received the benefits of the Hospital in all departments.

During this period 10,507 persons applied for admission; of this number 7,494 were admitted, and 3,013 were rejected. Of the number rejected, 408 were referred to the out-patient departments, because their cases could be provided for there without detriment to the patient. Some of these, however, would undoubtedly have been admitted if they had not applied at times when the Hospital beds were all full. A larger number of non-residents were refused than ever before, it being necessary to decide against their admission in favor of others who were citizens and had a better claim. Of this class there were 377, against 141 last year. Altogether, 792 patients were refused solely because there were no vacant beds in the wards to which they should properly be assigned. Of these 792 rejected patients, 220 were admitted within three days, leaving 572 for whom it was impossible to provide. This is a much larger number than has been rejected during any of the previous ten years. It is evident that the capacity of the Hospital is not large enough to meet the proper and just demands made upon it by citizens. Serious and urgent cases, the trustees feel, must be received, since the urgency of a case, from the humane point of view, is superior to all other demands. It thus happens that persons who are proper cases for admission, and also citizens, must be refused admission because the beds are occupied by "strangers" whose cases are more serious.

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[2] See page 8 of the Journal.

No new wards have been built since 1888, and the capacity of the Hospital, which then amounted to 480 beds, has not been increased.

In the past six years, the applicants for admission have increased from 6,086 to 9,666; the patients admitted, from 5,046 to 6,896; the patients treated in the wards, from 5,368 to 7,312; the total of patients treated in the three departments, Hospital, Out-patient Departments, and Convalescent Home, from 18,982 to 22,255; the daily average, from 344 to 416; the accident cases, from 881 to 1,233; the patients carried in ambulances, from 1,014 (four years ago) to 1,925; the visits of out-patients, from 41,451 to 51,395, and the patients rejected, from 1,040 to 2,770.

The maximum number on any one day has shown an increase each year as follows: 391, 392, 441, 428, 432, and during the past year, 495. The daily average during the same period has also increased as follows: 344, 354, 378, 370, 384, and during the past year, 419. The patients have changed more rapidly, the average length of stay having diminished from 23.39 days to 20.99 days.

From these facts, therefore, it seems clear to the trustees that the demand for admission is rapidly increasing; the number of patients treated constantly greater; the character of the cases more serious; while the capacity of the Hospital has not increased, but rather diminished, and the difficulties of properly caring for patients have become more complicated.

The just conclusion is, they think, that the bed capacity must be at once increased, not only to receive those who have a right to be treated, but also to judiciously treat and properly nurse them.

The mortality-rate was .107, as compared with .109 and .123 in the previous two years. There were 3,817 patients admitted to the medical services, 3,002 to the surgical services, 497 to the contagious service, 86 to the ophthalmic service, and 92 to the aural service.

The cost for each patient per week, was $10.22.

The Convalescent Home has answered the expectations entertained in regard to it when established a year ago.

As a part of the question of insufficient accommodation for the increasing demands made upon the Hospital, the most serious difficulty which confronts the Hospital authorities is the future disposition of the contagious services, now provided for in separate wards, but upon the same grounds and in close proximity to the general services. Upon a wise solution of this problem the future development and usefulness of the institution will, in a great measure, depend. Those who know the good work which this Hospital has done in the past are deeply interested that it should preserve its reputation as one of the best managed municipal hospitals to be found anywhere.

Professor von Helmholtz has been elected a foreign associate of the French Académie des Sciences.

BISSONETTE *VERSUS* REED.

The suit for malpractice recently brought against Dr. A. F. Reed of Holyoke, Mass., has resulted in a verdict for the defendant, a verdict which is in strict accord with the evidence. The plaintiff while coasting struck a post and received a comminuted fracture of the femur. The suit was brought on account of delayed union, bowing and about two inches of shortening. It was in evidence that the patient repeatedly failed to follow advice, and that the shortening and bowing of the thigh had taken place late in the history of the case and after he had removed the apparatus contrary to advice. The testimony of the patient failed to prove any unsurgical procedure on the part of the defendant, or that the result, under the circumstances, was a bad one.

In his charge to the jury, Judge Dewey explained, at length, the liabilities of physicians according to previous decisions. After explaining the meaning of reasonable skill and care, he said that the plaintiff cannot recover even if there has been negligence on the part of the doctor if the result is due also to contributory negligence on the part of the patient. If the accident itself involves in itself deformity, such results as are attributed to the accident the doctor is not responsible for. Concerning experts, their opinion is taken in evidence just as the testimony of ordinary men is received in matters of fact. But this expert testimony must be subjected to the jury's own sifting and analysis. The jury may take into consideration the force of these doctors' opinions, the skill and reputation they possess, and they may make use of their own common knowledge even though not introduced on the witness-stand. It is for the jury to say what was required of the doctor; inspection, supervision, examination and directions to the plaintiff. The man was not under the legal control of the doctor. The law would require the plaintiff to show that none of his trouble was the result of disregarding the doctor's instructions. These cases are not decided on evidence which must be beyond a reasonable doubt; it is only a question of preponderating evidence. If it is true that one of the witnesses made a remark contradictory to his testimony on the stand it is not affirmative evidence, and has no legal force or effect on the main question; it is only a method of impeaching a witness. The question of damages must exclude injuries due to the accident. It may include suffering and loss of capacity due to neglect in treatment both in the past and future, for the plaintiff cannot bring a second action.

As already stated, the jury found a verdict for the defendant, but the case is an example of the way in which a physician, through no fault of his own, may incur loss of time, anxiety and expense without remuneration or benefit to himself.

Effie (doing a sum in arithmetic). — I do wish I was a rabbit?

Maud. — Why?

Effie. — Papa says they multiply so quickly.

MEDICAL NOTES.

The American Association of Genito-urinary Surgeons. — At the recent annual meeting officers for the ensuing year were elected as follows: Dr. E. R. Palmer, of Louisville, president; Dr. L. Bolton Bangs, of New York, vice-president; Dr. J. A. Fordyce, of New York, secretary; Dr. J. P. Bryson, of St. Louis, member of the council; and Dr. R. W. Taylor, of New York, delegate to the Congress of American Physicians and Surgeons.

Cholera in Russia. — There seems to be no doubt that the outbreak of cholera in Russia is serious. Its appearance at Baku, on the Caspian Sea, has been followed by cases in inland cities between the Caspian and the Black Seas. It is impossible to learn exactly how far it has penetrated into the Empire. Some of the famine stricken districts are especially liable to be overrun, and the health authorities have established quarantine at several points.

Chicago Water Again. — The rains of the past week so raised the water in the Chicago River that half a million cubic feet of river water was poured into the lake a minute. The polluted area has reached the two-mile tunnel ports, and as the four-mile tunnel is not yet completed, a certain amount of sewage water must have been pumped into the supply. The Water Department was unable to do anything except to advise the inhabitants of the city to boil all of their water before using it.

Hereditary Transmission of Mutilations. — Dr. C. G. Lockwood, of New York, has recently published some interesting results of his experiments on the hereditary transmission of mutilations. White mice were selected on account of their rapid breeding, as they begin to breed when they are thirty days old and breed every thirty days. He bred them in-and-in for ninety-six generations, destroying all the sickly and defective ones and in this way obtained a larger and finer animal than the original pair. His experiments in breeding their tails off were done by selecting a pair and putting them in a cage by themselves and clipping the tails of all of the young. When these were old enough to breed he selected a pair, and when they had young, clipped their tails. By continuing this breeding, in the seventh generation he got some young without tails and finally got a perfect breed of tail-less mice. By taking one with a tail and one without a tail, and alternating the sexes in each generation, he finally again got a breed of all-tail mice.

BOSTON AND NEW ENGLAND.

Harvard Commencement. — At the Commencement at Harvard on June 29th, 94 men received the degree of M.D. Of these, 68 were graduates of the three years' course and 26 of the four years' course, 13 received the degree *cum laude*, of whom nine received also A. M.; 38 had previously the degree of A.B. and three some other degree. At the dinner at the College Alumni in the afternoon, Dr. William Pepper of Philadelphia, complimented the University upon the establishment of the four years' medical course, and spoke of the influence of Harvard upon the whole of the United States.

Hydrophobia in Lynn. — Examination having showed that the man who died in Lynn on June 8th, after being bitten by a dog, died of hydrophobia, the City Board of Health and the Board of Aldermen have issued an order that all unmuzzled dogs in the city shall be killed. None of the others who were bitten by the dog last month have as yet shown any symptoms of hydrophobia.

Waltham Hospital. — A new hospital building at the west end of the city of Waltham was last week, opened, and the patients from the older hospital were transferred to the new building.

Bequests to Institutions. — By the will of the late Mrs. R. C. Winthrop, the Convalescent Home of the Children's Hospital at Wellesley will ultimately receive $10,000 as a permanent fund, and the Children's Hospital in Boston $5,000.

Yale Medical Department. — The seventy-eighth anniversary of the medical department of Yale University was held on June 28th. The address in medicine was delivered by George M. Sternberg, M.D. of the United States Army. Twenty-two graduates received the degree of M.D.

NEW YORK.

House-to-House Visitation. — The usual summer corps of fifty physicians for house-to-house visitation among the tenement districts have been appointed by the Board of Health, and went on duty the first of July. Many of those appointed have served in a similar capacity in previous summers, and are therefore thoroughly conversant with the duties expected of them. The corps will be under the general direction of Sanitary Superintendent Edson, but Dr. Moreau Morris will, as usual, have the immediate supervision of the work under their charge. The term of duty is for two months, and the salary is $100 a month.

The Autopsy of Bishop. — During the past week Dr. John H. Irwin, one of the physicians who conducted an autopsy upon the body of Washington Irving Bishop, the mind-reader, in May, 1889, was tried for the offence of "illegal dissection"; the indictment being based on a statute which prohibits a post-mortem examination without the permission of a coroner or the consent of the next of kin of the deceased. He had a narrow escape from conviction, as the jury, which was unable to agree, stood nine for conviction against three for acquital.

The Board of Education has appointed a corps of experienced physicians to examine the physical condition of all graduates of the Normal College who apply for positions as teachers in the public schools. The uniform fee for such examinations has been fixed at $3.00, and no applicant is now appointed until she has passed the examination satisfactorily.

Dr. Nathan Woodhull Condict, who belonged to the coterie of distinguished physicians that flourished in New York a generation ago, died on June 27th at the advanced age of 83 years, at his home in Morristown, N. J. He was born in Morristown, and was the son of that eminent physician and statesman, Dr. Lewis Condict, who was one of the originators of the United States Pharmacopœia, one of the commission to fix the boundaries between the States of New York and New Jersey, and a distinguished Whig congressman for many years in the days of Henry Clay. Dr. Nathan Condict was graduated from Princeton College in the Class of 1828, studied medicine at Dr. Willoughby's school at Fairfield, N. Y., with Asa Gray, the botanist, and was afterwards graduated from the College of Physicians and Surgeons in New York City. He practised in New York for a long time with much success, and contributed frequently to current medical literature. For a number of years he was associated with the late Dr. David Meredith Reese, and among his intimate friends were such men as John W. Francis, Abraham Du Bois, Valentine Mott, Willard and Parker.

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Miscellany.

ANNUAL MEETING OF THE HARVARD MEDICAL SCHOOL ASSOCIATION.

The annual business meeting of the Harvard Medical School Association was held at the Harvard Medical School, Boston, on Tuesday, June 28th, 1892, at 12 o'clock, Dr. James R. Chadwick, the President, in the chair.

Drs. Edward Cowles and W. T. Councilman were elected Honorary Members of the Association.

The report of the Treasurer, Dr. Walter Ela, of Cambridge, was read and accepted.

It was moved to change the name of the Association to the Harvard Medical Alumni Association instead of Medical School Association; under the constitution, action was postponed until the next annual meeting.

The President urged that the Association ought to get as members a larger proportion of the graduates, and exhorted all to use their influence in inducing others to join. About half of all the living graduates are members, rather more than half of all whose addresses it was possible to obtain. The annual assessment and the cost is small and the Association's influence will increase with numbers.

Drs. Francis H. Brown, C. C. Carleton, and S. W. Langmaid were elected to the Council for the coming three years.

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PIPERAZIN.

Piperazin is the contracted name now given to the new uric acid solvent introduced last year under the name of piperazidin.[1] When first introduced, it was supposed to be a synthetic spermin, but this is now doubted for several reasons. It is obtained in colorless and nearly tasteless crystals, and is easily soluble in water. It is not only much more soluble than lithium carbonate, but it will dissolve twelve times more uric acid. On theoretical grounds, therefore, we may infer what result is to be looked for by its use.

Biesenthal and Schmidt,[1] in a review of the clinical reports on the drug, recommend it very highly. According to them, it is best given in dilute solution in doses of fifteen grains distributed during the day.[2] Its taste is very slight. As it is not irritating to mucous membranes, a one or two per cent. solution may be employed in washing out the bladder in the case of vesical calculi. Hypodermic injections into gouty deposits and local applications to gouty swellings may also be used. They report seven cases in which the remedy has been tried. In three, who were gouty patients, marked relief was obtained. A fourth had violent attacks of renal colic. On the first day the piperazin was used, an extraordinary quantity of gravel was passed. After the second dose, on the next day, large quantities of gravel were passed several times, and almost immediate relief was experienced. Similar results were obtained in several other cases.

The reports of Vogt, Ebstein, Heuback, Krakauer and Brik are all very favorable.[3] Testimony seems to be nearly unanimous that the remedy is harmless, and that it is effective as a solvent of uric acid.

On the other hand, Hare[4] has been less fortunate with it. In six cases to which he had given it for gout or rheumatoid arthritis or uricæmia, he failed to observe any improvement. One of these patients suffering from a well-marked attack of gout in the big toe, after three weeks, was still taking piperazin, without any change for the better, except that which would be natural in the course of the disease. Another case of gouty eczema was equally unfortunate, and cases of chronic rheumatism of the joints, with deposits of urates, received the drug internally, and also by injection into the swollen joints, without relief.

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CONVEYANCE OF IMMUNITY BY MILK.

Further investigations have been made into the immunity, first discovered by Ehrlich, produced by suckling.[4] The discoverer and Brieger have recently published an account of the results hitherto achieved, in the *Deutsche Medicinische Wochenschrift*, as a contribution from the Institute for Infectious Diseases in Berlin. The first object of this research was to determine the quantitative value of milk as regards immunity, in order to compare it directly with serum. The first experiments were made with tetanus. They immunized a goat in kid with great carefulness by the Brieger-Kitasato-Wassermann method, and after the goat had dropped its young four weeks, obtained a milk of great protective value. For more accurate investigation they injected 0.2 ccm. of the milk into a number of white mice, and determined the degree of resistance brought about by it. They found at the end of the sixth week of treatment that 0.2 ccm. of milk absolutely protected a mouse against a sixteen-fold lethal dose, whilst a twenty-four-fold lethal dose caused serious illness, which, however, the animal recovered from. Further, 0.1 ccm. of milk was a protection when splinters of infected wood were inserted under the skin, but this result was not obtained with half the quantity of milk. A like favorable result was obtained when the milk was injected six hours after the insertion of the splinter of wood. The authors have since sought to procure the immunizing substance in a concentrated form, and have found that the whey contains the principle equally with the milk, and that by evaporation of the whey *in vacuo* its protective power is increased. Thus 0.2 ccm. of concentrated whey protected a mouse against a forty-eight-fold lethal dose without any illness following. The authors lay stress on the high protective value of milk, and the ease with which large quantities of protective material can be procured as compared with blood serum. They also report that they have obtained similar results in regard to typhoid fever.

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[1] Squibbs Ephemeris, April.

[1] Berliner klin. Woch., January 16th.

[2] Therapeutic Gazette, June.

[3] Ibid.

[4] Medical Press, June 1st.

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OBITUARY.—RICHARD SPRAGUE, M.D.

The death of Dr. Richard Sprague on June 28th, was particularly sad. On the previous Thursday, while returning from the ball game at Harvard, he was thrown from a crowded electric car which he was trying to board in Cambridge, striking on his head. He immediately became unconscious, and remained so until his death. He was removed to the Massachusetts General Hospital where on Sunday the skull was trephined and a large clot discovered, but with only temporary relief.

Dr. Sprague was born in Boston in 1859, and graduated from Harvard College in the class of 1881. In 1883, he entered the Medical School and took a high standing in his class. In 1886, he became surgical house officer in the Massachusetts General Hospital, and received his degree in 1887. In 1888, he went to Vienna, and remained abroad two years. While in Europe he was for some weeks seriously ill with typhoid fever. On returning to Boston, he became physician to the Boston Dispensary, serving with a zeal and devotion which is rarely excelled.

Popular in college, beloved and respected by all with whom he came in contact, kind-hearted and conscientious, Dr. Sprague enjoyed a popularity as deserved as it was rare. Just starting in practice, in the full possession of health and strength, keenly enjoying life, his sudden death is mourned by a host of friends, both in and out of the profession.

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OBITUARY.—WILLIAM B. FISKE, M.D.

William Boyd Fiske died unexpectedly at his home in Cambridge, Mass., May 8, 1892, aged thirty-three years, six months. He had been confined to his bed two weeks with typhoid fever. The case appeared light, defervescence had begun, the temperature having reached normal several mornings; there had been no symptoms to cause special anxiety, when without apparent cause dyspnœa and cyanosis suddenly appeared, and he died in about an hour. Post-mortem examination revealed a few ulcerations and swollen glands in the ileum, blood-clots in the large vessels of the lungs, especially of the right lung, and unusual thinness of the pericardium and of the wall of the right side of the heart.

Dr. Fiske graduated from Harvard College in the class of 1882, and from the Medical School in 1887. After finishing the course at the Medical School he served as house-officer, first at the Children's Hospital in Boston, then at the Boston City Hospital. After spending nine months abroad, four in study in Vienna, he opened an office in Cambridge, where, during the past four years he has practised. At the time of his death he was pathologist at the Cambridge Hospital, and secretary of the Cambridge Medical Improvement Society.

Dr. Fiske's character was such as to win for him many and firm friends. During his brief practise in Cambridge he gained the high regard and esteem of his professional brethren by the thoroughness of his preparation for his life's work, and by his unobtrusive ability and strict integrity. He had endeared himself to his patients by his quiet, efficient services to them.

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THERAPEUTIC NOTES.

Vaccination against Tuberculosis. — Hericourt and Richet[1] using cultures of aviary tuberculosis as vaccines, have succeeded in protecting both dogs and apes against human tuberculosis. In this case the microbe used as a vaccinating agent is without pathological action on mammals.

A Case of Glanders Healed by Inunctions. — Gold[2] describes a case of glanders with pustules on different parts of the body, and much constitutional disturbance which was cured by inunction of mercury. The diagnosis was confirmed by cultivation of the bacillus. There were in all sixty-two inunctions, lasting for a period of eight weeks.

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[1] Acad. des Sciences, April 4th.

[2] Berlin Klin. Woch.

RECORD OF MORTALITY

For the Week ending Saturday, June 25, 1892.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Measles.
New York . .	1,827,396	820	434	25.32	10.44	12.84	3.48	3.00
Chicago . . .	1,250,000	456	224	8.19	8.82	.21	2.52	.21
Philadelphia .	1,092,168	434	169	20.92	10.58	11.46	3.91	.69
Brooklyn . .	955,333	379	181	25.74	10.40	12.74	4.94	2.60
St. Louis . . .	451,770	—	—	—	—	—	—	—
Boston . . .	469,645	166	45	7.80	7.80	1.80	1.80	.60
Cincinnati . .	305,000	95	31	7.35	12.60	3.15	3.15	—
Cleveland . .	281,353	104	31	24.00	6.72	16.32	2.88	.96
Pittsburg . .	255,000	125	76	36.00	24.00	25.60	3.20	2.40
Milwaukee . .	234,440	59	24	16.94	11.83	6.76	5.07	—
Washington .	230,360	152	84	33.30	6.57	29.04	1.32	—
Nashville . .	87,754	27	10	29.68	14.84	18.55	—	—
Charleston . .	56,048	34	16	17.61	11.76	11.76	—	—
Portland . . .	40,000	12	2	—	—	—	—	—
Worcester . .	92,313	21	10	28.56	4.76	—	4.76	—
Lowell . . .	82,455	32	17	25.04	9.39	25.00	—	—
Gloucester . .	26,805	1	0	—	—	—	—	—
Cambridge . .	74,644	22	9	13.65	9.10	9.10	—	—
Lynn	60,809	14	3	21.42	7.14	—	14.28	—
Lawrence . .	45,910	15	5	13.33	20.00	6.66	—	—
Springfield . .	47,052	12	4	25.00	8.33	8.33	—	—
New Bedford .	44,954	16	6	12.50	50.00	12.50	—	—
Chelsea . . .	29,479	8	5	12.50	25.00	—	—	—
Salem	31,495	10	1	—	10.00	—	—	—
Haverhill . .	30,065	7	2	14.28	14.28	—	—	—
Brockton . .	26,464	8	0	—	25.00	—	—	—
Taunton . . .	26,464	5	1	—	20.00	—	—	—
Newton . . .	26,498	6	1	16.66	16.66	16.66	—	—
Malden . . .	26,783	6	1	—	16.66	—	—	—
Fitchburg . .	27,445	11	6	—	9.09	—	—	—
Waltham . .	20,942	6	0	—	33.33	—	—	—
Pittsfield . .	18,294	3	2	33.33	—	—	33.33	—
Quincy . . .	17,930	3	0	—	—	—	—	—
Northampton .	15,684	4	0	—	50.00	—	—	—
Newburyport .	14,031	5	0	40.00	—	20.00	—	—
Brookline . .	13,319	2	1	—	—	—	—	—
Medford . . .	12,105	6	1	—	33.33	—	—	—
Everett . . .	14,745	7	3	14.28	14.28	14.28	—	—
Hyde Park . .	11,086	5	0	—	—	—	—	—
Peabody . . .	10,412	2	0	—	—	—	—	—

Deaths reported 3,095: under five years of age 1,405; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 637, consumption 314, acute lung diseases 239, diarrhœal diseases 338, diphtheria and croup 99, scarlet fever 47, measles 43, typhoid fever 43, whooping-cough 27, cerebro-spinal meningitis 17, malarial fever 13, erysipelas 6, small-pox 3.

From scarlet fever New York 19, Brooklyn 8, Philadelphia 7, Chicago and Boston 4 each, Milwaukee 2, Chelsea, Haverhill and Newburyport 1 each. From typhoid fever Chicago 11, Philadelphia 9, Pittsburgh 5, New York, Brooklyn and Cleveland 3 each, Boston, Washington and Nashville 2 each, Milwaukee, Lynn and Lawrence 1 each. From whooping-cough New York 13, Chicago 5, Brooklyn 3, Philadelphia 2, Cincinnati, Washington, Charleston and Cambridge 1 each. From cerebro-spinal meningitis New York and Worcester 5 each, Chicago and Brooklyn 2 each, Philadelphia, Cleveland and Washington 1 each. From malarial fever New York and Brooklyn 5 each, Nashville, Charleston and Springfield 1 each. From small-pox New York 2, Chicago 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending June 18th, the death-rate was 17.8. Deaths reported 3,473: acute diseases of the respiratory organs (London) 202, measles 196, whooping-cough 96, diarrhœa 88, scarlet fever 59, diphtheria 50, fever 22, small-pox (London and Liverpool) 2.

The death-rates ranged from 11.2 in Hull to 22.9 in Liverpool; Birmingham 19.2, Bradford 13.8, Brighton 14.3, Huddersfield 14.0, Leicester 18.0, London 17.1, Manchester 21.4, Newcastle-on-Tyne 19.8, Nottingham 18.4, Salford 20.2, Sheffield 19.3, Sunderland 19.2.

METEOROLOGICAL RECORD,

For the week ending June 25, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...19	29.92	68	79	56	94	86	90	E.	S.W.	3	15	O.	O.	
M..20	29.61	79	88	70	76	48	62	S.W.	W.	20	12	O.	F.	
T..21	29.65	75	90	70	67	61	64	W.	W.	10	9	C.	C.	
W. 22	29.68	79	87	71	57	45	51	N.	W.	6	15	O.	F.	
T..23	29.78	71	76	65	50	80	65	W.	N.W.	10	8	O.	O.	.02
F..24	29.97	61	65	57	89	79	84	N.	S.E.	9	9	O.	O.	
S..25	29.94	65	72	58	94	90	92	S.E.	N.W.	18	4	R.	O.	.99
☞	29.79	71	77	64	75	70	73			11	10			.144

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 25, 1892, TO JULY 1, 1892.

Leave of absence for one month, with permission to apply for an extension of one month is granted Captain William O. Owen, Jr., assistant surgeon, U. S. A.

First-Lieut. Frank T. Meriwether, assistant surgeon, U. S. A., now on duty at Fort Adams, R. I., will report in person to the commanding officer, Madison Barracks, N. Y., for temporary duty at that post, during the absence of Captain Henry S. Turrill, assistant surgeon, U. S. A.

Captain Edward Everts, assistant surgeon, U. S. A., is relieved from duty at David's Island, N. Y., and will report in person to the commanding officer, Fort Robinson, Neb., for duty at that post, relieving Captain Henry I. Raymond, assistant surgeon, U. S. A. Captain Raymond on being relieved by Captain Everts will report in person to the commanding officer, Fort Washakie, Wyo., for duty at that post, relieving First-Lieut. Charles F. Mason, assistant surgeon, U. S. A.

First-Lieut Charles F. Mason, assistant surgeon, U. S. A., on being relieved by Captain Raymond, will report in person to the commanding officer, Fort Snelling, Minn., for duty at that post.

By direction of the Secretary of War, First-Lieut. Champe C. M. McCulloch, Jr., assistant surgeon, U. S. A., now on duty at Fort Sam Houston, Texas, will report in person to the commanding officer, Fort Hancock, Texas, on July 1, 1892, for temporary duty at that post.

Leave of absence for twenty days is granted First-Lieut. Henry C. Fisher, assistant surgeon, Fort Yates, N. D.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 2, 1892.

C. P. Baggs, assistant surgeon, ordered to Naval Hospital, Mare Island, Cal.

M. C. Drennan, surgeon, from Naval Academy and to Navy Yard, Norfolk, Va.

G. F. Winslow, surgeon, from Navy Yard, Norfolk, Va., and wait orders.

C. F. Stokes, assistant surgeon, from Naval Hospital, Mare Island, Cal., and wait orders.

G. A. Lung, assistant surgeon, from Naval Hospital, New York, and to U. S. S. "Minnesota."

G. H. Barber, assistant surgeon, from U S. S. "Minnesota" and to Naval Hospital, New York.

V. C. B. Means, passed assistant surgeon, from Navy Yard, New York, and to Naval Hospital, Norfolk, Va.

N. H. Drake, passed assistant surgeon, from Naval Hospital, Chelsea, Mass., and to Navy Yard, New York,

J. E. Page, assistant surgeon, from Receiving-ship "Independence" and to the U. S. S. "Thetis."

SOCIETY NOTICE.

The Mississippi Valley Medical Association will hold its eighteenth annual session at Cincinnati, October 12, 13 and 14, 1892. An address on Surgery will be delivered by Dr. Hunter McGuire, of Richmond, Va. An address on Medicine by Dr. Hobart Amory Hare, of Philadelphia. The officers of the Pan-American Medical Congress will hold a conference at the same time and place.

Charles A. L. Reed, M.D., *President*, Cincinnati.
E. S. McKee, M.D., *Secretary*, Cincinnati.

RECENT DEATHS.

J. Suydam Knox, M.D., died in Chicago, June 28th. He graduated from the College of Physicians and Surgeons in New York in 1866. At the time of his death he was Professor of Obstetrics and Diseases of Children in the Rush Medical College and physician to several hospitals.

John A. Ray, M.D., died in Brooklyn, June 22d, aged thirty-nine years. He graduated from the College of Physicians and Surgeons, New York in 1874, and for the last ten years has been surgeon to the Brooklyn Eye and Ear Hospital.

Dr. Nathan Woodhull Condict, died in Morristown, New Jersey, June 27th, aged eighty-three years. He was at one time a prominent physician in New York, and a frequent contributor to medical journals.

George Fuller Gill, M.D., Professor of Diseases of Children in the St. Louis Medical College, died June 4th, aged forty-nine years.

William Colles, M.D., F.R.C.S.I., Regius Professor of Surgery in the University of Dublin, died June 18th, aged eighty-three years.

BOOKS AND PAMPHLETS RECEIVED.

Biographical Sketch of D. Hayes Agnew, M.D., LL.D. By DeForrest Willard, M.D.

Acromegaly – Paralysis Agitans. By Simon Baruch, M.D., New York. Reprint. 1892.

Reports of the Trustees and Superintendent of the Butler Hospital for the Insane. 1892.

University of Colorado, Boulder. Special Bulletin of Medical School and Law School. 1892–93.

Studies upon Injuries of the Kidney, Nephrolithotomy and Nephrorraphy. By Aug. Schachner, M.D. Reprint. 1892.

Bibliographie der Klinischen Helminthologie. Heft 3 and 4. Die Darmcestoden des Menschen, von Dr. J. Ch. Huber. München: J. F. Lehmann. 1892.

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Lecture.

THE PREVENTION OF DISEASE IN MASSACHUSETTS.[1]

The Shattuck Lecture for 1892.

BY J. F. ALLEYNE ADAMS, M.D., OF PITTSFIELD.

Mr. President and Fellows of the Massachusetts Medical Society: — The professional life of the founder of the Shattuck fund extended over the first half of the present century. Preventive medicine, as a science and an art, had in the United States as yet taken no root; but, in the prophetic minds of the medical thinkers of that time, the seed was germinating which was in the next generation to put forth the tender leaf, and in our day to grow into a goodly tree. Science and philanthropy united in teaching these wise medical fathers that to prevent disease is even better than to cure it; and in the front rank of these scientific philanthropists was Dr. George Cheyne Shattuck. In selecting, therefore, for this paper a title relating to the prevention of disease, choice has been made of one of his favorite themes. In confining it within the geographical limits of the Commonwealth of Massachusetts, respect is had to the patriotic preference expressed in the terms of his bequest.

To what extent is it possible to prevent disease in this Commonwealth? What has been accomplished in this direction, and what more remains to be done? What are the special needs which to-day are calling for concerted action on the part of the medical profession? In asking your attention to a consideration of these questions, I feel confident of a sympathetic hearing; for the subject is one in which the Massachusetts Medical Society has not only a lively interest but a peculiar title of proprietorship. It cannot be wholly relegated to health officials and special associations, for it is the medical practitioners, as a body, who give vitality to the work. It is the doctors who, in their daily intercourse with the people, are educating them in sanitary matters, it is the doctors who have been instrumental in the enactment of sanitary legislation, and it is the doctors who stand behind the health authorities with ever ready help. The Massachusetts Medical Society is imbued with a true missionary spirit. Its members gladly spend themselves in this cause, which not only brings no pecuniary return, but even threatens to deprive them of a livelihood. Its efforts for the prevention of disease began before any official action was inaugurated. To us as a Society belongs much of the credit for what has been done, and upon us largely rests the responsibility for its effective continuance.

It is well known that Massachusetts was the first State in the Union to establish a State Board of Health, and that the founder of the Board was a distinguished member of this Society. It was Dr. Bowditch's writings on sanitary subjects and his personal influence upon public men which brought this Board into being; and it was he who, as its first president, gave it a successful start in its useful career. Since our last meeting, this great and noble-hearted man has passed from among us; and profound grief for his loss is the dominating sentiment of this occasion. How can we better do honor to his memory than by occupying ourselves for a time with one of the departments of medicine in which he was a pre-eminent leader?

During the twenty-two years which have elapsed since the establishment of the State Board of Health, our State has enjoyed the benefit of systematic sanitary work, the great scope and thoroughness of which is known to those who have watched its operations or read its series of annual reports. Investigations of the utmost practical value have been carried on, and with the aid of local Boards of Health a vigorous warfare has been waged against the causes of disease, with a special view to the prevention and suppression of epidemics. An interesting sketch of the work of the Board was given by its President, Dr. Walcott, in the annual address before this Society in 1889.

Now, after twenty-two years of this excellent work, we are justified in inquiring as to the results, and even in confidently looking for such results in the statistics of mortality. Although it would not be fair to judge this work wholly by statistics, yet there is no other test which has the merit of accuracy. The trustworthiness of the Massachusetts Registration Reports is generally conceded, our State being no less distinguished among the others in this respect than in that of priority of sanitary legislation. Nowhere, therefore, in the United States are the conditions so favorable for estimating the value of public health measures as in this State of Massachusetts.

In inquiring what change has taken place in the death-rate of our State, are we not justified in expecting to find a material decline? For my own part, I had hoped to discover quite a handsome reduction. Imagine, then, my surprise and disappointment at finding that the death-rate of Massachusetts has remained practically unchanged. The average for the past 40 years has been 19.35 per 1,000, while for 1890 it was 19.44, a trifling increase. Dividing this period of 40 years into decades, we find the average death-rates for each decade to be 18.24, 19.43, 19.81 and 19.59. Thus there was a slight increase in the death-rate which reached its maximum in the third period. The average for the fourth decade was slightly less than the third, and yet was higher than either the first or second. The best that can be said is that the upward tendency was arrested about 1884, since which time there has been a slight irregular downward tendency.

But, unsatisfactory as this showing is, we must not be hasty to conclude that nothing has been accomplished and that the movement for the prevention of disease has proved a dismal failure. Let us rather analyze the death-rate, to ascertain whether there are any special directions in which an improvement can be discovered. My own studies in this direction have proved profoundly interesting, and have resulted in the discovery that the mortality from certain diseases is decreasing while that from others is increasing, the gain and the loss so nearly balancing each other as to produce but little impression upon the general death-rate.

In order not to weary you with statistics, I have prepared diagrams which show at a glance the comparative mortality from twelve principal diseases or classes of disease during the forty-one years from 1850 to 1890.

In these diagrams, the vertical lines correspond to the number of years, and each horizonal line represents one death to 10,000 of population. Each of the irregular lines, or curves, therefore, indicates the number of deaths from a specified disease, in each year, to every 10,000 of population for that year.

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[1] Delivered before the Massachusetts Medical Society June, 7th, 1892.

In the preparation of these statistics, I am indebted for much valuable aid to Dr. S. W. Abbott, Secretary of the State Board of Health.

An examination of these several curves shows that five of them have a decided downward tendency. These are *Small-pox, Scarlet Fever, Measles, Typhoid Fever, Consumption.*

Observing these in detail, we find that *Small-pox* declined irregularly from 1850, recurring in epidemics about once in five years, the epidemics lasting two to three years, until 1872–73, when a great epidemic which extended all over the country caused the heaviest mortality on record in this State, the number of deaths in 1872 amounted to 1,029, and in 1873 to 668. The following year they had fallen to 26, since which time they have steadily tapered off until 1886, when not a single death occurred from this cause. In 1890 there was but one death.

Scarlet Fever and *Measles* have both decreased in each decade since 1850, the epidemic waves showing a receding tide. For *Scarlet Fever* there was but little difference between the average of the first and second decades; the third showed a marked decrease, and the fourth the sharpest decline of all. *Measles*, however, owing to the severe epidemic of 1859, made the greatest fall in the second decade, since which time the mortality has been low and declining.

Typhoid Fever increased in the second decade, the maximum being reached in 1865, since when the fall has been decided, though undulating.

The fall in the death-rate from *Consumption* is very striking, each decade showing a decrease since 1850. The decline was the most marked in the second decade, and has been comparatively steady since 1860.

The curve for *Diphtheria* and *Croup* shows two great epidemics, reaching their height in 1863 and 1876, the third decade having the highest average. Since 1876 there has been a fall, well marked but not great, so that the average for the last decade, though lower than the third, is still a trifle higher than the second, and almost double that of the first.

The *Diarrhœal Diseases* exhibit a mortality greater than any of those yet mentioned, except consumption. The list includes cholera infantum, to which are attributed more than half of the deaths, dysentery, diarrhœa, cholera morbus and enteritis. The mortality from these is seen to be irregular. The highest average was reached in the third decade, which was, however, but little above the second. The fourth is lower than the second or third, but still a little higher than the first. The highest point was reached in 1872. A more favorable showing could be made by selecting cholera infantum and dysentery; but the figures are liable to be so largely affected by uncertainties of diagnosis and nomenclature that it has seemed best to consider the diarrhœal diseases only as a whole.

If we now examine the curves for *Bronchitis* and *Pneumonia*, diseases of the *Brain*, *Heart* and *Kidneys* and for *Cancer*, we find one observation to be true of them all, namely, that they have all increased in mortality, and that each of them has increased in each decade since 1850.

The most remarkable increase is shown in the case of bronchitis and pneumonia, the death-rate from which was more than three times as great in the last decade as in the first. This increase has been enough to slightly more than compensate for the decline in consumption. The query, therefore, which naturally presents itself, is whether we have not here, again, to deal with a question of diagnosis rather than of fact. Very likely we have, to a certain extent; but an examination of the ages at which the deaths occurred will convince us that this is not the only explanation. Thus we find that (1) the increase of bronchitis is largest during the first two years of life, and next largest after the age of fifty, these being the ages when consumption is least fatal; and (2) that if we add together the total deaths from consumption, bronchitis and pneumonia for the several age periods, for the two years 1861 and 1890, we find an increase of these aggregated lung-diseases under the age of five years and between the ages of forty and fifty; but a decrease between five and forty, and over fifty. The most marked decrease is between the ages of fifteen and thirty. As the gain, therefore, is greatest at the ages most prone to consumption, we may safely conclude that there is an actual falling off in the mortality from this disease.

The increase in the mortality from diseases of the brain, heart and kidneys, and from cancer, is very remarkable. Diseases of the brain have increased two-fold, those of the heart three-fold and cancer nearly three-fold, while diseases of the kidneys and dropsy, taken together, have increased about 50 per cent. This means, of course, in proportion to the population. The actual increase has been twice as much, the population of the State having doubled in the forty years.

Thus we may provisionally classify diseases in two groups, those which are decreasing and those which are increasing. Let us now inquire what other features characterize these two groups.

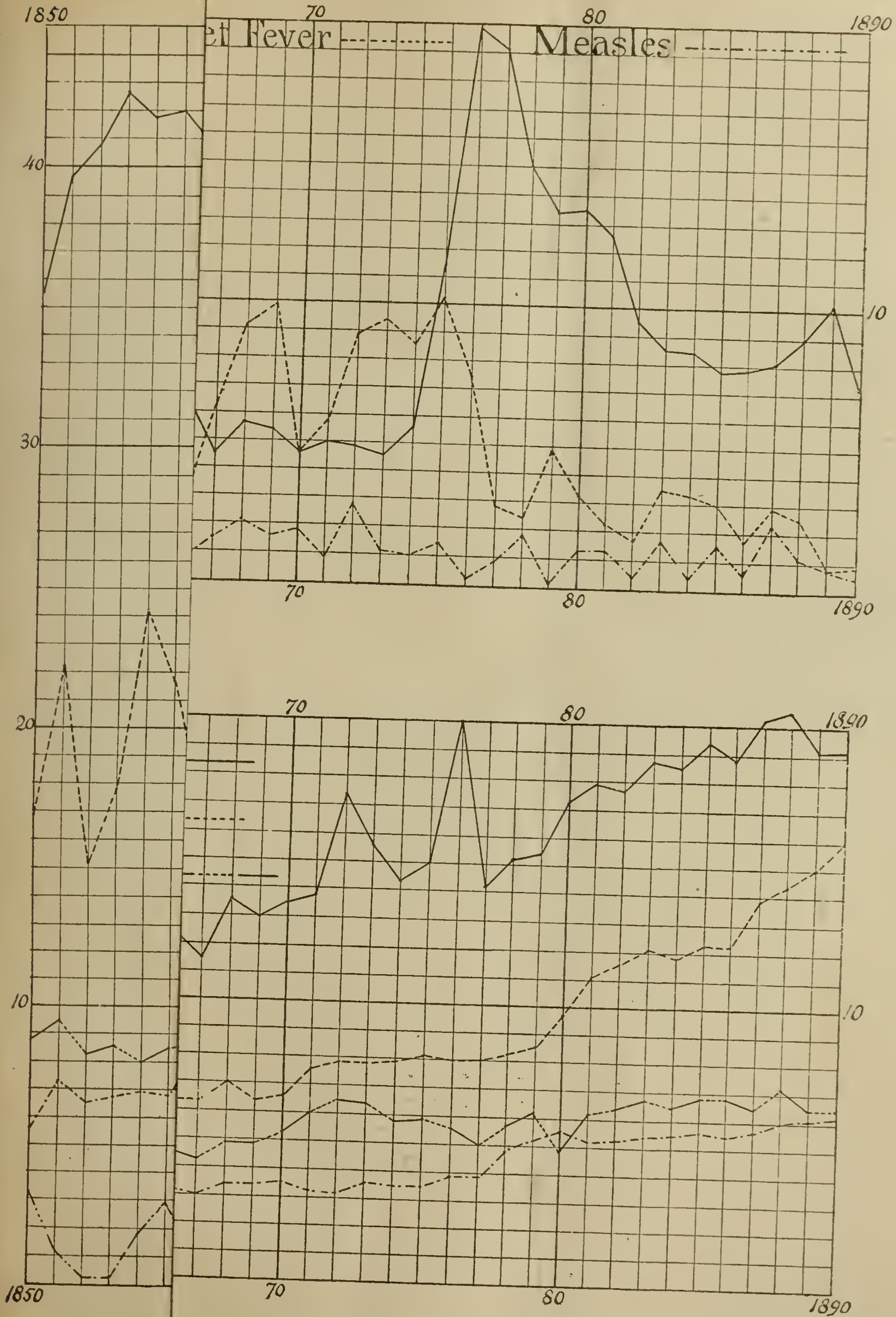
In the first place we observe that all of the decreasing diseases except consumption, belong to the zymotic class. Even consumption it is hardly possible, at the present day, to exclude from this group, though the nosologists still retain it among the constitutional diseases. Now, these same zymotic diseases are the very ones which are most amenable to preventive measures, and against which these measures have been chiefly directed.

Small-pox has been vigorously fought by vaccination, quarantine, inspection of imported rags, isolation of cases and disinfection. The result is one of the greatest triumphs of sanitary science, for this disease, once so frightful in its ravages, is for the present practically stamped out.

Scarlet Fever and *Measles* have been combated by isolation and disinfection, and by the protection of school children by forbidding the attendance at school of any children liable to convey the infection.

For the prevention of *Typhoid Fever* every effort has been made to ensure the purity of drinking-water, the improvement of sewerage and local cleanliness. The thorough and systematic work of the State Board of Health in relation to the water-supply and sewerage of the State is of inestimable value, both present and prospective, and is worthy of our grateful recognition.

The decline in the mortality from these four diseases, small-pox, scarlet fever, measles and typhoid fever, has been so marked during the past twenty years, since the establishment of the State Board of Health and the generally increased attention to sanitary measures, that it is impossible to avoid the conclusion that these facts stand to each other in the relation of cause and effect, and that to our sanitary laws and their careful execu-



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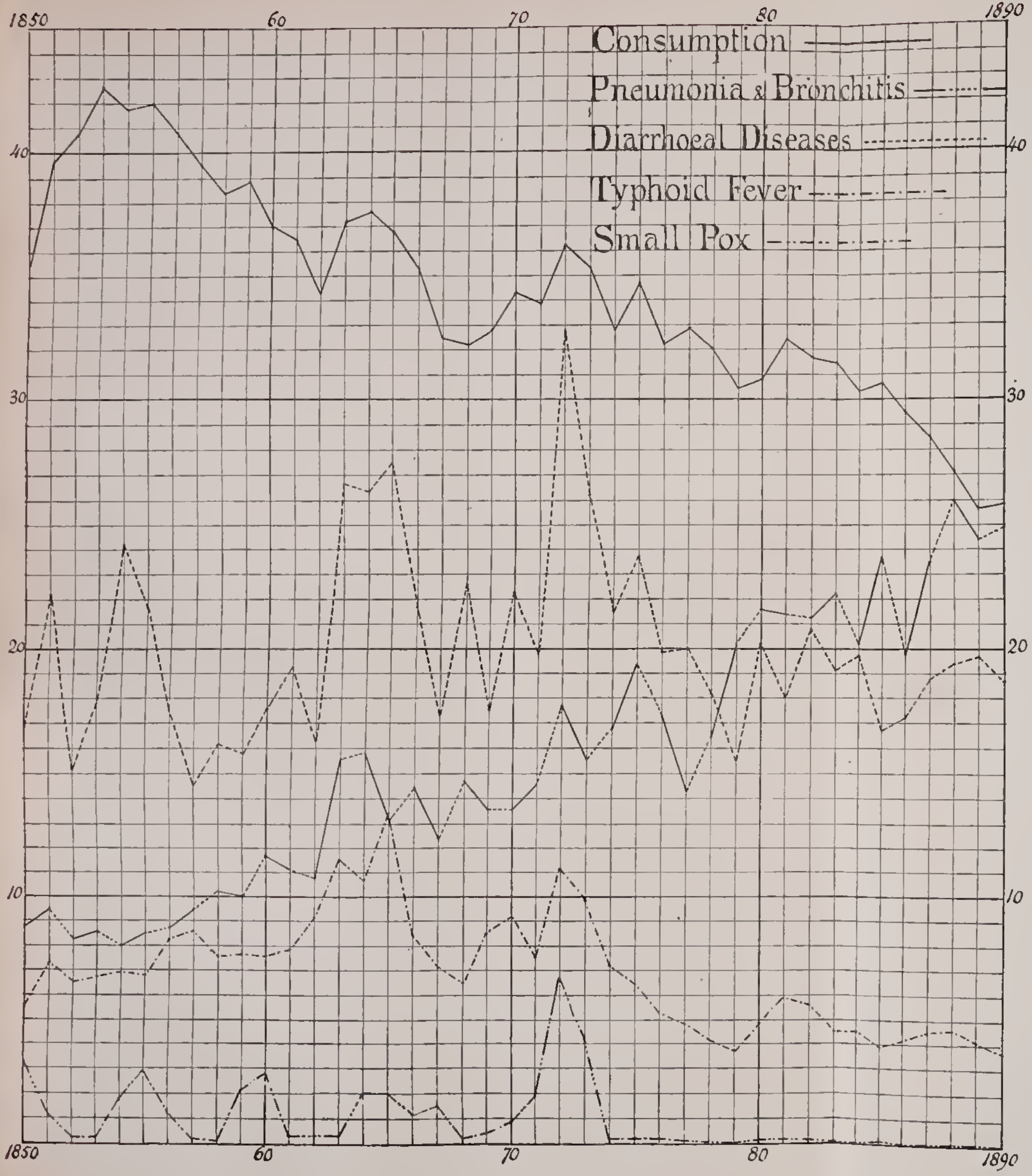
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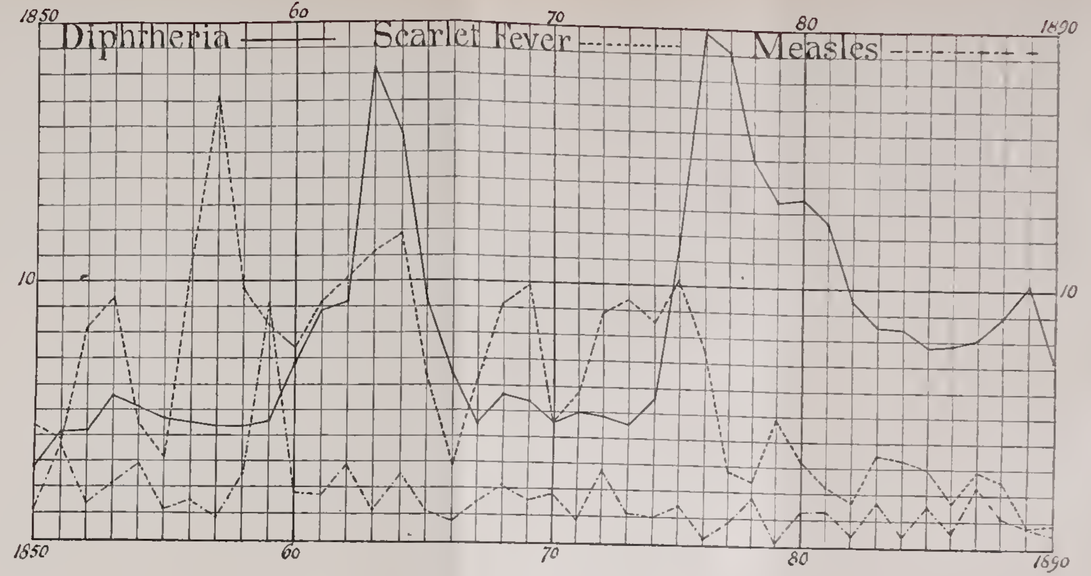
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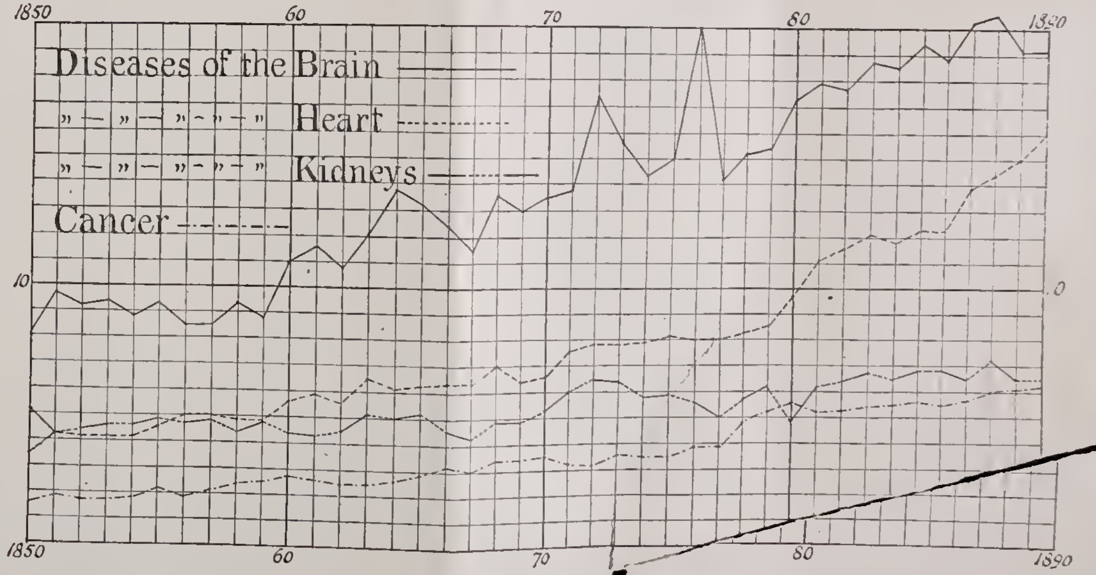
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tion may be attributed the falling off of the death-rate from these diseases.

That the same notable decrease is not found in the case of diarrhœal diseases and of diphtheria and croup is disappointing, and yet it is satisfactory to find that, though the improvement is less, it is not insignificant, and that it has been continuous for periods of fourteen and eighteen years respectively. The great difficulty in the case of diphtheria is its virulent contagiousness and persistent infectiousness, facts which have been very strongly presented by Dr. S. W. Abbott, in his recent admirable paper on "Diphtheria in Massachusetts"; but which, as yet, appear to be inadequately understood by the public. The causes of the diarrhœal diseases are difficult to reach, the controllable factor of local or general filthiness being influenced powerfully by the uncontrollable factor of intense summer heat; while a third factor, namely, bacteria in milk, is liable to elude the most active vigilance. But all of these problems are receiving the careful attention of the sanitary authorities, and their satisfactory solution may be hopefully expected.

The zymotic diseases as a class have diminished from 474 to each 100,000, in 1870, when the State Board of Health began its work, to 360 to each 100,000 in 1890. This is equivalent to a saving of over 2,500 lives in 1890, and is a result of which the Board and every citizen may well feel proud.

How far the decrease of *Consumption* may be attributed to sanitation is a question not readily answered. The agencies likely to affect this disease have been the better ventilation of school-houses, factories and public halls, the improvement of tenement-houses, the drainage of wet cellars, and the weeding out of tuberculous cows. While some good results from these agencies are to be expected, yet they are wholly insufficient, and are not likely to have caused the very marked decline which the statistics show. One important fact which must not be overlooked is the removal from the State of great numbers of consumptives to more favorable climates where, if they die, their deaths are not charged to the State of Massachusetts.

While thus we find that all of the diseases which are decreasing are those against which the efforts of the sanitary authorities have been actively directed, the converse fact is equally striking, namely, that the increasing diseases are either not amenable to public preventive measures, or have not yet been subjected to such measures. No official method of preventing diseases of the brain, heart, lungs or kidneys, or of cancer, has yet been discovered, and in the present state of science we cannot expect the Health Boards to control them in any way whatever. The increase of these diseases cannot therefore be attributed to any lack of efficiency on the part of the health officers, nor is there any just debit to offset the 2,500 lives a year which we have just placed to their credit.

The second general feature which characterizes these two groups of diseases is this: that the diminishing diseases are chiefly those of early life, while the increasing diseases are those of later life.

Of the deaths from measles in 1890, nearly all were under ten years of age, and more than half under two years. From scarlet fever and diphtheria the maximum mortality was between five and ten years; and nearly all of the deaths occurred from the former under fifteen years, and from the latter under thirty years. From the diarrhœal diseases, more than 83 per cent. occurred under five years. Typhoid fever and consumption are especially diseases of early adult life, and both attain their highest mortality between the ages of twenty and thirty. In striking contrast with these are the increasing diseases. Diseases of the heart are most fatal between the ages of fifty and eighty; brain diseases between seventy and eighty, and kidney diseases and cancer between sixty and seventy. As regards pneumonia, although the first year of life is the most fatal, yet one-half of the deaths occur after the age of forty, and the most fatal period after the first year is between the ages of sixty and seventy.

At this point it is necessary to inquire what relation this excessive mortality at the later ages bears to the number of persons living at those ages. The census of 1880 shows that the population of Massachusetts embraced in that year a larger percentage of persons over sixty years of age than any other of the United States with the exception of Maine, New Hampshire, Vermont and Connecticut. It also included a smaller proportion under five years of age than any other State with five exceptions. Moreover, the population under fifteen years is decreasing, and over fifty is increasing. Yet neither of these facts will explain the decrease of mortality in early and the increase in later life; for when we compare the deaths at given ages with the number of persons living at those ages, we find a decrease at all ages below forty, and an increase at all ages above forty. The decrease is greatest between five and thirty, and the increase grows greater and greater in each ten years from forty upward. The natural effect of this condition is to increase the number of persons living to middle age, but to reduce the proportion of very old people. The effect upon the average duration of life has been to increase this average in the last forty years from 27.07 years to 34.13 years, a gain of over *seven* years; a remarkable fact when taken in connection with the unchanged death-rate and the increased mortality of old age. This gain, therefore, belongs wholly to early life, and shows that children have now a better chance than forty years ago of living to maturity, and of passing safely through the producing and reproductive age. The change is therefore in that direction which is, beyond all others, of material value to the Commonwealth.

It is difficult to institute any comparison between the statistics of Massachusetts and those of other portions of the United States, partly because the compilation of the vital statistics of the census of 1890 is not yet completed, and again because the superior accuracy of the Massachusetts registration gives our State an excessive death-rate as compared with other States, which is more apparent than real. But when the new census is completed, we may expect results of great value, worked out under the skilful supervision of Dr. John S. Billings. One observation, however, may here be made, which is that the diseases which are here decreasing are those which in 1880 were in Massachusetts below the average for the United States, and those which are increasing were, in that year, well above that average; showing that these disease-tendencies are, at least in their excessive manifestation, peculiar to our own section of the country.

In order that we may have a more definite basis for comparison, let us refer briefly to the vital statistics for England and Wales. From 1850 to 1880 the death-rate of Massachusetts was almost invariably lower than that of England and Wales, but since 1880 the rates have been almost identical, the death-rate over there having showed a pretty steady decline since 1875, and now having crept a little below ours.

An examination of the causes of death in England and Wales shows a very similar state of things to that which exists in Massachusetts, namely, that the zymotic diseases and consumption are decreasing, while there is a decided increase in acute diseases of the lungs and in diseases of the heart, kidneys and cancer. The chief exceptions are the following: *Diphtheria*, which decreased in earlier years, while it was increasing in Massachusetts, has since 1880 been on the increase in England and Wales. The decrease in small-pox has not been so remarkable as in Massachusetts. The mortality from diseases of the brain in England and Wales shows no marked increase, but still is much higher than in Massachusetts, where the increase has been very rapid.

In regard to the actual mortality, the chief differences between Massachusetts and England and Wales are these: we have a larger proportion of deaths from diphtheria, diarrhœal diseases, fever and consumption, while England and Wales have a larger proportion from small-pox, measles, scarlet fever, acute lung diseases, diseases of the brain, heart and kidneys, and from cancer.

For the data for these comparisons I am indebted to Longstaff's "Studies in Statistics," a book which might appropriately have been entitled "Arithmetic made Interesting." It was not till after my examination of the Massachusetts statistics that this delightful volume came into my hands, and I was much interested to find so strong a general correspondence between the disease tendencies of these two widely separated communities, a correspondence indicating the presence of similar social forces. Concerning the decrease in the zymotic diseases, Longstaff says (p. 235):

"It seems impossible to dissociate this great saving of life from the operation of the Public Health Acts, and more especially the indirect results of this as shown in the proceedings of such bodies as the Sanitary Institute, the exhibition of sanitary appliances under various auspices, and other proofs that public attention has been drawn to these matters. The fall in the death-rate from fever is without doubt the great triumph of the sanitary reformers. Typhus has been driven out from place after place by measures taken to check over-crowding and want of ventilation until it now lingers only in the lowest quarters of a few large towns. Things are not perfect yet, far from it; but they were once much worse, and that not so long ago."

"Things are not perfect yet." These words used by Mr. Longstaff concerning his own country are equally true in Massachusetts, where more than 8,000 persons died in 1890 from the zymotic diseases alone. If 8,000 lives are destroyed in a single year by preventable diseases, surely prevention has not yet done its perfect work. We must remember also that the baleful influence of the zymotic diseases cannot be measured by their mortality alone; for many who recover from them are left with weakened constitutions or with some organic affection which impairs their usefulness and shortens their lives. Such are diseases of the kidneys resulting from scarlet fever, of the lungs from measles, and of the heart from diphtheria. The results thus far accomplished, however, are substantial and encouraging, and a sufficient vindication of our sanitary laws and the mode of their enforcement. The indications for the future are that these efforts must be no whit relaxed, but must, on the contrary, be increasingly strenuous. To relax them at any point would entail direful consequences. The contagious and infectious diseases are like fire which must be fought unceasingly until it is extinguished. Left to itself it will burn until the inflammable material is all consumed. With all that has been done, we have seen how small are the results in some very important directions. Small-pox is the only disease which can be said to be almost extinguished; and yet the smouldering spark of even a single case of small-pox is sufficient, with the least removal of the agencies which hold it in check, to flash up into the blaze of a desolating epidemic. Even in our present immunity lurks a future danger: for the further we get away from an epidemic and a scare, the larger will be the proportion of persons unprotected by vaccination.

Our aim should be the ultimate extinction of all germ-diseases; but when this will be accomplished I do not venture to predict. The condition most favorable for such a happy result would be an isolated community holding absolutely no intercourse with the rest of the world. Here a war of extermination against all disease germs might be successfully waged, supposing such an isolated people to be possessed of the requisite intelligence or to find life sufficiently interesting to care for its preservation. But Massachusetts is not thus isolated, nor is it possible in this age that such a condition should anywhere obtain. Emigration, trade and travel cause a constant intermingling of peoples.

Quarantine, to be sure, acts as a check upon the importation of disease from abroad; but evidences of the impotency of quarantine are alarmingly frequent, and interstate quarantine is impossible. Our State might be free from zymotic diseases to-day, and yet by to-morrow a full assortment of them might be brought within our borders. Herein lies the great obstacle to the stamping-out process; and it is, therefore, safe to say, if pressed for a prediction, that the epidemic diseases cannot be eradicated from Massachusetts until they are likewise eradicated from every part of the world. That such a time may come we may venture to hope. Whether or not we believe in it as a practical possibility, we should be satisfied with no lower ideal.

But if epidemics cannot be kept *out*, we may reasonably hope to keep them *in*; and here is the true principle which should guide our efforts. Every city and town should see to it that no epidemic disease is allowed to spread beyond the first case, and on no account to pass beyond its borders. This is already the aim of the Boards of Health; but in order to achieve success, these Boards must be aided by an intelligent public, and especially must they have the active and watchful co-operation of the whole medical profession.

There is one particular direction in which, it seems to me, that we doctors can, at this time, render material service in this cause; and that is, by making a concerted effort to secure the general adoption of *disinfection by steam*. The modes of disinfection now in use after a case of infectious disease are very diverse, and seldom sufficient. If the germs do happen to get destroyed, it is apt to be at the cost of a ruinous destruction of property. Especially is there no thorough and convenient way of disinfecting mattresses, pillows and carpets. What is needed is a receptacle of sufficient size in which these may be placed and subjected to a moist heat in the form of steam under pressure. By a pressure of ten pounds, a temperature of 230° F. is obtained, a continuance of which for fifteen minutes is found to be sufficient. Dry heat requires a much longer exposure, at least two hours, and even then is not certain. Superheated steam, which is practically dry heat, has been tried and found wanting. But steam under pressure can be kept at a sufficient temperature and forced into the centre of any porous material, with the result that every germ becomes thoroughly cooked. Various forms of apparatus for this purpose are made in France, England, Germany and Holland. They have not yet come into general use in this country, though this method is employed, in some form, in most of our large hospitals. It has also been adopted, within two or three years, at the quarantine stations at New Orleans and Charleston. At New Orleans, superheated steam had previously been tried on a large scale, but abandoned. The disinfecting oven made by Geneste, Herscher & Co., of Paris, is very complete, and may be taken as the type of this form of apparatus. This consists of a sheet iron cylinder, sheathed with wood to prevent radiation, with a door at each end fastened by clamps. Within the cylinder, above and below, are coils of steam pipe for the preliminary heating of the chamber, to prevent condensation. Another pipe, pierced with small holes traverses the side of the cylinder and admits the steam to its interior. The articles to be disinfected are placed in a carriage or rack which runs upon a track into the oven. After the doors are fastened a dry heat is first obtained by admitting steam to the coils of pipe. Steam is then admitted directly into the cylinder and the air allowed to escape. Then the outlet is closed, and the pressure of steam kept up for about five minutes. The steam is then permitted to escape, and admitted a second time. By this intermittent action, the most complete penetration of the articles under treatment is secured. Even the heart of a mattress becomes as hot as its surface. These ovens are made both stationary and portable. The stationary form is built into a wall in such a way that the opposite ends open from separated rooms, whereby any mixing of infected and disinfected articles is avoided. These ovens are from 7 feet to 7½ feet in length, by 3 feet 8 inches to 4 feet 4 inches in diameter. The portable apparatus is smaller, has a door only at one end, and with its upright boiler strongly resembles a steam fire engine. This weighs 2,400 kilogrammes (5,291 lbs.), is drawn by a pair of horses, and costs in Paris $1,340. The stationary form costs $980 to $1,282, according to size. These are extensively adopted in France, and are under municipal control, being placed free of cost at the service of the public.

The steam disinfector of Washington Lyon, of London, is similar in principle, but is made with a double casing instead of the steam coils. It is also oval in form, and is only made stationary. I see no reason why disinfectors of this type should not be made in our own country, and cheaper than they could be imported. If every town in Massachusetts, or at least the larger ones, owned such a disinfector, the arrest of epidemics would become a much easier matter than it is at present. If the portable form were adopted, it could be sent to neighboring towns or villages. If the stationary form, the articles to be disinfected would be packed in bundles or bags and conveyed in a special wagon to the disinfecting station.

Let us all make a business of calling the attention of the authorities and the public to this matter.

(To be continued.)

Addresses.

MEDICAL EDUCATION AND THE FOUR–YEARS' COURSE.

Extracts from Addresses at the Annual Dinner of The Harvard Medical School Alumni Association, June 28, 1892.

BY DR. J. R. CHADWICK, PRES. CHARLES W. ELIOT, DR. WILLIAM PEPPER, DR. W. H. WELCH, AND DR. J. C. WHITE.

Dr. J. R. Chadwick,

President of the Alumni Association.

The Medical Faculty has, throughout the past year, been expending all its energies in preparation for the establishment of the graded four-years' course of instruction which was last year announced to go into effect in September, 1892. A provisional schedule of the studies distributed over the four years has been printed and distributed by the Faculty, which will be printed in the next bulletin of this Association. Our school will by this act have the credit of inaugurating in this country this great step in the advancement of medical education, and must be supported by the influence of this Association as a body, and of every member in his individual capacity.

As is known to you, the medical department of the University of Pennsylvania has likewise voted to establish a four-years' course in 1893, and the infinite resources of its Provost, who is our honored guest to-day, is a guarantee that the pecuniary conditions preliminary to the step will be fully met within the twelve months. That the times are ripe for this extended course of medical instruction is evinced by the following extract from the response to my invitation, from the Hon. Seth Low, the recently installed President of Columbia College, in New York, with which the institution hitherto known as the College of Physicians and Surgeons has been affiliated as its medical department:

> "I confidently anticipate that the curriculum in the College of Physicians and Surgeons will be made to cover four years at an early day. Our trustees have desired to complete one year's experience with the Medical School before entering upon a new basis. The opinion, however, I know to be favorable to such a policy, both in the Faculty and among the trustees."

It is worthy of note that the three medical schools which are thus taking the initiative in improving medcal education are all connected with universities, whence we may infer that they derive, if not direct pecuniary benefit, at least inspiration to higher ideals, a clearer perception of educational needs, and a more assured status, from this connection.

Charles W. Eliot,

President of Harvard University.

Mr. President and Gentlemen: — I want first to congratulate you on the establishment of this Association. I didn't have a chance to do it last year, being engaged, at the hour of your dinner, at the corresponding association belonging to the Law School. It was therefore with singular pleasure that I found myself able to come here this afternoon. I most heartily believe in the value, to the university and to all its departments, of these permanent associations of the graduates of its different departments. I know from personal observation that the Association of the Alumni of Harvard College, the Department of Arts, has been of infinite service to Harvard College; and we have learned within the last five year sthat the Association of the Law School graduates can be, and has been of great service to the Law School. I confidently anticipate the same sort of service to the Medical School from this Association; and what I have heard here this afternoon strengthens me in that expectation.

The excellent report to which we have just listened illustrates to my mind a characteristic of the university which was brought home to me the other day by one of our youngest professors. The report to which we have just listened gives praise, but also makes suggestions of new things which ought to be done. It is critical as well as laudatory.

We have had some interesting experiences at Cambridge during the past three months, with regard to keeping teachers and getting them from other institutions. We have got for the university five new professors within two months, from other universities; we have retained at Cambridge eight teachers (three of them professors, five of them only instructors) when invited to other universities at much larger salaries and with higher titles. I need not say that these are peculiarly satisfactory experiences to the government of the university, and I have been trying to find out some of the reasons for this condition of things. One of them was given me in very few words, I think, by one of our younger teachers, who had come himself from the service of another university to our university. I asked him why he found service here more agreeable than it had been in the other institution with which he was connected. He reflected for some time, and finally said: "Well, I think one of the principal reasons is this: At Harvard University a man may criticise the existing condition of things, and he may oppose the projects of the majority, or of the administration, and yet he will not be held in the slightest degree to be disloyal; I have seen in other institutions," he added, "that that is not the case." In my now rather long connection with Harvard University, I have found that to be one of its most valuable characteristics. We can criticise each other. By "we" I mean the members of the instructing boards, the members of the government; the alumni in all departments. We can criticise each other with reference to university plans and projects. We can oppose each other most heartily sometimes, and yet there is never any sensation of disloyalty towards the government or towards the institution itself.

I hope you will be careful to keep up this custom of an annual report on the condition of the school, and that we may get from it in successive years, suggestions as valuable as those to which we have just listened. I find them to cover the most important points which have been in my own mind in regard to the future of the Medical School. More particularly, I should like to instance the recommendation of the report about an outside board for admission to the profession of medicine. Why is it that admission to the profession of medicine in Massachusetts is at this disadvantage compared with admission to the prfoession of law? The very last thing the Law School or the Law Faculty would desire would be that their degree should admit to the bar. Other institutions have worked that out most thoroughly. Take, for instance, the school of law which is connected with Columbia College. It was demonstrated beyond a doubt that the fact that the law degree of Columbia admitted to the bar, was a clear disadvantage to the school and to the profession. We have had a public demonstration upon this subject. It is just so in medicine, gentlemen. It is a clear disadvantage in medical education that the degree given by a faculty, a teaching faculty, should admit to the profession. The standard should always be outside, determined by another power. I leave it to you to say what that power should be.

Let me dwell for a moment on another point of the report, which I believe to be a point towards which your own labors might from time to time be directed in your individual capacity and also as an association. Why is it that a full professor's salary in the Medical School of Harvard University — I mean for gentlemen who give all their time to the school, not the gentlemen who are in clinical or surgical chairs — why is it that the salary of a full professor giving his whole time in the Medical School, is lower than in any other department of the university? Is this as it should be? That is the simple fact, it is lower; it is a good deal lower, than it is in the other departments of the university. I submit to you that here is a point on which change should be promptly effected, that it is not fitting that the services of medical teachers should be so much lower than the services of other professional teachers in the same university. At best the scale of salaries for full professors in Harvard University is lower than in many other institutions, but in our Medical School we have the lowest full professor's salary. The gentlemen who serve in those chairs are not of less ability than those that serve us in law or in divinity or in the arts and sciences. They are not of less devotion.

I believe that this all hangs on our English inheritances on this subject. I need not tell you, gentlemen, that in England the profession of medicine, the profession of surgery, does not now to-day stand on a level with the other learned professions. This is not the case on the Continent; it is conspicuously the case in England at this moment. They have the inheritance of the barber and the barber-surgeon still in their minds in England, and we have inherited two things from England, a lower standard of general education in the medical profession, the lower standard of requirement for admission to that profession or admission to the studies of the profession, and we have inherited this lower rate of compensation. I wish we could attach ourselves to the Continental schools of medicine rather than to the English in these regards. We have already far surpassed our English brethren in procuring for the medical and surgical practitioner the right standing in the community, in procuring for the medical and surgical practitioner the same standing which the lawyer or the preacher or the teacher holds; but we have something still to do with regard to the scale of instruction, previous training, required for admission to medical schools; and we have something still to do in the medical schools themselves in putting them on the right and equal basis of endowment which other professional schools, the schools of other professions, have already established for themselves.

I must not longer delay you, gentlemen. I will only say that the progress in medical education in our own university and in the other universities of the land made during the last twenty years, seems to me to be the most considerable progress that has been effected in any department of professional education within the same period. It is simply marvellous. When I look back on what was required of the medical school before the year 1870, not only in our own school but in many other schools, and compare it with what is required to-day, I see a progress which cannot be met in any other department of education, and I know that for that progress we are indebted largely to the prevailing sentiment in the medical profession. The Harvard Medical School would never have been able to carry out its changes of 1870–71, changes which reduced by nearly forty per cent. the number of students in the school, if it had not been for the support received through the expressed public opinion of medical men; and I believe that the change which is now before us, the change to the four-year course, will require the same kind of steady and enthusiastic support. I desire to thank you, gentlemen, for the support which in the last twenty years you have given to our school, to all schools that were endeavoring to advance the standard of medical education. Go on with this excellent work in the years to come.

Dr. William Pepper,

Provost of the University of Pennsylvania.

Mr. President and Members of the Alumni Association of the Medical School of Harvard University: — I am right glad to hear President Eliot bear tribute, I think a fairly deserved tribute, to the progress that medical education has made during the past two decades and I would be very glad, if time permitted, to extend very much his tribute to what the graduates of the Harvard Medical School have done and are doing. But I must resist this temptation, for I want to speak in the moment that is given to me briefly of the practical points that it seems to me there are before us to-day.

I do not think that the country is nearly so ready to-day for the change to a four-year course as it was twenty years ago to a three-year course. Personally, I regard the change to a four-year course, an honest, obligatory four-year course, with much more apprehension than I regarded the change to a three-year course. I believe that it is going to test the resources of the medical schools more severely. I believe that it is going to endanger our classes more severely. I believe that it is going to call for more sacrifices on the part of the Faculties and the graduates who support those higher standard schools than did the change to a three-year course; and a study of the proportion of students who in that former period were taking three years when they might have had their diploma in two years, as contrasted with the proportion who are now honestly taking four years instead of three years where they are only required to take the latter term, would confirm what I say. Particularly would I dwell upon this, because, as I understand the necessity for this change, it is to give more time for thorough clinical work. It is not to give more time to chemistry or to physiology, but it is to give more time to clinical work. And any one of you who knows what the equipment of the clinical department of a medical school should be, who knows the tremendous expense connected with the maintenance of a great hospital, who knows how absolutely dependent a medical school that undertakes to do this kind of clinical work is upon a hospital service, will realize somewhat the risk that our medical schools are taking when they propose to demand four years obligatory study and to promise that at least one year of that shall be practically a hospital year.

I remember very well John Chiene, the great surgeon of Edinburgh, the professor of surgery in that school, which I think has in its medical school to-day 2,500 students, certainly between 2,200 and 2,500 students, telling me that there had been spent upon the Royal Infirmary of Edinburgh, between 1869 and the year he told me, 1886, over half a million sterling, chiefly coming from the citizens of Edinburgh; every time, said he, that Edinburgh has needed help it has appealed to Scotchmen the world over, and has heard from a good many of them. And at that time Chene was formulating appeals with his colleagues of the Faculty for one hundred and fifty thousand sterling more for the Royal Infirmary of Edinburgh; and it was the Royal Infirmary, and the Royal Infirmary alone, which, in the judgment of that shrewd man and great surgeon, had made the school of Edinburgh the brilliant success that it is, the most conspicuous success, practically, in the world to-day among medical schools. Now, we have at the University of Pennsylvania sunk in a hospital plant in the last twenty years a million and a half of money, — land and buildings and endowment, — a terrible drain upon the university, solely to have under our hands control of clinical teaching for the advanced students; and you must have the same. You have a committee. That committee is asking for appropriations for the establishment of a clinical department. That committee must be supported. Harvard Medical School must have absolute control of her clinical facilities. Predecessors of your Faculty wisely forsaw this, and took steps to establish the Massachusetts General Hospital. I have nothing to say; I doubt not that the trustees of that great institution are absolutely wise and absolutely single-minded in the interpretation they put upon their duty; but I do know that one of the terrible strains that is coming upon our medical schools to establish this four-year course is to be the furnishing of a kind, a quality and an amount of clinical instruction that is going to justify the student in giving one year more of his life and paying one year's more fees, instead of getting his diploma at a college granting it in three years, or even in one — and there will always be with us many such granting them in two years. Here, then, is a point to which I would beg your most earnest consideration and your most cordial co-operation with the Faculty. The colleges that can do this work (and we must stand or fall together; no one college will succeed in this, and if this effort to establish a four-year course meets with discouraging results, it will be the most serious set back to scientific training that can be imagined) the colleges that succeed in this, will be those that are supported by their graduates and by their constituencies in providing the suitable clinical instruction. I know President Eliot has thought of this, perhaps earlier, certainly as seriously, as any man in America. I only wish that he had, in fact, what some assign to him here, autocratic power, and that his will might at once be law in this matter, for I would trust most willingly to his wise judgment; and I have, when I have so trusted, never found myself in error.

But if we are to have at the same time a continuous advance in the standard for admission to our colleges, and then to exact a prolonged course of medical study, it will break the backs of the best schools. We cannot alter the social habits of a nation to make them conform to our notions of what the standard of teaching in this or that department shall be; we cannot reconcile any large proportion of our fellow-citizens to seeing their sons or their wards delay, until the age of twenty-five, twenty-six, and twenty-seven years, entrance upon practical life in order that they may win a B.A., or a B.S., and then get their M.D. in a four-year medical school. I am as convinced, as of anything, that it is absolutely necessary for the medical schools that are going to exact a four-years' course to make provision for obtaining the double degree in less than eight years. That this must be accomplished in some way I feel absolutely certain. Mr. Eliot has made a suggestion. It has not been supported. It probably was the very wisest. No man knows the educational organization and system of Harvard as he does. I have no doubt that it was the wisest that meets the case. You have heard Mr. Low quoted. At Columbia they have practically abolished the senior year of their college department, as I understand it. They permit a junior studying for his B.A. degree to go at once into the medical school and to take his senior year in the medical school, getting his B.A. and his M.D. thus in seven years. At the University of Pennsylvania we have established a graded, five-years' course of mixed biology and medicines, which the student may enter at the close of his sophomore year and get the degree of B.S. and the degree of M.D. thus in seven years.

Do not let us handicap medical education too heavily. Do not let us ask our Faculties to turn out thoroughly trained men, trained at the bedside, giving that clinical instruction which alone renders a man fit to take charge of suffering humanity, and deny them the laboratory facilities which are necessary. Do not ask them to set a high standard of admission; a higher standard of entrance examinations, to pass a second examination before a State Board of Examiners, and put the whole of this on at the same time that we appeal to them to take a college course for four full years. If you provide your medical school with endowment, you will accomplish this for a limited number of the highest grade of students, but you will shut out from your doors those whom I would gladly see here, not to swell your ranks, but because I hold that no matter where the doctor goes to practise his calling — and the more remote the point, the further from the centres of education, the further from the chances of professional assistance, the more essential does his thorough, practical equipment become — you will shut out from your doors hundreds of those who are the very men we would be glad to see here. You need more fellowships, more scholarships, in your medical department to-day, upon its advanced scale of medical instruction, than you need in any other department of the university. You must have endowment for your hospital. You must have endowment for your professors' chairs. Do not, gentlemen, leave this pleasant banqueting hall with the notion that the Faculty of Harvard Medical School are entering with any gayety of heart upon this change they have resolved upon with the sanction of your corporation. Do not imagine that these men are going to have a holiday task in carrying this through to success. You will be willing enough to criticise them if the prestige of Harvard Medical School suffers; be equally willing to see to it that their hands are strengthened here and strengthened all over the country where you go. There is not a man in this room who has it not in his power to make this task easier for your Faculty.

All I wanted to say when I rose was to express my great pleasure at being here. I know the history of your medical school by heart. I know its heroes, the great men of the past and no less great men in your Faculty to-day. But I wanted to express with all the earnestness I could put into a few words my prayer to you for co-operation with your Faculty, wise, cordial, not too critical, during what I think is to be the great crisis of medical education in this country.

Dr. W. H. Welch,

Professor of Pathology at Johns Hopkins Hospital, Baltimore, Md.

Mr. President, Gentlemen of the Harvard Medical School Association: — I know something of the zeal and of the high purpose which animate this young Association. I see that your constitution places first among its objects the advancement of medical education. Every medical man is supposed to be able and willing at all times and places to ventilate his opinions on medical education, and I suppose it is for this reason that your president has asked me to say something on this subject. It is an old and trite and thread-bare subject. We know and are agreed as to the advances in our past and existing systems of education. We are perhaps a little tired of the criticisms and of the truths which become commonplace which are drummed into our ears incessantly on this subject. But until we have more nearly reached the goal this topic is one which will not down. It is a tale which, like that of the Ancient Mariner, must be told and retold, and we cannot choose but hear. You will doubtless live through many disquisitions on various aspects of this question on these occasions, and you are wise to fortify yourselves with a good dinner beforehand. I cannot hope to say anything new on this well-worn theme, but I shall try at least to be brief, for it would be heartless to be otherwise in an after-dinner talk on such a subject.

I notice in the report of your first annual meeting, held last year, and also from the speakers to-day, that they have dwelt upon the value of the close union between the Harvard Medical School and Harvard University and have emphasized the importance of strengthening the bond between the school and the university. I know that this idea is thoroughly appreciated here. It is a matter with which I heartily sympathize, and upon which I have had the opportunity of expressing my sentiments in an address before my own Alma Mater. This university idea in medical education means a great deal; and it will, I hope, be kept prominent in your aims. The medical school, according to this idea, is not a mere appendage of the university; it is an integral and co-ordinate part of it, receiving from it and giving to it reputation and glory. I know that the objection has been raised that the medical school is essentially a technological school, that its function is to furnish a bread-and-butter curriculum, that it cannot rightfully claim to share the privileges of the humanities or to rank with the liberal studies. If admitted under the shelter of the university, it is regarded at best as a child by adoption without legitimate claim to inherit the birthright. You have doubtless heard, as I have, this line of argument amplified. This position I believe to be wholly indefensible. Dr. Chadwick, in his remarks before you last year and also to-day, clearly showed that it is contrary to history, and our ideas as to what constitutes a university are largely historical ones. The beginnings of universities in the Middle Ages go back to the school of Salernum, the school of medicine at Salernum; and from that school up to the present time the Medical Faculty has been an integral part of most of the European universities, and of many their chief ornament. Are not to-day in the University of Berlin such men as du Bois-Reymond, Virchow and Leyden, the peers of their colleagues in the other Faculties? But it is wrong to say that the medical school is essentially a technological one or should be a technological one.

Medicine is one of the natural sciences, and it should be the function of the university to see to it that it is studied as such. Many branches of medical study, and those the fundamental ones, are just as legitimate and important and worthy objects of liberal education as any of the natural sciences. They yield to none in fascination or in the physiological significance of the truths which they contain and which are to be discovered, and they lose certainly not any dignity because these truths bear upon the physical well-being of mankind. It is true, I believe, that such medical sciences as anatomy, physiology, pathology, are most fruitfully cultivated as biological sciences without too exclusive reference to their relation to practical medicine. Here it is, as with other applied sciences, with industrial chemistry for instance, that the practical applications of the old and the new truths take care of themselves and that the best results come from searchers who do not make utilitarianism their guiding principle. There is no direction perhaps in which the beneficent influence of university ideas entering into and guiding the work of a medical school, is more apparent than in the proper adjustment of the relations between the technical and the more purely scientific aspects of medical study.

The ultimate purpose of a medical school is, of course, the training of practitioners of medicine. It is to teach how best to prevent, cure, and relieve disease and suffering. But I need not combat here in this presence that narrow and Philistine view which seeks a short cut to this goal, and which fails to see that its training is only to be attained on the basis of a thorough knowledge of what the human and animal body is and does in health and is and does in disease, a knowledge to be acquired only by the preliminary study of physics, chemistry and general biology. Medical education is not completed at the medical school; it is only begun. Hence it is not so much the quantity of knowledge which the student takes with him from the school which will help him most in his future work; it is the quality of mind, the disciplined habit of correct reasoning, the methods of work, the way of looking at medical problems, the estimate of the value of evidence. I remember to have heard Cohnheim say, when called upon to make post-mortem examinations in private courses in Breslau with men whom Frerichs had taught, that he could pick out those men who had been under the training of Frerichs by their way of describing and regarding the clinical and pathological features of their cases.

One of the most hopeful signs of the advancement of medical education in this country is the elevation of the standard, not only of those who study, but also of those who teach medicine. A few books and some oratorical gifts no longer suffice to make a medical teacher, and the aspirants to professional honors are no longer expected to begin their apprenticeship with teaching materia medica and to climb up gradually the various chairs until perhaps they reach that of medicine or of surgery. It is true that profound learning does not carry with it of necessity the special gifts of the teacher, but I believe that this point of view has been too much emphasized. The well-trained students and the fruitful investigators in their special departments, even if they do not possess the greatest facility of expression, are generally the soundest and most satisfactory teachers; and I believe it would be a great thing for this country, for medical education in this country, if the way were open for academic careers in the sense in which it is in the German universities; that is, if young men who do good scientific work, who publish valuable results of original investigation and who acquire reputation among those who are competent to judge them, could look forward with some reasonable assurance to securing positions in our leading medical schools. The incentive of this reward acts as a stimulus to original investigation in Germany. And here, again, the influence of the university is to be felt, the university which is not local and provincial, but is national and, more than national, international and cosmopolitan.

I trust that in this connection I may be permitted to say that Harvard Medical School has recently given a striking illustration of this genuine university spirit in the appointment to its chair of pathology. Personally, I cannot regard your selection altogether with composure. You have taken from me my right hand, my co-worker, and you have shorn us of half our strength. We have become so accustomed at the Johns Hopkins University to academic suitors for our young men that our position has been compared to that of the benignant father of a large family of girls in one of your overpopulated feminine towns in this State, who replied to the young man who graciously requested the privilege of marrying one of his daughters: "Take her, young man, take her. God bless you. Do you know who wants another?" Whatever may be thought of free trade in other matters, free trade in the selection of those who are to fill positions of teachers in our universities, is conducive to vigorous development.

We have every reason to be hopeful for the future of medical education in this country. The current has set irresistibly in the right direction. We are going to have a few excellent medical schools unsurpassed by any in any part of the world. There is going to be a greater disparity than now exists between those schools wisely conducted, equipped with laboratories and hospital facilities and amply endowed, and the great mass of schools which cannot secure these advantages in any adequate degree. We have our own special problems to solve in medical education in this country. We may, and we should, profit by the experience of other countries; but we cannot transfer bodily their systems of education to our own country, and it is healthful that we should build up our own methods and institutions, and that our schools should be in the line of development from our own special conditions and adapted to our own institutions and country. You have realized this here to its fullest extent, and I have been very much interested in the efforts which you have made to solve some of these problems, and especially that which has been touched upon to-day by Dr. Pepper, that pertaining to the advanced age at which those who complete the academic courses in our leading colleges, such as Harvard and Yale, are obliged to begin the study of medicine. These academic courses have developed heedless of the necessities of the professional schools. They are going to retain, of course, all that they have developed, and are going to continue to develop further in the same direction; but the result is that we are placed in an embarrassing and an anomalous condition, a condition without parallel in any other country in the world. Various solutions have been proposed for this anomalous condition. I do not propose to discuss them here; in fact, I know of no place where they have been more fully presented, more clearly presented, and more ably discussed than here; but I wish to express my interest in the efforts which you are making to solve these special problems which pertain to the peculiar conditions of our own country.

We fully realize that at the present day a medical school cannot get along with the simple appliances of former days. Large endowments are necessary, for laboratories especially; and here in the Eastern States, at least, we must look to private philanthropy for this purpose. I think experience teaches that the community at large, even the educated community, takes little interest in matters pertaining to medical education and medical legislation. There is no adequate appreciation of the present state of medical science. The very idea that there is any longer room for special schools and sects and dogmas in medicine, any more than there is in physics and chemistry, is evidence of the ignorance of the general public in this respect. You cannot here at Harvard reach the full height of your endeavor without ample endowments. Is it generally known that in the German universities at least three times as much money is spent in the support of the laboratories as is spent in the salaries of professors —the laboratories connected with the medical school? Some of you may have heard an anecdote which Dr. Ord, of London, tells of the country physician who had been a classmate of Sir William Gull. This physician had not been impressed with the superiority of Sir William's natural endowments over his own. It so happened that at the funeral of Sir William Gull, this country physician, whose career had not been a conspicuous success, rode in the same carriage with Dr. Ord, to whom he confided that he might have made an equal success if he had only had the opportunity, but that he had always been hampered by the *res angostura domi!*

Gentlemen, all who have at heart the promotion of the cause of medical education in this country extend their best wishes for the prosperity of the Harvard Medical School and of this Association, which can do so much to aid the good cause. For two centuries and a half Harvard University has been a model to other similar institutions in this country. May the Harvard Medical School, which has a history of honor and renown in its teachers and alumni and its achievements, continue to be the beacon light in this new era of medical education, an era in which we may reasonably hope that the years of the lean kine are to be followed by years of plenty.

Dr. J. C. White,

President of the Massachusetts Medical Society.

I have been asked to say something about the new four-years' course of our medical alma mater. I shall not be able to tell you anything new, I fear, for the plan must already have been made familiar to you by the prospectus, which has been widely distributed, and the lucid explanation at the recent annual dinner of the Massachusetts Medical Society by Professor Fitz,[1] the chairman of the committee of the Faculty which has labored so assiduously in its preparation. Still it would not be fitting that so important a step in the history of our school should be allowed to pass unnoticed before this Association, especially as it looks to you for encouragment and possible assistance in the early years of its trial.

There have been three periods in the medical department of Harvard University marked by great advances in its plan of instruction.

The *first* was in 1857, when it offered an optional nine-months' continuous course in place of the four months of lectures, which then constituted the universal American method of organized schools entitled to confer the degree of Doctor of Medicine. It was at this time that the Tremont Street Medical School, then conducted as a private undertaking by the teachers in the Medical Department to supplement the term of study furnished by the latter, was merged in the system of the University, and many students availed themselves of these extended privileges. Still at that time a student could get the degree of M.D. from Harvard University by a residence of only four months, and by passing a brief oral examination with a low average in five out of the nine branches taught. In what way the nominal three-years' time required had been passed was of little concern.

Second: In 1871 the school made its nine-months' course compulsory, adopted a graded curriculum extending over three years, and obliged the candidate to pass a thorough examination in every one of the great departments of medicine. Its standard was set so high as to virtually enforce a continuous residence for the full term. This reform, or revolution, as President Eliot well called it, *cujus pars maxima fuit*, was accomplished only after a prolonged contest with its opponents within and without the faculty, and with the foreseen result of a large reduction in the number of students and the income of the school. Then, what was also foreseen, gradually followed: the demonstration that a great university has a higher function than to make "cheap doctors," and that the profession and the public would support genuine efforts to elevate the character of medical education. The plan became an eminent success, and has been adopted by most of the leading schools of the United States.

You know how we have prospered, how the number of students has increased, how enormously the number of teachers has multiplied, how a new medical college has been built by the generous contributions of our citizens, furnished with extensive laboratories, adapted both for teaching and original investigations, how many new departments have been added to the course of study, and how a preliminary entrance examination, and an optional fourth year have been instituted. Such has been the history of the development of the school during the past twenty years.

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[1] See vol. cxxvi, No. 24, page 599 of the Journal.

But having done so much, could she yet not do more? Two years ago in a public address on medical education I expressed the opinion that Harvard "still lacks much of being a great and complete school of medicine," and pointed out in what respects she was inferior to the best medical schools of Europe. Certainly we may talk frankly of our deficiencies in the house of our friends. Among these desiderata I attempted to show how inadequate was a three-years' course of study, and how entirely the optional fourth year had failed to correct this fault in our system. The importance of a required examination in every department taught was also insisted on.

The Faculty has for a long time recognised the importance of an extension of its period of study, but has been deterred from its adoption through fear of its effect upon the pecuniary resources of the school. The cost of conducting its great laboratories, and of paying a corps of seventy teachers of all grades, ridiculously inadequate as its scale of salaries has been, is very great. Its income from endowed funds is trifling, so that the school could not be carried on if the income from students' fees should materially diminish. It is not to be wondered at, therefore, that the Faculty has gone slowly in this matter. At last, however, the school, without any assurance of outside support, has boldly put this measure into execution, and has announced that, beginning with the academic year, 1892–93, the required course of study will cover four years. That date marks, therefore, the *third* great period of advance in its history.

The novel features of the plan are:

(1) The nominal requirement of general chemistry at entrance; but as the means of acquiring a sufficient knowledge in this branch do not exist in the preparatory schools in all parts of the country from which our students are drawn, it is evident that a considerable proportion of the entering classes must be conditioned in this study on admission, and that it must hold its place in the first year's curriculum for some time to come.

(2) The recognition of the possibility of obtaining some knowledge in subjects, which have hitherto constituted the first year's course of the school, in non-medical institutions of learning before entrance, whereby admission to advanced standing may be facilitated, and the whole period of university residence, including the undergraduate and professional, be reduced to seven years again. Thus students coming from colleges or scientific schools where anatomy, histology, physiology, and general chemistry are taught, may be admitted to the second year, on passing an examination in these subjects at entrance.

(3) More time will be given to practical instruction in clinical chemistry and bacteriology.

(4) Study of the general clinical branches will be extended over three years, instead of being limited to two years, as heretofore.

(5) An examination will be required in most of the special departments in which instruction is given. This will ensure the attendance of students upon all courses, and at least some knowledge of every disease. Hitherto, students have been permitted to graduate without having received, although given, the slightest instruction in many common diseases they might meet in the first week of their practice.

Electives, I regret to say, still form a material part of the new system of instruction, an examination in them of at least three hours in the fourth year being required. I had hoped that this still all too brief period of four years would have been wholly given to an equable advance in every branch of medicine for every student alike under the direction of his teachers, and that none of it would have been devoted to preparation for special practice, which should be taught only in graduate courses. Certainly, every specialist needs, at least, four full years of education in general medicine.

Such are the principal changes in the new course provisionally adopted by the Faculty. I need not assure you that, however its individual members may differ in opinion as to some of its features, they will all labor alike to make it a success so far as their own efforts are concerned. But we look upon you also as active co-laborers in our undertaking. There is not a member of this Association who cannot do missionary work in this attempt to elevate the standard of medical education, and thus the profession of medicine in this country. This is especially true of those who live beyond the immediate districts from which our students are generally drawn. You can one and all do much by advising students and your colleagues where the most thorough medical training which this country affords may be obtained. They can be made to feel that they are thus contributing to the success of our undertaking.

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Clinical Department.

SPONTANEOUS REDUCTION OF A CHRONICALLY INVERTED AND COMPLETELY PROLAPSED UTERUS.[1]

BY EDWARD JACOB FORSTER, M.D.

In November, 1887, I had the fortune to report the somewhat rare accident of an acutely inverted uterus; it is now my privilege to report a rarer form of inversion of the uterus, which recently came to my service at the Boston City Hospital; namely, complete chronic inversion of the uterus with procidentia, or perhaps more properly, inversion of both uterus and vagina.

Hart and Barbour state that "prolapsus, plus inversion, etc., is a rare condition." The case that they represent by Fig. 222 they call "quite unique."

The point of greatest interest and the chief reason for reporting the case somewhat at length is the fact that self-reposition of the uterus occurred.

That an inverted uterus can reduce itself without manual assistance after the inversion has become chronic, that is, lasted over a month, was formerly considered an impossibility.

In his last edition (1891), Thomas writes: "After all, there is nothing more astounding in the fact of spontaneous inversion of an undistended uterus than there is in the spontaneous reposition of one which has been long inverted; and this we have, with the positive testimony of scientific and reliable men now on record, no possible justification for doubting. Of late the validity of both these phenomena has been denied.

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[1] Read before the Obstetrical Society of Boston, April 9, 1892.

There is nothing easier than the rejection of the testimony of others and the discrediting of deductions which we ourselves have not drawn. When De la Barre presented his case of spontaneous reposition to the Academy of Surgery, Baudelocque was appointed a committee to examine into it, and reported that it was 'totally false.' Some years afterward he met with a very similar case, and yielded to the evidence of his own senses a credence which he had presumptuously denied to the assertions of another. Spiegelberg reports a case of spontaneous reposition while the patient was straining at stool."

Dr. J. Matthues Duncan, in a lecture given in 1884, says: "A recently inverted uterus may be spontaneously replaced, but such a fortunate result very rarely comes to a chronic case."

In regard to the termination of cases of inversion, Thomas says: "As a rule, it may be stated that inversion continues until relieved by treatment, and yet even this is not without exceptions. The womb has been known, under these circumstances, to replace itself by its own contractions years after its occurrence, when the accident has happened after delivery. Twelve such cases have now been placed upon record: three by Meigs, and one by each of the following observers, — Spiegelberg, Leroux, De la Barre, Thatcher, Rendu, Shaw, Baudelocque, Foujen, and Huckins. Even admitting the undoubted authenticity of these cases, spontaneous reduction must be regarded only as a curiosity, and not as a process to be anticipated."

As I have failed to find other cases than those given by Thomas, the case which I report to-night will be the thirteenth to go on record.

Mary S., entered my service at the Boston City Hospital November 21, 1891, with the following history: Born in Ireland, sixty-six years of age, housekeeper and a widow. Has had seven children and two miscarriages; all her labors difficult, and five instrumental. Her last child was born twenty-six years ago. One year ago she fractured her left thigh leaving some impairment of motion of the hip-joint. This interfered somewhat with the ease of the operation of repairing her perineum.

She entered the hospital for "falling of the womb," to use her words, which has troubled her to some extent for the past ten or twelve years, but has never caused her any other inconvenience than a simple feeling of bearing down until the last two (2) months, since which time the womb has protruded between the thigh when up and about and causing her considerable pain, which was relieved by lying down when the womb could easily be pushed back.

Has had considerable leucorrhœa, at times the discharge being tinged with blood. On examination, the patient lying upon her back, a mass the size of a mandarin orange was found protruding beyond the labiæ. The mass was readily seen to consist of three parts, an upper and lower representing the anterior and posterior lips of the cervix; between these a rose-shaped appearing body covered with an abraded and ulcerated mucous membrane having a slight depression in the middle, but which the sound could not enter. A careful examination proved the presenting mass to be the uterus completely inverted.

The accompanying excellent photograph taken by Dr. Ames, one of the house-officers, gives a better idea of the relations of the parts than any description I can pen.

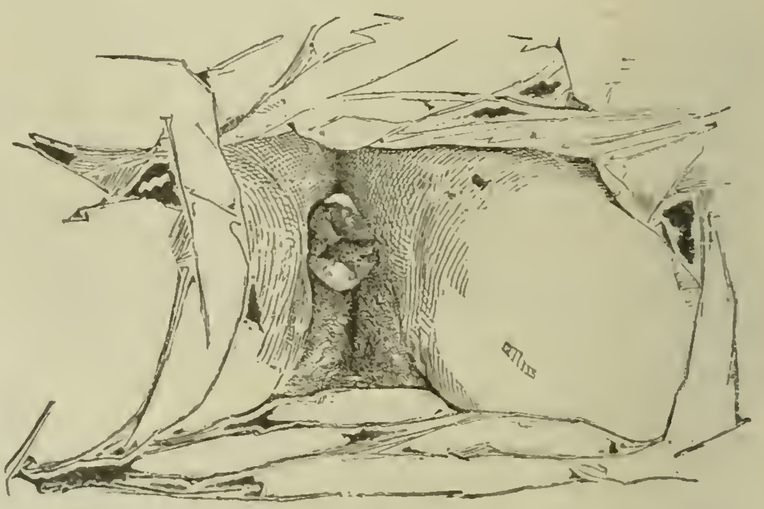
The patient very willingly allowed the photograph to be taken, remarking that she was certain her friends would not recognize her by it.

No attempt to reduce the inversion was made at this time, as I desired, before so doing, to first restore the abraded and ulcerated mucous membrane to a healthy condition. The parts were therefore only kept scrupulously clean and aseptic and the ulcerated sinus touched with carbolized iodine, and a corrosive pad applied.

On December 2d, the protruding surface looked quite healthy and smaller, and measurement by the sound gave a depth of two inches from the end of the sulcus to the extremity of the cervical lips.

On the 11th, the inverted portion was only about the size of a dime, and showing just above the posterior lip. The prolapsed uterus was replaced, and remained within the vulva.

On the 16th, the inversion had entirely disappeared, leaving a uterus with a very large bilateral tear of the cervix — so large and extending back so far on either side, as to offer very little if any resistance to a return of the inversion if from any cause the abdominal pressure should be increased.



To remove this possibility, on the 6th of January, I operated by removing a large wedge-shaped piece from each side, closing up the tears and materially reducing the size of the uterus.

The convalescence from the operation was uneventful. The uterus was easily retained within the vulva; but before any operation was attempted upon the perineum, the patient, for domestic reasons, left the hospital, which she re-entered February 5th. Vaginal examination found the uterus well up in its place.

On the 18th, the perineum was restored by operation, and with the patient's consent, the vulva nearly closed.

On the 7th of March the patient was discharged, the perineal operation having been successful.

From the history given by the patient, the prolapse had evidently existed for some time, but how long I have no means of knowing. The procidentia had been noticed only two months before entrance to the hospital. When or how the inversion of the uterus took place, I can offer no opinion, excepting that I doubt if it would have occurred if the cervix had not been so badly torn.

Omaha druggists are opposing the practice of giving commissions on physicians' prescriptions, as also the closely related custom of druggists furnishing office-room, free of charge, to certain physicians.

A CASE OF COMPLETE INERTIA UTERI AT FULL TERM: LABOR INDUCED BY ABDOMINAL PRESSURE.[1]

BY JOHN M. THOMPSON, M.D.

It becomes my special privilege and pleasure to report a case of complete inertia uteri at full term, and to show how labor was finally induced. Apropos of my case, I am reminded that in a recent issue of the *Boston Medical and Surgical Journal*, Dr. Marshall L. Brown, of Allston, calls attention to "A New, Safe and Sure Method to Expedite Difficult Cases of Labor," in which he recommends abdominal pressure synchronous with the natural labor-pains by means of the obstetrician's hands. The method adopted by the writer was materially the same as referred to by Dr. Brown, yet the circumstances of the case were essentially different and the indications for interference on the part of the physician vastly more urgent.

Mrs. D., aged twenty-seven, a small, fairly well-nourished woman, weighing about 120 pounds, was taken in her third labor on the evening of Thursday, February the 4th. Inasmuch as her previous labors had been of very short duration, — in point of fact almost precipitate, it was thought advisable to send for a physician. The writer arrived that evening about eleven o'clock, when he learned she had been uncomfortable for about four hours; but from her own knowledge the pains were not *bona fide* labor pains, yet she felt confident that the "waters had broken." Upon examination per vaginam and by external palpation, I found a head presenting with its occiput towards the left and anterior, while the os was soft and dilated enough to admit the tips of two fingers. Despite some nervousness and slight nausea, the mother promised a natural labor. I remained by my patient for nearly two hours, during which time the uterus did not contract once. From this I decided to return to my office and await developments. At my next morning's visit, I was surprised to find that the patient had spent a sleepless night, entirely free from pain, save a few cramps in the thighs, which compelled her to remain in bed. I left her this time with instructions to summon me when labor pains really began.

I could not lead myself to believe that it was a "case of false alarm," as she assured me that her last catamenia ceased on the previous 11th of April.

My next summons was at seven o'clock on the morning of the 10th. Upon my arrival I learned that since my last visit she had had no pain till that morning, when she experienced, to use her own expression, "a few good ones," though indefinite and irregular. Examination per vaginam this time found the os no larger than at my first visit, yet I was pretty certain that the bag of waters had not ruptured. At 2.30 P. M. of the same day I responded to a call, which implied that my patient was in a very uncomfortable condition. When I arrived, at about three o'clock, she was extremely nervous, vomiting frequently, and very weak, — in short, in such a condition that she was willing to submit to any form of treatment that would hasten or assist in the delivery of her child. Although up to this stage no progress had been made, it occurred to me that the womb was ready and willing to contract, but wanted some help. So, — and more particularly in view of my patient's condition, — I resolved to try abdominal pressure. With my left index finger in the os, in order to determine the efficiency of my method, and my right hand spread over the fundus, I began to make firm and steady pressure in a downward and forward direction. To my delight I found that the os began to dilate and that the external force produced a natural contraction of the uterus, for I observed that upon removing my hand the pain and contraction continued. This procedure was kept up at intervals of from five to ten minutes according to circumstances, when soon "the waters broke" and I could feel the perineum distend. By this time very little abdominal pressure was required to promote contractions, which, by seven o'clock in the evening, were efficient enough to produce a healthy, well-nourished male child weighing eight and three-quarters pounds.

My patient made a good recovery and was able to be about attending to her household duties on the ninth day. In this connection it is interesting to note that from the moment her child was born to the time when I discharged her as relieved, she had, nor required, nothing in the way of medication, except an antiseptic pad to the vulva.

Since my experience in this case, it has been a question in my mind whether I would be justified in adopting this means in other cases. I am fully convinced, however, that my efforts in this particular one — a weak, nervous woman, who had considered herself in actual labor for six days, and in all probability somewhat overdue and unable to retain anything on the stomach — were crowned with success. Had I left the case to nature, I fear that such an extreme state of exhaustion would have set in as to render her labor extremely painful and considerably hazardous.

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AN UNUSUAL CASE OF PUERPERAL SEPTICÆMIA.[1]

BY JOHN M. THOMPSON, M.D.

I TRUST it does not seem like presumption on the writer's part to report a case of puerperal septicæmia in these days of antiseptic midwifery. It is now thoroughly agreed that the cause of such cases can be traced to faults of omission or commission on the part of the obstetrician or nurse; still, notwithstanding all this, some consideration should be shown the physician who does not enjoy the advantages of a lying-in-hospital; for there is no doubting of the fact that in many cases, in spite of his best efforts to carry out to the letter the theory of antisepsis, the physician in private practice is handicapped — whether it be from bad hygienic surroundings, indiscretion of the patient, failure or inability of the nurse to conform to the physician's orders, is difficult to state. All these factors, however, contribute their mite in thwarting the efforts of the painstaking, intelligent physician, who, I fear, is oftentimes unjustly blamed for what under the circumstances could not be averted.

The following case is in line with those reported some time ago by Dr. J. G. Blake, and, if for no other reason, I am sure it will contain something of interest.

The subject of this paper — a young married woman, twenty-seven years of age, well-nourished, of florid complexion, yet feebly vitalized — was seized on the evening of December 25th with *la grippe*, which manifested itself in the form of nausea, vomiting, restlessness, insomnia and pains in the head and loins. Most of these symptoms — particularly the gastric — persisted until January 8th, when she was taken in her first labor, which lasted about nine hours and produced a healthy female child weighing seven pounds. There was nothing apart from the normal about her confinement, save a slight perineal tear, which was completedly closed under antiseptic measures with one silk suture.

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[1] Read, by invitation, before the Obstetrical Society, of Boston, April 9, 1892.

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The patient continued apparently well, without any increase of temperature or pulse, till the end of the fifth day, when she experienced a chill. The thermometer at this time registered 101.5°, pulse 100, with nothing noticeably offensive about the lochia, while there was no headache nor abdominal pain. Thinking the sudden change in the patient's condition might be due to fæcal impaction, and with the advice of Dr. C. M. Green, I administered two five-grain doses of calomel, followed by a saline at an interval of four hours. This medication proving fruitless, an enema of soap and water was then given, and the bowels were unloaded very satisfactorily. In about twelve hours from the time of the first chill, a second one occurred, more severe, and ushered in a dysenteric diarrhœa. The stools were very offensive, bloody and tarry, resembling very closely those seen in malarial dysentery. The lochia now began to be very offensive, purulent and free; the temperature chart showed a morning fall and evening rise, vacillating between 100° and 103.5°, while the pulse ranged between normal and 140. The patient's general condition was one of prostration and sleeplessness, yet there was no gastric nor abdominal symptoms present. I now began to fear that septic poisoning was a certainty, and hastened to consult with Dr. J. G. Blake. Examination per vaginam found a sanguineous, purulent discharge oozing from an os almost completely covered with septic membrane, which involved a considerable portion of the endometrium. The perineum was healthy, as well as the vaginal walls. No time was lost in curetting the uterus, where no portion of the membranes had been retained, and an intra-uterine douche of 1–5000 bichloride given till a clear solution appeared. A freshly made, five-grain pencil of iodoform was passed into the os, and the vagina packed with iodoform gauze, with an aristol tampon against the uterus. These measures were carefully carried out every morning for six days till the uterus cleared up, the lochia became sweet and the temperature and pulse dropped to normal. The patient partook freely of champagne, brandy and nutritious diet, and was given six grains of bisulphate of quinia per diem. The intestinal discharges were controlled by sugar of lead and opium. and other symptoms as they arose met with appropriate treatment. She made a good convalescence, and was soon able to resume her household duties with former vigor and strength.

A somewhat interesting experience was found in my efforts to produce sleep. Until the evening of the second day of the fever she obtained only an occasional "forty winks," when Sulfonal-Bayer followed by hot milk was given. Two fifteen-grain doses, four hours apart, produced no result. The next evening three hourly doses of chloral and bromide (ten grains of the former and fifteen of the latter) met with a similar fate. The following morning three drachm doses hourly of bromidia, and in the evening paraldehyde, one drachm repeated in four hours, produced no influence on the insomnia. At 9 o'clock on the evening of the fifth day it was thought advisable to administer some ether, but the anæsthetic increased rather than diminished the patient's excitability. It did seem at this time as if the list of reliable hypnotics had been exhausted, so, almost as a last resort, one-quarter of a grain of morphia sulphate was given hypodermically, and a sweet, refreshing sleep of six hours followed.

The interest which this case possesses lies in the cause of the septic process, which in no way betrayed itself till the end of the fifth day, when we find the usual chill with rise of temperature and rapid pulse, but no gastric nor abdominal symptoms. When a strict adherence to the theory of antisepsis is carefully carried out, and there has been no interference on the part of the doctor or nurse, one naturally asks: Can the cause be laid at the door of the attending obstetrician? It does seem as if the susceptibility of a patient suffering during labor from *la grippe*, and thereby considerably devitalized, should cut some figure in the way of preparing a soil fertile enough for the formation of a septic process. However, even though the worry and fret attendant on such cases be made a matter of personal moment, is it not gratifying to think that by timely interference we can cut short the destructive inroads of the deadly germ?

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Medical Progress.

REPORT ON DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D.

ETIOLOGY OF DIPHTHERIA.[1]

Baginsky, in his recent and important investigations on the cause of diphtheria, states that he has accepted the Löffler bacillus as the criterion for the character of the sore throat, and that in every case the method of D'Espine and Marignac was used to determine its presence.

In ninety-three cases of membranous sore throat, the bacillus was found sixty-eight times, with a mortality of forty per cent., and it will be well to translate the conclusions arrived at by the author.

(1) "There are two forms of disease which produce clinically the same changes upon the tonsils and the mucous membrane of the pharynx. The characteristic change in these cases is the appearance of dirty grayish-white or greenish pseudo-membranous infiltrations in the diseased tissues. As both forms are accompanied, in the same way, by fever, prostration, and swelling of the submaxillary lymphatic glands, a clinical separation becomes impossible. And yet these two forms differ *toto cœlo:* The one produced by the bacillus of diphtheria is very dangerous, producing a mortality of nearly fifty per cent.; the other, caused by staphylococcus and streptococcus (at least these micro-organisms are constantly found, so that it is probable that they are the cause) is harmless, and runs its course without endangering life.

(2) "These two forms can be differentiated by bac-

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[1] Baginsky: Archiv. für Kinderheilkunde, Bd. xiii. Forchheimer: International Medical Magazine, No. 1, p. 81.

teriological cultures only, but then with absolute certainty. This test can be made with great facility by cultivating small pieces of membrane upon Löffler's serum, after having washed them in a two per cent. solution of boric acid. This method does not take up as much time as an examination for tubercle bacillus; it leads to positive conclusions without the use of dyes, with practice even by macroscopic inspection of the cultures."

The conclusion that there are at least two kinds of diphtheritic membranes is one that every thinking clinical observer must have arrived at; the fact that these forms cannot be separated upon purely clinical evidence is also an old one, but the application to our every-day work is one whose importance cannot be overestimated. The apparent ease with which the differential diagnosis can now be established will make the method very much more valuable. It is hardly necessary to add how much practical importance must be attached to any method which implies early isolation, proper (possibly successful) treatment, and last, but not least, a scientific prognosis.

Next comes the treatment of diphtheritic croups by tracheotomy and intubation. The differential diagnosis by means of the above-mentioned method has, unfortunately, not been established, so that all the sixty-eight cases of tracheotomy are reckoned under diphtheritic croup; 33.8 per cent. recovered. It will not be difficult, hereafter, to make this differential diagnosis one of the greatest clinical importance, and it will be interesting to observe the tidal wave that will sweep the non-believers into the right position of believing in the existence of a membranous but non-diphtheritic croup. The intubations (Aronson) are followed by the same results that most German observers have obtained — fourteen cases with one cured: fortunately, we do not hear anything concerning decubitus, as in Schwalte's cases, but very much trouble in feeding, and the conclusion that intubation is especially valuable in the stenoses following diphtheria, especially in difficult décanulement.

The study of post-diphtheritic paralyses (thirty out of one hundred and forty-four) has led Baginsky to the following conclusions:

(1) The more intense the diphtheritic process in the pharynx the earlier does paralysis follow. We usually have paralysis of the soft palate; it appears consecutively with albuminuria or well-developed nephritis, affects the heart often and early, and the children die with symptoms of heart-weakness.

(2) Paralysis, coming on more slowly or later, associated with non-gangrenous or non-septic processes: generalization of paralysis, but especially localization to the diaphragm, is dangerous. Paralysis of the diaphragm is more common than is usually accepted. It is characterized by almost complete aphonia, cough, with difficult expectoration of copious, foamy and viscid mucus, dyspnœa with thoracic respiration. The affection is usually, though not always, fatal; death occurs with asphyxia, bronchitis or broncho-pneumonia, or suddenly with complete cessation of respiration.

(3) The manifestations on the part of the heart are manifold; they vary from diminution in tension in the arteries to arhythmia with symptoms of stasis. Auscultation shows disappearance of the first sound, indistinction of both sounds, duplication of the first sound. At the same time there is a rapid, sudden, and very great swelling of the liver, ominously prognostic. Cheyne-Stokes respiration may occur, but recovery may take place after the appearance of all these symptoms. The best results were obtained by subcutaneous injections of sulphate of strychnine, 0.003 to 0.004 *pro die*, in three injections, and of camphor. Arnheim comes to the conclusion that diphtheritic paralysis has as its pathological basis a polyneuritis; in Virchow's words, neutritis parenchymatosa et interstitialis proliferans.

The last paper is devoted to an examination of lower forms of life in the pneumonia consecutive upon diphtheria (Strelitz). The following were found: (1) The diplococcus (Fränkel Weichselbaum). (2) Staphylococcus pyogenes aureus et albus. (3) Streptococcus pyogenes. (4) Freidländer's bacillus. (5) Löffler's bacillus.

Fränkel's diplococcus was found most frequently, and is supposed to be the most common, although not the exclusive, cause of the pneumonia produced.

TUBERÇULAR PERITONITIS.[2]

The following case is reported. The patient was a girl, three and one-half years of age. Two of her paternal uncles were tubercular. She was born at term, and nursed by her mother. At the age of two years she had whooping-cough, which lasted five months. A short time afterward she was attacked with diarrhœa, and the abdomen began to enlarge and show clear evidence that it contained fluid. The heart and lungs were normal, the liver and spleen were not hypertrophied, the urine was normal. A diagnosis of tubercular peritonitis was made and the child kept under observation one month. At the end of this period she was worse, and abdominal section was performed. Nearly two litres of transparent yellowish-green fluid were removed from the abdomen. The peritoneum was injected and tubercles were scattered over it. There was no irrigation, the wound was sutured, a drainage-tube was used, and iodoform dressings were applied. At the end of three weeks fever and diarrhœa recurred and the fluid began to accumulate again. The wound was reopened and the peritoneum found thickened and œdematous. Adhesions sprinkled with tubercle united the folds of the broad ligament. The cavity was irrigated with boracic acid solution, iodoform was sprinkled upon the peritoneum, a drainage-tube was applied and the wound sutured. This operation was followed by complete success, the patient going home cured in six weeks. Twenty cases of abdominal section for tubercular peritonitis have been reported in children from two to fifteen years of age. All resulted in apparent cures.

TUBERCULOSIS IN CHILDREN: PRIMARY INFECTION IN BRONCHIAL LYMPH NODES.[3]

The object of this paper is to illustrate and strengthen the recently developed fact that in the great majority of cases of tuberculosis in children the seat of primary infection is in the lymph nodes clustered about the bifurcation of the trachea and the roots of the lungs. Tubercular infection in the tissues of the body means tubercle bacilli, their presence and products. The all-important source of germ supply is the dried, pulverized sputum of phthisical patients. The bacillus gains entrance to the body by (1) aspiration, through the respiratory tract; (2) ingestion, through the intestinal tract; (3) accidental inoculation, through abraded surfaces; (4) the placental circulation, congenital. The sources here mentioned are in the order of their importance and frequency. The first avenue of entrance, the respiratory tract, is almost exclusively the one of interest to us. In speaking of the comparative ages of the tubercular lesions, the discrete, miliary tubercles are assumed to be of more recent formation than cheesy masses, and the cheesy masses more recent than the calcareous masses or the shrunken, dense fibrous tissue or their cavities. From the one hundred and twenty-five cases, whose records contain the details suitable for our purpose, thirty-four must be discarded, because the ravages were so extensive that the seat of primary infection was not clear; the bronchial nodes were large and cheesy, likewise the mesenteric; the lungs contained tubercles, so did the liver, spleen, kidneys, and meninges. Twenty cases of general tuberculosis (that is cases in which there were tubercles in the lungs and in other organs besides) showed that apparently the oldest lesion was in the respiratory tract. In forty-two cases of general tuberculosis the only cheesy masses were in the bronchial lymph nodes. The miliary tubercles involved, besides the lungs, one or more organs of the abdominal cavity or the meninges. In nine cases the tubercules of the body were limited to the bronchial nodes and the lungs, the latter containing only discrete, glassy, miliary bodies, while the bronchial nodes were far advanced in degenerative changes. In thirteen cases, there were tuberculosis of the bronchial nodes only. Most of these patients died of infectious diseases, many of them after a few days' illness, from measles, diphtheria, with invasion of the larnyx and bronchi, and pneumonia. We have shown that in a vast majority of our cases the oldest lesion was in the respiratory tract; among them was a very significant group of nine cases in which the bronchial nodes were cheesy, and the only remaining tubercles of the body were in the lungs, and were discrete, glassy, miliary bodies, obviously recent. The pointing here is unmistakably to primary node infection and secondary involvement of the lung. Finally there were thirteen cases, in which the tuberculosis was confined to the bronchial lymph nodes, there being no other tubercles in the body. As a short statement of the manner of infection in most cases of spontaneous tuberculosis in children, the following may be allowed, especially as it is wholly borne out by authorities. Tubercle bacilli enter the respiratory passages with the inspired air, lodging in the mucus of the air-passages or the alveoli of the lungs; they may pass through the mucous membrane at any point, be taken into the lymph spaces, traverse the lymph canals to the nearest nodes, and be retained. Their subsequent career depends upon the power of the tissues to withstand their tendency to grow and reproduce the lesion in which they were bred. Accordingly to this power of resistance, they will die or remain inactive for a long period, or will develop nodes known as scrofulous (as the authority of Wyssokowicz) or may lead on, when the powers of resistance are depressed, to such changes as have been detailed in the paper.

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[2] Alexandrof: Rev. Mens. des Mal. de l'Enf., September, 1891. Archives Pediatrics, April, 1892.

[3] New York Medical Journal, 1891, Vol. iii, p. 201. Northrup: Archives of Pediatrics, January, 1892.

APPENDICITIS IN A CHILD TWENTY-TWO MONTHS OLD.[4]

Four days previous to the operation, the child was seized with what was judged to be an attack of colic. The pulse was very rapid and the temperature 104° F. There was marked abdominal distress, frequent vomiting, and the bowels were constipated. The child was just recovering from an attack of summer diarrhœa. In the next two days, although the temperature had gone down, ranging from 100° to 101° F., the pulse was still proportionately too fast. The abdominal symptoms continued more or less pronounced, requiring opium. A small tumor situated in the right abdominal region had been recognized.

On the day of the operation, the pulse was 140, the temperature 101° F., the abdomen somewhat distended and painful, more especially over the region of a small tumor situated with its greater part above McBurney's line. There was no special point of tenderness. The operation was done in the usual manner. The incision was made in the right linea semi-lunaris. The tumor, agglutinated intestines, and omentum were isolated from the general peritoneal cavity by the careful packing of iodoform gauze between the parietal peritoneum and the intestines about the tumor. The omentum was then separated from the surface of the tumor and the intestines were gently teased apart until the escape of characteristic stinking pus indicated the opening of an abscess. After several drachms of pus had escaped, the separation of the intestines was continued until the appendix was recognized, when it was freed from its adhesions, brought up into the incision and tied off from its mesentery and close to the cæcum by a double silk ligature, and then cut away. It was much enlarged, in part gangrenous, and contained three perforations. No foreign body could be discovered. The usual dressings were applied. The convalescence dated from the day of operation, and was uneventful.

A CASE OF APPENDICITIS.[5]

The patient was a lad, six years old, who had been eating largely of grapes on the preceding day. On the evening of the 7th of November, 1890, he came home complaining of severe pains in the stomach and abdomen. He was also vomiting, and had frequent painful movements from the bowels. The next day the temperature was 101.7°, the pulse 116 (sleeping), and there seemed to be considerable tympanites. The pain still persisted over the region of the cæcum, and the temperature varied between 98.5° to 101.5°. On the 15th there could be felt, but very indistinctly, a deep indurated tumor in the right inguinal region, just above and to the left of the right anterior superior supinous process of the ileum, and also noted retraction of the thighs. Nothing could be determined by the rectum.

In spite of improvement in his general condition, the pain and induration remained, so that on November 20th an incision was made and a small abscess situated behind the ascending colon was opened with a discharge of pus and blood. Another smaller abscess was opened behind the cæcum. At the bottom of this last cavity the appendix could be indistinctly seen perforated and firmly fixed by adhesions. The lower part of the abscess cavity was then explored, and it was found necessary to make a counter-opening through the lumbar region, through which a drainage-tube was passed. The child made a good recovery.

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[4] Medical News, Philadelphia, 1891, vol. ix, p. 513. Archives of Pediatrics, March, 1892.

[5] Wackerhagen: Brooklyn Medical Journal, 1891, v. 642. Archives of Pediatrics, April, 1892.

CONGENITAL UMBILICAL HERNIA.[6]

Dr. J. R. Hinkson reports the case of an infant ten hours old, in which laparotomy was performed with subsequent recovery.

The infant, a female, was healthy in every respect except for the presence of a tumor occupying the greater portion of the anterior abdominal wall. The tumor was covered by the expanded tissues of the cord and the peritoneum, and contained the liver and small intestines. It was elliptical in shape and projected an inch and a half beyond the surface of the abdomen, measuring fully two inches and a half in its transverse and about four inches in its vertical diameter. It was not pedunculated, and extended from the ensiform appendix to within an inch and a half of the pubes. The covering was quite tense and semi-opaque, with a few small cysts. No vessels were visible, but the liver could be plainly felt at the upper part of the tumor, which was most prominent The cord was in the median line at the inferior apex.

The child was ten hours old at the time of operation. Having induced complete anæsthesia, and washed the abdomen with a solution of mercuric chloride, the cysts in the covering were first punctured, allowing a little clear serum to escape. An incision was then made in the upper part of the tumor and enlarged by cutting on a grooved director sufficiently to admit a finger. About half an ounce of sanguineous serum flowed from the wound. On introducing a finger, some adhesions were found over the right lobe of the liver, which were easily broken up. The membrane adjacent to the umbilical vein and the hypogastric arteries were then dissected away and the vessels ligated. The membrane was finally removed in connection with the suspensory ligament of the liver. The edges of the opening were then pared with scissors and the abdomen was closed by first introducing several interrupted sutures of catgut about the middle of the wound, which was afterwards completely closed by a continuous suture of catgut. A drainage-tube was inserted between the stitches at the middle of the wound and an antiseptic dressing applied.

The closure of the abdomen proved to be an almost insurmountable task, on account of the great want of tissue. The tension on the sutures was so great at the middle of the opening that, had they been immediately drawn tight enough to bring the edges in apposition, they would certainly have torn out. To avoid this difficulty, both interrupted sutures were drawn as tight as permissible and clamped with artery forceps, the procedure being repeated several times until finally the edges were approximated. During this part of the operation the intestines frequently escaped from the abdominal cavity and were only replaced after repeated trials, much care being required to keep them from being tied in the sutures.

The operation occupied an hour and a half, after which the child vomited twice and then slept about a quarter of an hour, after which it nursed well and behaved in no way differently from any healthy child. Three days later, when dressing the wound, the catgut sutures, which had softened, gave way, none of them having pulled through, and the wound opened for nearly its entire length. Under chloroform, sutures of wire were inserted. At the next dressing, five days later, the wound had all healed except an inch and a quarter at the middle. This part of the wound was allowed to heal by granulation. The child made a good recovery.

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

(Concluded from No. 1, page 22.)

Meeting, April 9, 1892.

Dr. J. M. Thompson reported by invitation,

A CASE OF COMPLETE INERTIA UTERI AT FULL TERM; LABOR INDUCED BY ABDOMINAL PRESSURE,[1]

and also

A CASE OF PUERPERAL SEPTICÆMIA.[1]

Dr. C. M. Green said he had resorted to abdominal pressure in the latter part of labor with good results. He had not used it early in labor and should be a little afraid of doing injury, to the thin uterus, at this time.

Dr. Edward Reynolds would wish to be sure that the ovaries and tubes were normal before applying much pressure.

Dr. Cotting referred to the method used by Dr. Wm. E. Coles, of folding a sheet around the abdomen, twisting it at the back, giving in some cases great relief and aiding in the delivery.

Dr. Provan said that in the earlier part of his practice he had found the method of abdominal pressure of some use, but he had had cases of peritonitis which he had attributed to it. In the latter part of labor it is certainly a useful practice.

Dr. Green referred to the importance of recognizing septicæmia early, as it could in those cases be dealt with successfully. He had, however, seen a case in consultation a short time ago, on the fourth day after delivery. The patient was moribund with septicæmia, and died in two hours.

Dr. E. J. Forster reported a case of

THE SPONTANEOUS REDUCTION OF A CHRONICALLY INVERTED AND COMPLETELY PROLAPSED UTERUS.[2]

Dr. Forster first reviewed the literature of the subject, which showed the rarity with which spontaneous reduction takes place in these cases, only twelve such cases being on record.

The patient, sixty-six years of age, mother of seven children, had complained of falling of the womb for several years, the uterus protruding between the thighs for two months. Examination showed the uterus to be completely inverted. With rest in bed and attention to the eroded mucous membrane, the inversion gradually disappeared, and in two and a half weeks the uterus was in normal position, the inversion and prolapse having disappeared. A large bilateral tear of the uterus was then sewed up, and later a torn perineum. The cure was perfect.

It is reported that Dr. Robert Koch has interrupted his bacteriological studies by marrying a popular danseuse.

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[6] New York Medical Journal, 1891, vol. iii, p. 586. Archives of Pediatrics, January, 1892.

[1] See page 41 of the Journal.

[2] See page 39 of the Journal.

Recent Literature.

Psycho-Therapeutics: or Treatment by Hypnotism and Suggestion. By C. Lloyd Tuckey, M.D. Third edition, revised and enlarged, with seven diagrams. 8vo, pp. xvi, 321. London: Baillière, Tindall and Cox. 1891.

Dr. Tuckey's work has won the well-merited honor of a third edition in three years. He himself is one of the leading disciples of the Nancy school in England, but, unlike many of the followers of that school, he is not a blind worshipper. He has studied the literature of the subject deeply; he is familiar, as unfortunately very few are, with the admirable work of the Italians, whose sane eclecticism was never more manifest than in this field; he is ready to admit that Charcot's statements may be correct; he recognizes clearly that the population of Nancy have by long training, been "suggested" into becoming hypnotic subjects; in a word, he is not disposed to accept the dogma of the infallibility of Bernheim and Liebeault. He treats of hypnotism almost wholly from the therapeutic side, omitting the marvellous tales which adorn many of the treatises, and enriching his work by frequent citations from literature and his personal experience. The book is candid, impartial, and well-written, and may be commended to all who are interested in the subject; but, in spite of Dr. Tuckey's zeal the London neurologists take no more kindly to suggestive therapeutics than do those of Berlin or New York.

Text-Book of the Eruptive and Continued Fevers. By John William Moore, M.D., Dublin. New York: William Moore & Co. 1892.

The author of this octavo of 530 pages is a resident of Dublin, Ireland, and has had a very considerable clinical experience in the subjects of which he treats, from the Cork Street Fever and Meath Hospitals. The references and citations, which are numerous, indicate a similar acquaintance with the literature. The most recent views on the etiology, bacteriology and treatment of the included diseases are in general done justice to. The Brand treatment of typhoid fever is advocated. Dr. Cayley's position that the fresh stools of typhoid fever are incapable of communicating this disease — though the period required for the development of their infectious properties does not exceed twelve hours and may be shorter — is adopted. The book covers a class of diseases which may be, and here are, advantageously dealt with separately.

A Study of Influenza, and the Laws of England Concerning Infectious Diseases. By Richard Sisley, M.D. Second edition. London: Longmans, Green & Co. 1892.

This octavo of 111 pages treats of influenza, and of the law of England as it is, or rather as it is supposed to be; for what the law actually is, the author thinks, can only be decided by the courts of law. To this are added, in the second edition, a paper on "The Spread of Influenza by Contagion," read before the Epidemiological Society of London, and a paper on "The Prevention of the Spread of Epidemic Influenza," communicated to the last congress of hygiene. The author, as we have before noted, is much impressed with the importance of contagion as a factor in the spread of influenza, and thinks it should be considered one of the infectious diseases for which notification is compulsory.

The Diseases of the Mouth in Children (non-surgical). By F. Forchheimer, M.D., Professor of Pathology and Clinical Diseases of Children, Medical College of Ohio; Member of Association of Amercan Physicians and American Pediatric Society, etc. Philadelphia: J. B. Lippincott Company. 1892.

This little book of 200 pages is the most valuable contribution to the advancement of our knowledge of diseases of the mouth which has as yet appeared in the English language. It comprises a series of articles which have already appeared in the *Archives of Pediatrics*, with, however, many additions and revisions. The object of the book is essentially that of establishing a proper nomenclature for the varied and absurd names which for so many years have been applied at hap-hazard to the local lesions of the mouth.

The author has given much time and original investigation to the subject and has given to medical literature a book which should be on the shelves of every general practitioner who wishes to keep abreast of the times.

Recherches Cliniques et Thérapeutiques sur l'Epilepsie, l'Hystérie et l'Idiotie. Compte rendu du service des enfants, idiots, épileptiques et arriérés de Bicêtre pendant l'année 1890. Par Bourneville, médecin de Bicêtre, avec la collaboration de MM. Camescasse, Isch-Wall, Morox, Raoult, Seglas et P. Sollier, Volume XI. With sixteen illustrations in the text and ten plates. 8vo, pp. c, 228. Paris: Aux Bureaux de *Progrès Médical.* 1891.

This, the eleventh volume of the report of the service for idiotic, feeble-minded and epileptic children at Bicêtre, contains the customary tables and reports, with plans of three new pavilions, and various clinical papers by Bourneville and his assistants, chiefly careful studies of cases of idiocy of different types with autopsies. Bourneville, as a result of fifteen years' study, gives the following anatomo-pathological classification of idiocy: (1) hydrocephalic idiocy; (2) microcephalic idiocy; (3) idiocy from arrest of development of the convolutions; (4) idiocy from congenital cerebral malformation; (5) idiocy from hypertrophic sclerosis; (6) idiocy from atroptic sclerosis; (7) meningitic idiocy; (8) myxœdematous idiocy.

Leitfaden der Hygiene für Studirende und Arzte. Von Dr. Aug. Gärtner, o.ö. Professor der Hygiene und Director des Hygienischen Instituts der Universität Jena. Mit 106 Abbildungen. Berlin, 1892. pp. 321.

This excellent handbook commends itself as a very thorough compendium of the general subject of hygiene. The different topics are treated concisely, accurately, and with due regard to the progressive nature of the general subject of the book.

The general divisions of the book are the following: Air, Water, Soil, Food and Drinks, Dwellings and Public Buildings, Heating of Houses, Ventilation, Lighting, Disposal of Sewage, Disposal of the Dead, School Hygiene, the Hygiene of Occupations, Infectious Diseases.

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THE PROPER DIET FOR HOT WEATHER.

In an article in the *Gentlemans' Magazine* which has been reproduced in the *Popular Science Monthly* for July, Dr. N. E. York Davies treats of the proper diet for hot weather.

Naturally, the writer says, we must first take into consideration the occupation of the individual. A man doing sedentary work or intellectual work will not require the same diet as a person doing laborious muscular work. What, then, is the kind of food most suitable in the summer time for the average workingman?

The most suitable articles of diet for hot weather, experience teaches, are fish, such kinds of meat as fowls and game, green vegetables, salads and fruit. Farinaceous food, that is, starches, should be taken in the very smallest quantity only. Sufficient sugar is found in the different fruits that the season of the year produces, and therefore should not be supplemented. He favors saccharine for sweetening drinks, as this substance is less fermentable than sugar.

Dr. Davies gives a sample of a day's dietary for an ordinary individual — one who is not too fat, or biliously inclined, and who is doing a fair amount of work of muscle and brain:

> "Breakfast, 8.30 to 9 a. m. — Two cups of tea or coffee sweetened with saccharine (?), one or two teaspoonfuls of cream in each; one ounce dry toast thinly buttered; four ounces of grilled or broiled fish, such as plaice, sole, whiting, haddock, cod or trout, or four ounces of cold chicken, cold tongue, or of grilled steak or chop.
>
> "Lunch, 1.30 p. m. — Two or three ounces of cold mutton, beef or lamb; three or four ounces of green vegetables, plainly boiled, plenty of green salad, made with vinegar, but without oil; four or five ounces of stewed fruit; water with two or three glasses of pure, dry Moselles or other Rhine wines.
>
> "Afternoon Tea, 4.30, if desired. — Two cups of tea as at breakfast; nothing to eat.
>
> "Dinner, 7 to 8. — Julienne, or clear vegetable soup; three or four ounces of fish; three or four ounces of any red meat, or of chicken, rabbit, game, or venison; six ounces of any green vegetable with gravy from the meat only; four ounces of stewed fruit or of raw fruit; a little stale or pulled bread and a small piece of cheese."

The obvious criticism on the above is that if this is the ideal summer-time dietary of John Bull, it will not altogether, in all its parts, please Brother Jonathan. He will stare aghast at the two or three glasses of "dry Moselles or other Rhine wine" that he is to have with his lunch, and ask, How under heaven with a high protective tariff and all the other difficulties in the way of importation he is going to get the article? Or, if the reply be made that the lighter wines of Ohio or California may do, "our American cousin" may answer that he is a prohibitionist, and "wants none of the stuff."

Again, he may think that the quantity of meat and fish is rather in excess of his needs or powers of digestion, and he may prefer for one of his meals a glass of milk and an egg. The traditional oatmeal porridge and milk he will miss from his morning meal. The diet table of Dr. Davies, moreover, violates the traditional rule regarding fruit: "Fruit is gold in the morning, silver at noon, and lead at night." The quantity of fruit which he prescribes for the last meal would certainly give many persons flatulence, acidity and heartburn. It is certainly according to wide experience that acidulated fruits (strawberries, raspberries, cherries, oranges, apples, etc.), may with greater impunity be freely eaten in the morning than at night.

The breakfast hour is too late for the ordinary American. He rises early, and wants his breakfast by 7 or 7.30 o'clock. For this very reason that he is an early riser, and that he goes to bed early (between 9 and 10 p. m.), he does not wish his principal meal to be in the evening, instead of at noon. A hearty meal between 7 and 8 o'clock in the evening would be a physiological mistake for a man who is to go to bed at nine or ten. On the other hand, the literary man, the student, the journalist, the member of a legislative body whose principal sessions are in the night-time, and all who are obliged by their special calling to retire late, need a hearty meal in the evening; and as their sleep must be largely after midnight, they will not be ready for their morning meal till about the time designated by Dr. Davies for the breakfast hour.

The "typical American" takes an early breakfast when he indulges freely in fruit, and never omits a first course of oatmeal and milk, cracked wheat or hominy; this is followed by dry toast, or buttered toast, an egg and a little cold meat or fresh fish, and a cup of coffee sweetened with sugar, not with saccharine, which is reserved for the diabetic. He would be glad of cream if it can be obtained. His dinner is the principal meal, and is always taken near the middle of the day. This is composed of soup, three or four ounces of broiled fish, roast meat, or fowl, four to six ounces of green vegetables (green peas, green beans, stewed turnips, onions, squash), four ounces of potatoes with meat gravy, with pickles and jelly *ad lib.* The last course, the apple, custard, or berry pie of our forefathers, doubtless does not deserve all the abuse which has been heaped upon it by our English cousins, especially when it is light, without too much "shortening," and with a well cooked bottom-crust.

The last meal, the supper, is taken rather early (as soon as 6 o'clock) and is designed to be a plain, light, substantial meal of bread and butter or tea rolls, a little stewed fruit for relish and one or two cups of tea. The "average American" seldom eats lunches.

The author of the article from which we have been quoting advises the ingestion of "any number of pleasant alcoholic and other beverages suitable for hot weather (!)," but cautions against sweet drinks. We may say, *en passant*, that it has not yet been demonstrated that the rather plentiful use of soda-water sweetened with pure syrups is injurious. These drinks, if slightly acidulated, are certainly very grateful in hot weather.

We know by observation that New England farmers make much account of their old, fermented cider as a beverage in the summer time; and doubtless cider, if indulged sparingly, cannot be regarded as harmful. Only well-fermented cider, contains a rather large percentage of alcohol and of acetic acid to be a safe drink except when taken in moderation.

Dr. Davies speaks highly of tea as "the most refreshing beverage of summer," but condemns the quality of much of the tea that is made. He gives directions how to make a good cup of tea, which, for the benefit of our readers we will reproduce:

"Any one walking up or down Shaftesbury Avenue West will see in a window half a dozen cups that he might reasonably imagine had been bequeathed the establishment by Goliath of Gath. These tea-cups are called magnums, as they hold exactly a pint, and one of them is sufficient or more than sufficient for a breakfast. To secure a delicious cup of tea the proper quantity should be put into the tea-pot according to the number of people requiring a supply, and when it has infused nine or ten minutes — not longer — the magnum, as it is called, should be filled. This being sufficient, and equal to two large breakfast cups, is of uniform strength and flavor throughout. Its contents will please the most fastidious taste and suit the most delicate stomach. In the summer time it should be sweetened with saccharine instead of sugar and flavored with a little cream. Some prefer tea with a squeeze of lemon in it and in this way it is possibly more wholesome and suitable as a cooling beverage."

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CHOLERA IN EUROPE.

Cholera continues to spread in the south-eastern part of Europe, and it is reported to have reached the city of Moscow. On account of information received by the Department of State, the surgeon-general of the Marine-Hospital Service has warned the collectors at Atlantic ports to exercise the greatest precaution in admitting passengers and immigrants coming from suspected localities. In the sundry civil bill now before the Senate, the following paragraph has been agreed to: "The President of the United States is hereby authorized, in case of threatened or actual epidemic of cholera, yellow fever or small-pox, to use the unexpended balance of the sums appropriated and reappropriated by the sundry civil appropriation act approved March 2, 1889, or as much thereof as may be necessary, in aid of State and local boards, or otherwise in his discretion, in preventing and suppressing the spread of the same."

For some time there have been reports of the existence of cholera in and near Paris. This has been so during several summers. This year, ever since the beginning of April, cases said to be cholera have occurred both in the suburbs and in Paris itself. M. Talamon has publicly stated that in many respects, this year's outbreak has been more grave than its predecessors. At the Asylum at Nanterre, which contains about 4,000 old men, there were, in fifteen days in April, fifty-one cases of choleraic diarrhœa, of which forty-eight proved fatal. This was very possibly due to the use of water from the Seine, which has frequently been found to produce intestinal disorders. Since April there have been isolated cases, especially in the suburbs. The symptoms are so like those of Asiatic cholera that in case of an epidemic, they would be undoubtedly mistaken for it, but it is said by the authorities that there is no Asiatic cholera in the neighborhood of Paris, and that the cases must be classed as cholera nostras.

The *London Lancet* has recently sent a correspondent to Paris, who reports that the authorities are endeavoring to conceal what must be virtually considered an epidemic. The area covered is large and diverse; twenty-four villages are suffering from it, and several cases have occurred in the city itself. The name cholerine has been coined to describe the disease. It appears to be very fatal, and to cause death sometimes with appalling suddenness. Bacteriological investigation has been begun by direction of the authorities, but the results have not yet been published.

There is evidently nothing in the situation to deter travellers intending to go to Paris — and the number of such Americans will be large during the next two months — from doing so. But the usual precautions inculcated by a prudent common-sense for this season of the year are more than usually indicated. Fatigue, exposure to the sun in the heat of the day, sudden chilling of the surface of the body, excess in food and drink are naturally to be avoided. The water of the Seine is not a safe drink unless boiled, and then it is not palatable.

Excellent table-waters are to had on all the frequented routes of travel in Europe, and those who either cannot, or will not, boil the water of the public supply, will pretty surely find it in the long run an economy of health, time and money to use them. They will, moreover, be acquiring careful habits which should stand them in good stead when visiting Chicago next summer.

MEDICAL NOTES.

Changes in Different College Faculties. — Dr. John Ridlon, recently of New York, has been appointed lecturer on orthopedic surgery in the Chicago Medical School. Dr. T. Mitchell Prudden has been made professor of pathology, and Robert F. Weir, M.D., professor of surgery in the Medical School of Columbia College. Dr. E. G. Janeway has resigned the professorship of the practice of medicine in Bellevue College, New York.

University of Pennsylvania. — The Medical Faculty announces that the *compulsory four-years' course* goes into operation with the session, beginning October 2, 1893, and as the desire has been expressed by some students to avail themselves of such a course at once, it has been decided to offer the opportunity of a full four-years' graded course to those who desire it with the opening of the next session, beginning October 3, 1892. The Faculty also announces that Professor Tyson, having resigned the position of Dean, Prof. John Marshall has been chosen to succeed him.

The Cartwright Prize. — The Alumni Association of the College of Physicians and Surgeons of New York offer a Cartwright Prize of $400, to be awarded in June, 1893. This prize is open to universal competition, and essayists may select any subject connected with the science of medicine. Original investigations are, however, demanded of the competitors.

Medical Legislation in New York. — Among the acts passed at the recent session of the Legislature of New York, and signed by the Governor, one provides for the establishment of a State institution for the care of epileptics. The State Board of Charities is to look out for a site and procure plans for submission to the next Legislature. Another requires every dentist to register with the clerk of the county in which he practices, specifies thorough preparation for future applicants and compels them to secure the sanction of the Board of Censors of the State Dental Society before they can practice.

The Red Cross Insignia.—The Committee on Foreign Affairs have reported to Congress the bill to protect the insignia and name of the Red Cross. The bill incorporates the American National Association of the Red Cross, and describes the badge as a Greek red cross on a white ground. It is provided that it shall be unlawful for any person within the jurisdiction of the United States to use the symbol of the Red Cross as a trade-mark or otherwise, and imposes penalties for violation of the law.

Proprietary Medicines. — The Missouri State Medical Association has adopted resolutions condemning the practice, on the part of physicians, of giving certificates to manufacturers and proprietors of medicines, and also recommending to the profession the future discontinuance of such medicines.

United States Census. — According to recent returns from the last census there were, in the United States, 62,622,650 inhabitants, of whom 53,372,703 were born in the United States. The colored population, including Chinese, Japanese and civilized Indians, was 7,638,360. There were 32,067,880 males and 30,554,370 females. During the last decade the increase of males was 25.66 per cent., while that of females was 24.02 per cent.

Fog in London. — The president of the Institute of Civil Engineers in London has announced that the fog of London is a sanitary blessing, on account of the large amount of antiseptic sulphurous fumes which it contains.

Prostitution in Italy. — In 1889 Crispi rescinded the previous police regulation of prostitution in Italy, and allowed much more liberty in this direction. As a consequence the amount of syphilis and other venereal disease increased noticeably, so that during the last year the previous regulation has been reintroduced.

The Dangers of Football. — A case is reported in the *British Medical Journal* of June 4th, in which a young man became infected with syphilis during a game of football by a wound of the scalp. The intimate relations between players in a football game make it important that no one with symptoms of syphilis should be allowed to play.

The Keeley Cure in England. — The Church of England Temperance Society came very near endorsing this notorious proprietary cure for inebriety. A large meeting was to be held under the auspices of the Society, with a presiding Lord Bishop, in order to set forth the virtues of this method of treatment, but at the last moment, by the influence of some public-spirited physicians the meeting was postponed *sine die*.

The Manufacture of Tuberculin. — Since the first of July the manufacture of tuberculin has passed into the hands of Meister, Lucius and Bruning, near Frankfort, and Dr. Libbertz has gone there to continue his supervision. Treatment by tuberculin is steadily continued at the Institute in Berlin. A modification has been used in some cases and its result compared with those of the old preparation.

A Statue to Jenner. — It is a significant fact that while an attempt is being made in England to decry the benefits conferred on humanity by Jenner's discovery, the medical profession in Japan, impressed with the enormous benefits which vaccination has conferred on their countrymen, are taking steps to erect a statue to "that medical benefactor of mankind."

BOSTON AND NEW ENGLAND.

Mortality in Boston for June. — During the past month there were 749 deaths in Boston, against 736 last year, making the death-rate 19.13. The cases of infectious diseases reported were, diphtheria 77, measles 177, scarlet fever 217, typhoid fever 60.

The Malden Hospital. — The new hospital recently erected in Malden, Mass., was formally dedicated last week. The entire cost of the building was $42,817, of which $37,207 has been paid. A poem, well written and suitable to the occasion, was read by Dr. J. L. Sullivan. The hospital is situated on a hill near the Medford line; the view is very good, including the harbor and the surrounding towns. The land and a large subscription towards the building was given by Mr. E. S. Converse. The building consists of a central administrative building and two wings. The latter are two stories in height and the main building three. The hospital has been built according to the most recent ideas of hospital construction. There are accommodations for forty-three patients, nine of whom can be in private wards. Dr. J. L. Sullivan is chairman of the medical board. Several endowments of free beds have already been received.

NEW YORK.

The Consulting Staff of the Board of Health.— Since the 4th of July three more physicians and surgeons have resigned from the consulting staff of the Board of Health, Drs. Daniel M. Stinson, John O'Dwyer and Richard H. Derby. Dr. Janeway, Jacobi and Stephen Smith had previously sent in their resignations; so that now there is but one left, Dr. George F. Shrady, who was appointed to the position made vacant by the death of Dr. C. R. Agnew. It is understood that all these resignations were on account of dissatisfaction with the introduction of partisan politics into the Board of Health.

Floating Hospital. — On July 7th the first excursion of the St. John's Guild's Floating Hospital was made to the seaside sanitarium of the Guild at New Dorp, Staten Island, where a number of the sick children requiring continued treatment were left for a week or fortnight's stay. A feature of these excursions which is attended with much benefit, is the baths with which the hospital boat is provided.

Miscellany.

THERAPEUTICS OF TYPHOID FEVER IN THE PARIS HOSPITALS.

There exists in Paris, much divergence of opinion as to the efficacy of cold baths in the treatment of enteric fever.[1] This method is attributed in France to Brand of Stettin, although it had been advocated nearly a century ago by Currie. Dr. Juhel-Rénoy has just communicated to the Société Médicale des Hôpitaux the result of an inquiry he has conducted into this question. For this purpose he applied to eighty colleagues, forty of whom replied. Of these hospital physicians fourteen disapprove of the systematic employment of the cold bath. Twelve, on the contrary, are enthusiastic believers in the method which they apply indiscriminately to all cases, whether they be light or severe in character. Two believe in tepid baths gradually cooled down and eight, while approving generally of cold baths, impose certain restrictions. Of 175 cases treated by the adversaries of the method, 25 died, giving a mortality of 14.2 per cent. Thirty-nine cases treated by the method, with restrictions, yielded one death, or 2.56 per cent. In Professor Bouchard's wards, where progressively cooled tepid baths are in fashion, 54 out of 554 cases died, or 9.74 per cent. The advocates of systematic cold baths lost 40 out of 492 cases, or 8.13 per cent. M. Juhel-Rénoy concluded his paper by expressing his opinion that the introduction of balneotherapy into typhoid fever wards had been the means of reducing the mortality from that disease at least 5 per cent.

INJURIOUS EFFECTS OF THE TELEPHONE UPON HEARING.[1]

Gellé, of Paris, observes that those who frequently use the telephone sometimes present a series of aural disturbances similar to those resulting from the continued action of loud noises. In such cases there may be found inflammation of the membrana tympani and of the tympanic cavity, or there may be irritable conditions of the nervous apparatus of the ear, exercising an influence upon the general nervous system. Hence, in the cases observed, there were pains in the ear, diminished hearing, subjective noises, hyperæsthesia acoustica, and vertigo, all of which were manifested at first during loud auditory impression, but later became permanent, with general nervous irritability. Probably, for the production of the aforesaid disturbances, there must be a certain predisposition, due either to a greater excitability of the entire nervous system or a previous and still existing disease of the auditory organ.

ANÆSTHESIA IN VETERINARY SURGERY.

An article on this subject in the *British Medical Journal* calls attention to the alleviation of animal suffering during the last decade by the frequent use of anæsthetics. On the Continent, for general anæsthesia, chloral hydrate by intravenous injection is largely used, as much as two ounces often being given to a horse. It is sometimes given by the mouth in doses of from five to nine ounces. In England, chloroform and ether are more frequently used for all animals. Horses and ruminants are rarely unfavorably affected by chloroform, fatal results being very rare. From two to twelve drachms is usually sufficient to produce anæsthesia, which may be maintained for indefinite periods by proportionate quantities. A mixture of chloroform and ether is preferred for dogs, who require greater care; but though a small proportion succumb to chloroform, by careful use the danger is not great. In difficult obstetric cases, difficulties and dangers are lessened and much suffering prevented. For removal of tumors and similar operations subcutaneous injections of cocaine have become common. Many appliances are used for administering ether and chloroform, the common form being a sponge in a leather bag perforated at the bottom. By the judicious use of anæsthetics, the result of operative work is better, much suffering is prevented, and the comfort and safety of the operator is increased.

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[1] Lancet, July 2d.

[1] American Journal Medical Sciences, July.

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RESOLUTIONS ON THE DEATH OF DR. WILLIAM B. FISKE.

At the last meeting of the Cambridge Medical Improvement Society the following resolutions were passed:

"The members of the Cambridge Medical Improvement Society have learned with sorrow of the death of William Boyd Fiske, and wish to express the great loss they have sustained. Dr. Fiske had been with us but a few years, but his strong character has left an impress which will long remain. His thorough scholarship combined with practical work in hospitals gave promise of an unusually useful life, a promise which the few years of practice permitted him were fast fulfilling. He was unassuming, yet earnest and efficient in his work; always willing to assist, though able to lead; straightforward in his dealings, and sincere in his expressions. We mourn him as a friend, a professional brother and a fellow-citizen.

"By his death this Society loses a worthy officer, and this community a true man and a valuable physician."

Albert H. Tuttle, *Secretary.*

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THERAPEUTIC NOTES.

The Prevention of Tuberculosis.— The Prussian Bureau for medical matters proposes to replace the water in the spittoons of phthisical patients by wood shavings moistened with water to which chloride of calcium and chloride of soda have been added. This will obviate all danger of freezing, of evaporation or spilling, and there need be no fear that domestic animals will use the spittoon as drinking vessels.

Sulphur in Chlorosis. — Schulz[1] draws attention to the value of sulphur in certain cases of anæmia. After alluding to the prominent part played by sulphur in the life of the cell — and to the excellent results obtained by the use of sulphur waters in malarial cachexia, he comes to these conclusions: In cases of pure chlorosis in which iron proves inefficient, the general condition is decidedly improved by sulphur. After the administration of sulphur has gone on for some time, treatment with iron can be commenced and continued with success. In cases of chlorosis complicated with catarrhal and inflammatory conditions of the digestive tract, sulphur is not borne.

Thiophen.[2] — Thiophen is a hydrocarbon of the aromatic series, a colorless, limpid oil, of faint odor, and miscible with water in all proportions. The soda salt is a white powder, precipitated in the form of scales, contains 33 per cent. of sulphur, of a disagreeable odor which is usually not marked when in a five or ten per cent. ointment. In prurigo complicated by eczema it can replace naphthol. The biniodide has been used as a substitute for iodoform. It crystallizes in beautiful plates, insoluble in water, but very soluble in ether, alcohol and chloroform. Its odor is characteristic, but not disagreeable; gauze impregnated in a proportion of ten per cent. emits a slight odor, rather agreeable and aromatic. This salt, in the laboratory, will prevent the development of the *staphylococcus aureus.* So far as preventing odor and desiccation, it is superior to iodoform. Hock has used it in various conditions, phlegmon, contused wounds, compound fractures, and caries, with very satisfactory results. There seems to be no poisonous action; it does not give rise to eczema, it even seems to cure it, when existing. Applied as a powder it is a vigorous disinfectant, and may even give rise to a burning sensation which may persist for half an hour. It will deodorize more energetically than iodoform, but it is a less active stimulant of granulation-tissue.

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Correspondence.

THE DIAGNOSIS OF A MASSACHUSETTS "DOCTOR."

Boston, July 7, 1892.

Mr. Editor: The following is a copy of a document sent me in good faith by a patient to whom it was given by a notorious quack of this city.

"*Diagnosis of Mrs. B.* — Irritation of the Brain and Spinal cord, Caused by Cancer Humor of the Blood. Heart Failure. Enlargement of Glands and Womb by same. Kidney Difficulty. Will fall from Nervous Prostration and Developed Cancer of the Womb, and arm pit unless attended to *at once.* [Signed] Dr. S——."

Yours very truly, W. H. B.

RECORD OF MORTALITY
For the Week ending Saturday, July 2, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,827,396	845	457	31.32	10.20	21.48	2.52	1.20
Chicago	1,250,000	426	194	7.59	9.20	.92	1.84	3.22
Philadelphia	1,092,168	487	231	25.83	8.82	19.11	3.15	1.26
Brooklyn	955,333	410	252	33.04	4.56	24.96	4.80	—
St. Louis	477,873	221	116	32.40	4.95	29.70	1.35	—
Boston	469,645	146	46	11.04	13.11	6.21	1.38	—
Baltimore	434,439	—	—	—	—	—	—	—
Cincinnati	305,000	92	38	14.17	6.54	6.54	4.36	1.09
Cleveland	281,353	79	37	22.94	8.82	13.86	2.52	6.30
Pittsburg	255,000	100	59	22.00	5.00	14.00	4.00	4.00
Milwaukee	234,440	45	18	28.86	15.55	13.33	11.11	4.44
Washington	230,360	162	96	41.85	8.45	39.65	1.95	1.30
Worcester	92,313	21	10	23.80	4.76	19.04	—	—
Nashville	87,754	39	14	15.36	25.60	15.36	—	—
Lowell	82,455	30	12	10.00	13.33	10.00	—	—
Cambridge	74,644	30	12	16.66	23.33	6.66	3.33	—
Fall River	74,398	—	—	—	—	—	—	—
Lynn	60,809	18	3	5.55	16.66	—	—	—
Charleston	56,048	51	27	11.76	11.76	9.80	—	—
Springfield	47,052	17	9	29.40	11.76	29.40	—	—
Lawrence	45,910	15	5	20.00	6.66	—	—	6.66
New Bedford	44,954	21	11	23.80	4.76	19.04	—	—
Portland	40,000	15	1	33.33	20.00	—	—	—
Holyoke	35,637	—	—	—	—	—	—	—
Salem	31,495	6	1	—	16.66	—	—	—
Haverhill	30,065	3	0	—	—	—	—	—
Chelsea	29,479	—	—	—	—	—	—	—
Fitchburg	27,445	7	4	14.28	—	—	14.28	—
Gloucester	26,805	9	3	—	—	—	—	—
Malden	26,783	2	0	50.00	—	—	50.00	—
Brockton	26,464	8	0	12.50	—	—	12.50	—
Taunton	26,464	5	3	—	—	—	—	—
Newton	24,376	—	—	—	—	—	—	—
Waltham	20,942	7	0	—	42.84	—	—	—
Pittsfield	18,294	2	2	—	—	—	—	—
Quincy	17,930	5	3	40.00	—	20.00	20.00	—
Northampton	15,684	5	0	—	20.00	—	—	—
Everett	14,745	3	1	—	33.33	—	—	—
Newburyport	14,031	1	1	—	—	—	—	—
Amesbury	13,561	3	2	—	—	—	—	—

Deaths reported 3,343: under five years of age 1,670; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 821, diarrhœal diseases 577, diphtheria and croup 91, typhoid fever 44, measles 39, scarlet fever 35, cerebro-spinal meningitis 16, whooping-cough 11, malarial fever 4, erysipelas 3.

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[1] Berlin. klin. Woch., No. 13, 1892.

[2] American Journal of Medical Sciences.

From measles New York 28, Brooklyn 7, Chicago 2, Cleveland and Portland 1 each. From scarlet fever New York 14, Philadelphia 8, Brooklyn, St. Louis, Boston, Cincinnati and Lawrence 2 each, Pittsburgh, Cambridge and Brockton 1 each. From cerebro-spinal meningitis New York 5, Chicago and Washington 3 each, Brooklyn, Boston, Worcester, Lynn and New Bedford 1 each. From whooping-cough New York 4, Philadelphia 3, Chicago 2, Charleston and Cambridge 1 each. From malarial fever Brooklyn 4. From erysipelas St. Louis, Boston and Portland 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending June 25th, the death-rate was 17.3. Deaths reported 3,377: acute diseases of the respiratory organs (London) 181, measles 176, diarrhœa 99, whooping-cough 84, diphtheria 50, scarlet fever 47, fever 19, small-pox (London and Liverpool 1 each) 2.

The death-rates ranged from 8.8 in Croydon to 22.9 in Oldham; Birmingham 19.8, Bolton 15.2, Brighton 11.6, Hull 13.2, Leeds 16.8, Leicester 11.9, Liverpool 20.2, London 17.3, Manchester 21.1, Newcastle-on-Tyne 18.7, Nottingham 15.3, Salford 21.5, Sheffield 18.4, Sunderland 17.7.

METEOROLOGICAL RECORD,

For the week ending July 2, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	30.02	61	66	56	89	85	87	N.E.	S.	2	12	O	F.	.08
M..27	29.95	65	70	60	90	92	91	S.	E.	8	15	R.	O.	.17
T..28	29.65	65	82	59	82	59	70	S.W.	W.	19	16	O.	O.	.30
W. 29	29.99	70	79	62	64	70	67	S.W.	S.	9	12	F.	O.	
T..30	29.93	73	80	66	84	84	84	S.	S.W.	14	12	O.	O.	
F.. 1	30.09	63	66	60	72	84	78	W.	S.	7	6	R.	O.	.13
S.. 2	30.17	66	76	57	67	73	70	W.	S.W.	7	12	C.	O.	
☞	29.97	66	74	60	78	78	78			9	10			.09

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 2, 1892, TO JULY 8, 1892.

Lieut.-Col. William D. Wolverton, assistant medical purveyor, will, on the expiration of his present leave of absence, proceed to Fort Omaha, Nebraska, and report in person to the commanding officer of that post for temporary duty during the absence of Major Albert Hartsuff, surgeon, on leave.

First-Lieut. Isaac P. Ware, assistant surgeon, U. S A., is relieved from duty at Fort Douglas, Utah, and will report in person to the commanding officer at Fort Logan, Col., for duty at that post, relieving Captain William L. Kneedler, assistant surgeon, U. S. A. Captain Kneedler, on being relieved, will report in person to the commanding officer, Fort Mason, Cal., for duty at that station, relieving Captain Harry O. Perley, assistant surgeon.

Captain Harry O. Perley, assistant surgeon, on being relieved from duty at Fort Mason, Cal., will repair to Washington, D. C., and report in person to the Surgeon-General, U. S. A., for duty in his office.

The leave of absence granted Captain Henry S. T. Harris, assistant surgeon, U. S. A., is further extended one month.

Captain William H. Corbusier, assistant surgeon, U. S. A., will proceed, at the proper time, to Island Lake, Michigan, and visit the camp of the Michigan State Troops, during the period of their encampment, at that place, commencing August 18, 1892.

Captain William Stephenson, assistant surgeon, U. S. A., will visit the camp of the Illinois National Guard at Springfield, Ill., during the period of its encampment, commencing July 9th, and ending August 21, 1892.

RECENT DEATHS.

Frederick Jones, M.D., of New Ipswich, N. H., died July 6th, aged seventy-six years. He graduated from Harvard College in the class of 1835, and received the degree of M.D. from Dartmouth College in 1859. He practised at one time in Ashburnham, Mass., but later moved to New Ipswich, N. H.

Silas Allen Potter, M.D., M.M.S.S., died in Roxbury, July 10th, aged thirty-eight years. Dr. Potter graduated from Harvard College in the class of 1876, from Andover Theological Seminary in 1879, and from the Harvard Medical School in 1884. He soon afterwards settled in Roxbury.

John Hooker, M.D., M.M.S.S., died in Springfield, July 11th.

BOOKS AND PAMPHLETS RECEIVED.

Announcement of Gross Medical College of Denver, 1892–93.

Announcement, Sixty-second Session, 1892–93, Albany Medical College.

Catalogue of the Louisville National Medical College, 1892–93; Fifth Annual Announcement.

Report of Twelve Cases of Herniotomy. By B. M. Ricketts, M.D., Cincinnati. Reprint. 1892.

Camphor-Menthol in Catarrhal Diseases. By Seth Scott Bishop, M.D., Chicago. Reprint. 1891.

The Bacteria in Wounds and Skin-Stitches. By Hunter Robb, M.D., and Albert A. Ghrisky, M.D. Reprint. 1892.

A National System of Sanatoria; a Plea and a Prophecy. By Samuel S. Wallian, A.M., M.D., of New York. Reprint. 1892.

Two Successful Cases of the Conservative Cæsarean Section. By Charles Jewett, A.M., M.D., Brooklyn, N. Y. Reprint. 1892.

Orthopedic Surgery as a Specialty. Diseases of the Hip-Joint. By Arthur J. Gillette, M.D., St. Paul, Minn. Reprints. 1892.

Report for the year 1891–92, Presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

The Use of Morphine and other Strong Sedatives in Gynecological Practice. By Hunter Robb, M.D., Baltimore. Reprint. 1892.

A Method of Infection, Treatment and Prophylaxis of Purulent Ophthalmia. By George M. Gould, A.M., M.D., Philadelphia. Reprint. 1892.

The Mission of the Association of the Military Surgeons of the National Guard of the United States. By N. Senn, M.D., President. Reprint. 1892.

History of Higher Education in Massachusetts. By George Gary Bush, Ph.D. Washington: Bureau of Education, Circular of Information, No. 6. 1891.

Cardiac Outlines, for Clinical Clerks and Practitioners. By William Ewart, M.D., F.R.C.P., Physician to St. George's Hospital, London. G. P. Putnam's Sons. 1892.

Note on Gastric Ulcer and Allied Conditions; Œsophageal Perforation from Typhoid Ulcer. By Glentworth R. Butler, A.M., M.D., Brooklyn, N. Y. Reprint. 1892.

Southern Women in the Recent Educational Movement in the South. By Rev. A. D. Mayo, M.A. Washington: Bureau of Education, Circular of Information, No. 1. 1892.

The Garden of Eden: The Allegorical Meaning Revealed. By Victoria Claflin Woodhull. (Revised edition.) Also, The Proposal. By Zula Maud Woodhull. London. 1890.

Arterio-Venous Aneurism of the Common Carotid Artery and Internal Jugular Veins; Double Ligature of both Vessels; Recovery. By W. W. Keen, M.D., Philadelphia. Reprint. 1892.

Typhoid Fever in Chicago. By William T. Sedwick, Professor of Biology in the Massachusetts Institute of Technology, Boston; and Allen Hazen, Chemist in charge, Lawrence Experiment Station, Lawrence, Mass. Reprint. 1892.

Die Quantitative Pulsanalyse mit dem Sphygmochronographen von Jaquet und Ihre Verwerthung zu Diagnostischen Zwecken. Inaugural Dissertation. Von Paul von der Mühll, Prakt. Arzt. Leipzig: J. B. Hirschfeld. 1892.

Diseases of Women: A Manual of Non-surgical Gynecology designed especially for the use of students and general practitioners. By F. H. Davenport, M.D., Instructor in Gynecology, Harvard Medical School. Second edition. Philadelphia: Lea Brothers & Co. 1892.

Nephrotomy for Calculus Pyelitis. Nephrectomy rightly decided against because of the small percentage of Urea: an apparently almost destroyed and useless Kidney found to secrete over four and a half times as much Urine as the other Kidney; Death. By W. W. Keen, M.D., and David D. Stewart, M.D. Reprint. 1892.

Lecture.

THE PREVENTION OF DISEASE IN MASSACHUSETTS.[1]

The Shattuck Lecture for 1892.

(Concluded from No. 2, page 33.)

BY J. F. ALLEYNE ADAMS, M.D., OF PITTSFIELD.

The reduction of the mortality from *consumption* is one of the greatest of sanitary needs: for this is, in our climate, the most destructive of all diseases. Great as has been the apparent decline in the last forty years, it still holds its place at the head of the list, having caused in 1890, 5,791 deaths. Moreover, its mortality being greatest in the most active period of life — that of young manhood and womanhood — the loss to the community is peculiarly heavy. In Massachusetts, the mortality from this disease is greater in the eastern than in the western counties, and is greater in the cities than in the country. Our Irish population suffer more severely than any other class, and the large proportion of this nationality in our population is one cause of our high death-rate from consumption.

The discovery of the tubercle bacillus adds consumption to the list of germ diseases, and indicates modes of prevention from which we are justified in expecting great results. Hitherto, our efforts have been directed to the overcoming of hereditary tendencies and the improvement of the environment; now it appears that there is one element in the environment more dangerous than all others, and this is the venomous little bacillus. That consumption is both contagious and infectious can no longer be doubted. Instances of evident contagion have come under my own observation; and doubtless many members of this Society could report similar cases. How else can we account for the phenomenon which is frequently presented to us of several brothers and sisters in a family dropping off, one by one, from this disease, with no hereditary tendency and no unsanitary surroundings? And what can we say of those cases where a healthy young person suddenly breaks down with consumption shortly after nursing or paying a loving visit to a consumptive friend? Hereditary predisposition exists in not over 30 per cent. of all cases, and this is probably an excessive estimate. Of the deaths in Massachusetts, therefore, in 1890, 70 per cent., or 4,053, had no consumptive antecedents. Without contagion, this is a puzzling fact, but granting contagion the mystery is removed.

That the bacilli which swarm in phthisical sputa are capable of conveying the disease to a healthy person, whether in the fresh or dry state, is now so positively determined that it becomes the duty of all medical men to explain the matter to their patients and their patient's families, and to insist upon such precautions as tend to prevent the spread of the disease. These precautions may be summed up in a few simple rules such as these:

(1) Let all sputa be carefully collected and destroyed by fire.

(2) Let sputa never be deposited on handkerchiefs, carpets, floors, or any other place where it may dry and become mingled with the atmosphere.

(3) Never drink from the same glass with a consumptive.

(4) Never kiss a consumptive upon the mouth.

These rules are equally applicable to pneumonia and perhaps also to bronchitis. It will, therefore, be best to call them, not rules for consumptives, but for *all persons who cough and expectorate.* This will save the patient from the shock of a positive and perhaps too hasty diagnosis.

The investigations concerning tuberculosis in cattle show how carefully we must watch the milk-supply of our patients, and especially since Dr. Ernst has demonstrated that a cow tuberculous in any part may yield tuberculous milk. This fact also emphasizes the importance of forbidding a consumptive mother to nurse her offspring.

Boards of Health have already begun to publish rules such as the foregoing; but in order that they should be so generally and intelligently followed as to produce any positive results, it is necessary that physicians should persistently teach the public of their necessity.

Having thus hopefully and even confidently placed consumption among the preventable diseases, why are not the acute lung affections entitled to the same distinction? We know that they have their specific germs, and we believe in their communicability; and though our knowledge of the natural history of these germs is as yet very limited, their very existence opens up possibilities of future prevention, and should lead us to add them, at least experimentally, to the preventable class.

Having now broadened out the boundaries of the preventable diseases to extreme and perhaps you will say unwarrantable limits, let us see for what portion of the mortality these are accountable.

For the five years ending in 1890 the zymotic diseases caused 18 per cent. of all the deaths. Consumption and the other tubercular affections caused very nearly the same proportion, namely 17 per cent., while pneumonia and bronchitis were responsible for 11 per cent. These amount in the aggregate to 46 per cent., or not quite half of the total deaths. Of what, then, is the other half of the death-rate composed? For one thing, it includes old age, to which are attributed 4½ per cent. of all deaths. The rate to the population has remained practically unchanged in forty years, being from eight to ten to 10,000. But this is not a disease. On the contrary, a death from old age, since it implies living to old age, is the greatest triumph of human vitality, and the *ultima Thule* of preventive medicine is to render old age common, hereditary and even contagious. We may therefore exclude old age from the list of non-preventable diseases, and the same may be said of violence, which causes four per cent. of all the deaths.

This will leave as a remainder about 45 per cent. of all deaths. More than half of this number is made up of diseases of the brain, heart, kidneys, and of cancer, and the balance comprises the diseases of the digestive organs, including the liver, of the organs of generation and locomotion, of the developmental diseases, and disorders of nutrition. It is among these, or a portion of them, that the great increase in mortality is taking place. How to arrest this mortality is one of the most important medical problems of the day, and one which it behooves the medical profession to set itself resolutely to solving.

We have seen that these increasing diseases are largely those of the latter part of life, or at ages above forty. In some respects the loss to the community is somewhat less of persons of this age than of the same number of persons between twenty and forty, which is the age of production and of re-production. These older men and women have reared their families and have passed the age of greatest strength and activity; but they are possessed of something which we cannot spare, namely, the experience and wisdom which belong to ripe maturity. Many and many a brilliant leader of men in politics, literature or the professions, is cut down in what should be the prime of life, between 40 and 60, when he ought to have lived to 70 or 80, to give the world the benefit of those well-seasoned powers which had but just attained their full development.

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[1] Delivered before the Massachusetts Medical Society, June 7th, 1892.

These diseases of later life are largely of the degenerative type; the disintegration of tissues in one organ or another. Our great Poet-Doctor has sung to us of chaises which break down but never wear out, and therein has typified the human vehicle, which, like a chaise, has "always *somewhere* a weakest spot." How shall these weak spots be made strong? How can the human chaise be made to run "a hundred years to a day," or even keep in good repair for three-score years and ten? How, in short, can the long life and perennial youth of the writer of the "One Hoss Shay" be made less exceptional among men?

Before attempting to answer these questions, it is necessary to inquire what are the causes which contribute to the increase in the diseases of later life. These, it seems to me, can be grouped under two general heads, of which the first is that *this is the natural tendency of an advancing, but still imperfect civilization.*

In comparing the effects of the diseases of men with those of the lower animals, we find a marked difference. Animals, like men, are not born equally vigorous, and in the struggle for food and against enemies the weaker are soon weeded out. These also more readily fall a prey to diseases, which are chiefly of the zymotic type, and since they receive no care from their kind, they cannot obtain food, and necessarily die. It is therefore the strong and healthy only who reach maturity and become the parents of the next generation. This is "natural selection," or "the survival of the fittest." Moreover, the lower animals, being guided by instinct, naturally tend to adapt themselves to their environment. Without knowing why, they select such food as is most suitable for them, and adopt such habits as are best for their physical well being.

But with man, and especially civilized man, the circumstances are changed. The law of the survival of the fittest is still in force, but is modified in its action by the fact that man is governed by *will* and not by instinct, and also possesses intellectual and moral faculties whereby the selfish and cruel propensities of the brutes are, or may be, overcome. By these qualities the physical character of the race is affected in several ways. The delicate children receive the most tender care and are often enabled to grow to maturity and procreate children of their own. Diseased persons are cared for in homes or hospitals and not allowed to starve, as the brutes are; but those who have recovered from disease are often, if not usually, left with some impairment of structure or function which is then liable to be transmitted to the next generation. Again, as it is a matter of choice with men "what they shall eat, what they shall drink and wherewithal they shall be clothed," they may and frequently do choose such a mode of life as is incompatible with integrity of structure, however perfect originally. Man's freedom of action leads him more naturally to self-indulgence than to self-restraint, and self-indulgence leads inevitably to physical degeneracy. Savage man very nearly resembles the brutes, as regards natural selection, but the tendency of civilization is not to the survival of the fittest physically, but to the preservation of impaired lives, the impairment of healthy lives, the hereditary transmission of weaknesses of structure, and consequently to the development of a race in which perfect health is almost unknown, and tendencies to disease are an universal heritage. With these tendencies we all have to contend. They are the structural weaknesses with which we are born, and which, though they may not show themselves for years, are ever ready to yield to some special strain which a perfect structure would successfully resist. To these are added mental and moral inherited defects — weakness of will or overmastering desires, which cannot fail to influence the physical development.

The fundamental reason for this state of society seems to be that man is still in a transition state. He is neither a brute nor has he yet become a perfect man. The brute is well equipped for life with an unerring instinct. Man has endowments which are capable of rendering him far better service, namely, a will, an intellect and a conscience. If this machinery were perfect (and in the ideal man it must be perfect), man would emancipate himself from all the ills which now enslave him and disease would vanish from the earth. But thus far, a perfect co-ordination between the will, the reasoning power and the conscience is seldom found; and the age when it shall become so constant as to acquire the force of an hereditary racial characteristic must be regarded as extremely remote.

The conclusion is here forced upon us that a high physical condition of the race is impossible without a high moral condition, with the self-restraint which this implies; and hence that even for the physical uplifting of the race, science requires the aid of religion.

The second general cause which appears to contribute to the increase of the diseases of mature or advancing age is *the rapid growth of cities.* It is in cities that the degenerative tendencies of civilization are strongest. The environment is more artificial, and therefore the struggle for existence is more desperate than under the more natural conditions of rural life. To the conditions which exist in the worst part of a great city the term "necessarily fatal environment" has been not aptly applied. In London, a native of the city, of the third generation, among the lowest classes, is practically unknown. If one is occasionally discovered, he is found to be a wretched creature, stunted in body and mind, though probably the descendant of vigorous grand-parents who came from the rural districts to seek their fortunes in the great city. This does not apply, however, to those city families whose means enable them to live in comfort and to spend a portion of the year in the country; and yet there are certain influences which affect all classes. The endless excitement of city life, the furious competition, the desperate struggle which all are making, some for wealth or position, and others for the bare necessities of life — these are fruitful sources of disease which affect both rich and poor.

Associated with a life of great mental excitement, is a general insufficiency of muscular exercise. This leads to a general prevalence of dyspepsia and lithæmia, which we know to be the underlying causes of many organic diseases. The excessive use of alcoholic stimulants also, which is most common in cities, is one of the most fruitful causes of disease. In London it was estimated by a committee of the Harveian Society that alcohol is responsible, directly or indirectly, for 14 per cent. of all deaths.

In Massachusetts we must lay our plans with special reference to the city environment, for our State is approaching the condition of a mere group of cities. By the census of 1890 it has 70 per cent. of urban population, being a larger proportion than any other State in the Union except Rhode Island. Though our State is one of the smallest, being forty-fourth in respect of area, it is the seventh in population and the second in density. The increase of population during the last decade has been greater than that of any State east of the Mississippi, with four exceptions. Moreover, this increase has almost all been in the cities, and some of the smaller towns are actually dwindling.

A third cause which may contribute to the increase in the diseases of later life is the influence of the late war. A great number of our most vigorous young men were killed or died in the service, and of the survivors a large proportion were shattered in health, while of those who did not enlist, many were prevented from doing so by physical disability. Our veterans are now mostly between the ages of forty-five and sixty-five, and it is evident that the average vigor of men at these ages must be less than it would have been but for the destructive effects of the war upon the young men of thirty years ago. The death-rate for veterans is, according to Dr. Billings, slightly higher than the average for men of corresponding age, while the health of living veterans is below the average standard. But just how far this cause may affect the death-rate, I am unable to determine. A comparison of the male and female mortality has given only negative results. The death-rate for males was higher than for females in 1892; but so it was also in 1860, and the ratio between them for these two years is almost exactly the same. It was, in 1860, for males 19.2, and for females 18.2; while in 1890 it was for males 20, and for females 18.9. An examination of the comparative mortality from diseases of the brain, heart and kidneys in the two sexes, shows that while these are all somewhat more fatal among men than women, the ratio between the sexes was very nearly the same in 1890 as in 1860.[1]

These observations upon the causes of the increasing diseases are intended as suggestions only, and not a complete enumeration of those causes. The subject is one which needs further investigation, and I commend it to this Society as one of the most serious and urgent of medical problems. Among the causes mentioned there are a few which stand out conspicuously, and seem to demand our especial attention. These are:

(1) The general prevalence of digestive disturbances due in part to an improper diet and in part to a weakness of digestion caused by lack of exercise and mental strain. From these result lithæmia and disorders of the liver, with Bright's disease as one of the remote effects, while they constitute an important factor in the causation of diseases of the heart and brain.

(2) A lack of general vigor due to insufficient exercise, resulting from sedentary occupations, cheap modes of conveyance, and a climate which, during half the year, makes out-door exercise unattractive.

(3) The excitement and anxiety which pervade all occupations at the present day, when men must wear themselves out in trying to keep pace with the mad rush of this age of steam, electricity and desperate competition.

(4) The intemperate use of alcoholic stimulants, than which no other cause of disease is so potent and destructive. This is an old enemy; and yet one whose assaults are ever new.

In applying preventive measures to these diseases, it is evident that the campaign must be largely educational. Frugal living, self-restraint and tranquillity of mind cannot be enforced by act of legislature, while even the legal suppression of intemperance has not yet been accomplished. The work must chiefly be done by medical men in their daily intercouse with their patients. Anticipating the dangers with which they are threatened, and helping each to so order the course of his life as to pass through these dangers unscathed, constitutes the highest and the most difficult branch of preventive medicine. Though a branch which we all are practising, it is capable of broader development and demands more persistent application.

There are, however, certain ways in which much benefit may be reaped from measures of a public character.

Two of these relate to the public schools. One consists in an increased attention to *instruction in hygiene*, and the other to the general introduction into the schools of *physical training*, and in giving this a conspicuous place in the curriculum. The absence of such training has, in the past, been the greatest defect in our school system. That this defect is already being remedied in Boston and elsewhere is a most hopeful sign; and we, as physicians and humanitarians, can render the public inestimable service by using our influence to have such instruction introduced into the schools of every city and town of the State. This should be a systematic course of gymnastic drill, extending through every grade of school, from the lowest to the highest, preference being given to the Swedish system, or something of like nature; and should be under the direction of specially trained instructors. Facilities for the training of such teachers already exist in Boston, and it would take but very few years to built up such a system of physical training that the graduates of our schools would be possessed of a sound bodily development which would give them a better chance for a long and useful life than they now have, while this would in no way hinder, but, on the contary, would greatly help, their intellectual development.

As a result of this inquiry into the practical effects of sanitation in the State of Massachusetts, we have found that these effects are not only tangible but brilliant, and constitute veritable triumphs of preventive medicine. But, on the other hand, we have found that with these triumphs we must not rest satisfied; for, while the hostile army of disease has been weakened in one part, it has gathered strength in another, and our partial victory is offset by severe reverses. The zymotic diseases, against which our sanitary army now chiefly directs its attack, cause but a paltry 18 per cent. of all deaths. In twenty years they have suffered a reduction of 30 per cent.; and supposing it were possible to keep up this rate of decrease by arithmetical progression, they would, in fifty years more, be reduced to zero. But, even if this extraordinary thing should happen, and the present increase of the local diseases should continue unchecked, the year 1940 would find us with a still undiminished death-rate.

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[1] The number of deaths from *unknown* causes is, through increased accuracy of registration, decreasing year by year, and this of course increases the number from *known* causes. The deaths from unknown causes in 1871 were 1,290, and in 1890–515. The difference between these figures is 775, and allowing for increase of population would be 946, and if this number of deaths had been correctly returned in 1871, we might now find a less marked increase in some of the diseases. But the increase in diseases of the brain, heart, kidneys and cancer alone is four times this amount, and therefore the increase cannot be accounted for by increased accuracy of the returns.

We cannot longer, therefore, confine our efforts to the suppression of this small minority of diseases, but must plan a new campaign against the greater foe. Here new and even greater difficulties confront us, for we have to contend with causes remote, complex and intangible; but to seek out and attack these causes is a duty which we now see to be imperative, and the forces of preventive medicine must be brought to bear upon them with new weapons and new modes of warfare. The Boards of Health cannot do this alone, but the whole medical profession must be the attacking army. May we all do good and valiant service against these treacherous foes which are sapping the vitality of our race and retarding the evolution of the perfected type of manhood.

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Original Articles.

IMPROVED METHODS OF MODIFYING MILK FOR INFANT FEEDING.

BY T. M. ROTCH, M.D.,
Visiting Physician to the Infant Hospital; Assistant Professor of Diseases of Children, Harvard University.

It is not my purpose to enter upon the question of whether cow's milk represents the best medium for the artificial preparation of an infant's food, or whether if this be accepted, it is necessary to modify this medium. These questions I have already dealt with in an article written in 1887. The opinion expressed at that time, that an ideal artificial food should be a close copy of good average human breast milk, I at present see no reason for changing.

It seems to me now as it did then that the best and most satisfactory work which can be done in solving the intricate question how and what to substitute for human milk can be most wisely accomplished by perfecting the materials with which we are to work. Purity of material and an exact knowledge of the elements which compose the material are essential and primary qualifications for ultimate success. When these are once known and mastered, it becomes a mere question of mechanics and mathematics to make the especial combinations which we are seeking after. In the light of the precise and advanced investigations which have been carried on in almost every other branch of medicine, it is most remarkable that such simple and self-evident truths as have just been stated, should have been practically ignored, although acknowledged. I repeat that it is most remarkable that in this present time and place, and so far as I know at no other place in the world, it is possible for a prescription to be written for the elements which are contained in human milk, and various precise combinations to be made with these elements. For the first time in the history of infant feeding are we enabled to change the strength of the elements which we are using, as precisely as we have for years been accustomed to see accomplished in pharmacy.

It is with the idea that it may be of some interest to the medical profession to understand the various steps by which we have arrived at these important results, that I have ventured to prepare a brief paper on this subject.

Assuming that average human milk is the combination of elements which we had best endeavor to copy, it is self-evident that a knowledge of this secretion must be understood not only chemically but physiologically and clinically. The details of this knowledge I shall not now dwell upon, as it would be but a repetition of a careful study of the subject which I incorporated in a paper read before the New York Academy of Medicine in 1889.

We must, however, understand that the combination of elements represented in human milk is exceedingly varying, not only as a whole but in its different parts. We must acknowledge that infants thrive not on a staple and uniform fluid, but on one which in its changes adapts itself to the digestive functions of the individual. Thus only shall we be able to understand that proprietary foods, no matter how exact in their composition, should be relegated to oblivion as unworthy of the notice of the practical physician of the present day. Thus only shall we acknowledge that an artificial food should be written as precisely for by prescription as the combinations of drugs which we are continually sending to the pharmacist.

By way of illustration, then, I beg leave to draw your attention to Diagram I which represents some analyses of human milk, any one of which although possibly a good food for numbers of infants, would be liable to prove ill adapted to certain individuals.

DIAGRAM I.

Human Milk Analyses (*Harrington*).

	1	2	3	4	5	6	7
Fat	4.0%	4.5%	3.0%	2.0%	4.0%	4.37%	2.96%
Milk sugar . .	6.5	7.0	6.0	6.0	6.0	6.30	5.78
Albuminoids .	2.0	3.0	1.5	2.0	1.0	3.27	1.91
Mineral matter,	..	..	..	..	..	0.16	0.12
Total solids,	..	..	..	..	..	14.10	10.77
Water	..	..	..	..	..	85.90	89.23
	100.0	100.0	100.0	100.0	100.0	100.00	100.00

Many infants would digest and thrive on Analyses I and II, but the average infant would be most likely to do well on Analysis III, while an individual with an especially highly developed function for digesting the albuminoids and a poorly developed function for disposing of fat would do well on Analyses IV and poorly on Analyses V. Analyses VI and VII represent the milk of a mother and a wet nurse. The infant that was fed by its mother on VI digested the high fats and albuminoids perfectly and has grown into a rugged and finely developed child having been nursed on this milk for a year. This infant would have digested Analysis VII, but probably would not have been so well nourished by it, judging from similar cases in my clinical experience. The infant that is now being fed on Analysis VII is digesting well and thriving on the low fats and albuminoids, while when it was attempted to feed it on a stronger milk such as VI, nervous symptoms and mal-assimilation resulted.

In this way clinical facts supply us with numerous illustrations which force us to the conclusion that we must in cases of difficult digestion, increase or diminish all or part of the percentages according to the infant's especial functional idiosyncrasy. In our endeavor to make a close copy, however, of this varying human milk, we must not only deal with the percentages of its elements but with its characteristics as a whole.

What are these characteristics?

A fluid consisting of about 88 parts water and 12 parts solids; slightly alkaline; sterile; free from extraneous matter, such as dirt of any kind; of a temperature on entering the infant's mouth of about 100° F; and with its total solids made up of fat (2 to 4½ per cent.), milk sugar (5 to 7 per cent.), albuminoids (1 to 3½ per cent.), and mineral matter (0.1 to 0.2 per cent.).

Assuming that cow's milk is the best medium to modify in copying the above-mentioned characteristics, the question arises which breed of cow is best adapted for our purposes? It has been found that the finer breeds of cows from the Channel Islands are not so rugged and are more liable to contract diseases, such as tuberculosis than the more common animals represented by Durham, Devon, Ayrshire and Holstein. The characteristic analysis of the finer breeds, such as Jersey and Guernsey is represented in Diagram II in comparison with the commoner breeds; the difference being seen to be mostly in the fat percentage and slightly in the albuminoids. (It may be well to state here that the albuminoid percentage in pure Holsteins is also a little raised.)

DIAGRAM II.

Cow's Milk Analyses.

	Jersey, Guernsey.	*Durham, Ayrshire, Devon, Holstein.*
Fat	5.50%	4.00%
Milk sugar	4.50	4.50
Albuminoids	4.25	4.00
Mineral matter	0.65	0.65
Total solids,	14.90	13.15
Water	85.10	86.85
	100.00	100.00

It is for future research to determine whether there is a qualitative as well as a quantitative difference between the secretion of the finer and more common breeds, but at present it would seem wiser in choosing our medium for modification, to select the milk of common cows. Practical experience has shown that the mixed milk of a carefully selected herd of a mixed breed of Durham, Devon, Ayrshire and Holstein. will produce the most satisfactory results as to stability and quantity of percentages. Such a herd, 60 in number, has been under my observation for the past six months and careful expert analyses have established the fact that we can rely on a very near approach to the percentages as they appear in

DIAGRAM III.

Average Milk from Selected Common Herd.

Fat	3.75%
Milk sugar	4.30
Albuminoids	4.00
Mineral matter	0.65
Total solids,	12.70
Water	87.30
	100.00

The food, drinking-water, stable accommodations and care of this herd is under expert supervision, and in order that the uniformity of the milk shall be preserved, any change in the food is made by slight degrees and the salt is given in regular amounts and immediately after the milking. Only the morning milk is used and the time the cows are milked to the time the milk is delivered, at a laboratory here in Boston, is just three hours. The cows are carefully groomed, the hands of the milkers are well washed and the milk is received directly into glass pails and delivered at the laboratory in glass jars insulated against heat and cold. In this way we have at our command a fluid which is exceptionally clean, to an unusual degree free from contamination, and of a known chemical percentage.

The problem which now meets us is by what method we shall modify this pure fresh milk so as to resemble in its reaction cleanliness, sterility and chemical percentage, not any especial formula, but any reasonable prescription which the physician may write for. This has been accomplished by still further increasing our materials or rather subdividing the pure material (whole milk) which we have as a comparatively stable medium at our command.

Diagram IV represents the chemical percentages, determined by numerous expert analyses, of the various materials used; these materials thus in their turn being definite products, known as the pharmacist knows his drugs, and ready to be combined in various proportions according to the prescription, by means of exact mathematical rules.

DIAGRAM IV.

Stable Materials for Prescription Combinations.

	Cream.	*Separated Milk.*
Fat	16.00%	0.26%
Milk sugar	4.00	4.40
Albuminoids	3.60	4.00

Distilled water. Milk-sugar solution, 20%. Freshly-prepared lime-water.

The means adopted in an especial laboratory for not only separating the fat from the whole milk but for obtaining a uniform fat percentage corresponding to the general mathematical formula employed for making the combinations, was a peculiarly finely-made and exact separator imported from Stockholm. With this machine running at a speed of 6,800 revolutions in the minute, it was found that if required, practically the entire quantity of fat in the whole milk could be extracted leaving in one of the trial analyses only thirteen one hundreths of one per cent. of fat in the resulting separated milk.

As a further proof of the accuracy of the separator and the above mentioned formula used for making the various prescription combinations required, the four analyses represented in Diagram V were made.

DIAGRAM V.

Analyses made for Verification of the Mechanical and Mathematical Work on Whole Milk, Cream and Separated Milk.

	Original Whole Milk.	*Cream.*	*Separated Milk.*	*Recombined Whole Milk.*
Fat	2.85%	18.21%	0.24%	2.75%
Milk sugar	4.05	3.76	4.35	4.05
Albuminoids	4.34	3.33	4.19	4.33
Mineral matter	0.66	0.62	0.72	0.68
Total solids,	11.90	25.92	9.50	11.81
Water	88.10	74.08	90.50	88.19
	100.00	100.00	100.00	100.00

The whole milk used in this experiment happened to be received from the farm at a time before the feeding of the cows had been sufficiently regulated to produce the higher fat percentage shown in Diagram III and now used for prescriptions. A portion of this whole milk was placed in a bottle and another portion in the separator. The resulting cream was placed in a second bottle and the separated milk in a third bottle. A combination, by the formula, was then made of the cream and the separated milk, with the idea of reproducing the whole milk contained in bottle one. This combination was placed in a fourth bottle. The four bottles were then given to Dr. Harrington to determine how nearly the percentages in bottle four would correspond to those in bottle one. The result as seen in Diagram V was so satisfactory that I then wrote the prescription represented in Diagram VI; had the milk modifier put it up and sent it to Dr. Harrington. The resulting analysis is also shown in

DIAGRAM VI.

	Prescription.	*Analysis.*
Fat	4.00%	3.92%
Milk sugar	7.00	6.95
Albuminoids	1.50	1.03

Since making the above analysis much greater accuracy as regards the albuminoids has been accomplished.

These experiments showed so conclusively that it is possible to put up a milk prescription accurately that I considered the chemical part of the process a success. The question of the reaction of the milk next had to be attended to. This is also something which will have to be worked out more fully in the future, but the probability is that the cows can be so bred and fed that they can be made to secrete a neutral or slightly alkaline milk. The reaction of this especial herd's milk was found to be so much less acid than the milk which I have ordinarily used, that where formerly I have had to use one-sixteenth part lime water, I now have to add only one-twentieth part, and even a smaller quantity will probably be sufficient for many milkings in the year. Another advantage to be found in the mechanism of the separator is that it removes effectually any dirt which may have fallen into the milk during the milking or the transportation. Cream also from the separator has, of course, the advantage of being just as fresh as the milk, in this case, being only between three and four hours old.

We now come to the subject of sterilization which has held such a prominent position in the history of artificial feeding during the past five or six years. As is usual in new discoveries in any branch of medicine much enthusiasm and an exaggerated idea that we had at last found a universal panacea for all evils of the past, was expressed by the exponents of sterilization. In my article on feeding in Keating's "Cyclopædia of the Diseases of Children," I stated that sterilization was but one factor in the problem which we had to deal with and that all the other factors which had been solved in the past must still be made use of if we expected to evolve a successful artificial food. The pendulum is now apparently swinging somewhat in the opposite direction and we are at present in danger of underrating a great and important adjunct to the feeding problem. The objections to sterilization are the boiled milk taste and the possible lowering of the nutritive properties of the milk sterilized, by coagulation of the coagulable portion of the albuminoids. In copying human milk we must remember that although the infant on the breast is being fed with a sterile food, it is a raw food and not one which has been heated to 212° F. That is, that sterility does not necessarily mean sterilization. With the view of meeting this question at once, for it is exceedingly important that infant modified milk sent out from a laboratory should be in a condition to keep without ice for 24 hours, I have had a series of bacteriological examinations made by Dr. Ernst, and I am also indebted to Dr. Henry Jackson for valuable work and information on the subject.

As the results of these bacteriological examinations are not yet conclusive, I shall reserve their detailed description for a later paper and shall now merely refer to a few general deductions which I have been able to make from them. On referring to the valuable work of Professor Leeds on this subject, published in the *American Journal of Medical Sciences*, June, 1891, we find that if the temperature of the milk is kept below 171° F., coagulation of the albuminoids to a degree which would be detrimental to digestion does not take place.

It was shown by Dr. Ernst's experiments that when the milk was heated to 167° F., it was as practically sterile for twenty-four hours as when it was heated to 212° F. This observation has been found to hold good when applied to the testing of the milk in the laboratory, where by means of a large sterilizer with a thermometer attachment a high or low temperature can be obtained at will. Heating the milk then to 167° F. avoids coagulation, to a great degree lessens the boiled milk taste, sterilizes sufficiently for a twenty-four hours' infant feeding, preserves the milk for transportation and allows the lime water, when needed, to be mixed with the milk at the laboratory before sterilizing. This latter modification could not be done when a temperature of 212 ° F. was used, on account of the reaction which took place with the milk sugar.

We have then, by perfecting this new method of modifying milk, an important instrument placed at our disposal, for aiding us to carry out exactly whatever line of thought we may choose to follow in our cases of artificial infant feeding.

IMPROVED METHODS OF MODIFYING MILK FOR INFANT FEEDING.

BY HENRY JACKSON, M.D.

At Dr. Rotch's request I have made a few analyses of the milk as brought to the laboratory, and a few experiments as to the bacteria present in the milk after it has been subjected in the laboratory to varying temperatures.

In the first place, as to the milk as delivered in the laboratory. As Dr. Rotch has said, it is very free from all specks, gross dirt. Examination of the milk has shown it to contain a small number of bacteria. The milk in this case, for instance, 68,000 to the cubic centimetre. That does not mean that the milk contains 68,000 different bacteria, merely that that is the number, but there may be many thousands of one form. Ordinary milk contains a great many more bacteria than that. A very good milk contains, after it is milked an hour or two, 100,000 to the cubic centimetre. I have made several of these analyses of the milk, and they all are practically the same, 68,000, 59,000; the cream 100,000 and 97,000. What is more important than the number of bacteria in water or milk is the character of the bacteria, how many different forms are present. I have found some five or six different varieties in the milk. The number of varieties is important as showing the different sources from which the milk is contaminated. If we take absolutely sterilized milk and inoculate with a pure culture of one germ, at the end of a few hours there would be many thousands of that germ, even though we had put in but a few hundreds.

Dr. Rotch was desirous of obtaining a milk which was practically sterile at a temperature below 212°; and as far as my few experiments go, it seems as if that method were practical. Theoretically, there is no reason why sterilization at 167° should not be as efficient as sterilization at 212°. At a temperature of 167° all, or practically all, living, fully-developed bacteria are destroyed. The so-called resisting forms of bacteria are not affected at the temperature of 167°, but on the other hand they are not affected by a temperature of 212°. We sterilize absolutely in the laboratory by destroying by high temperature all living, fully-developed bacteria on one day, setting the material aside for twenty-four hours in order to allow the germs to develop into full-formed bacteria, and then sterilizing the material a second time and a third time on the third day. My results here show that there is no appreciable difference in the number of bacteria found in the milk where the milk was sterilized at 212° or at 167°. All the specimens of milk that I have examined have remained practically sterile for from five to eight days, whether sterilized at 167° or at 212°. At the end of a week a considerable number of colonies have developed in every specimen that I have examined. Of course, practically, for use in the nursery, it is not necessary that the milk should remain intact more than two or three days at the outside, usually for only twenty-four to thirty-six hours. There was no difference as to the number of bacteria present, no practical difference, whether the specimen of milk sterilized was the original milk, skimmed milk, cream, or milk modified as suggested by Dr. Rotch. In the lime water which was sent to me from the laboratory, which had not been sterilized, I found no colonies. I examined only two specimens of milk which had been sterilized at 150°, a temperature which has been suggested as advisable quite recently in France, and I found that there was very little effect on the bacteria, that is, after the milk stood twenty hours there were more bacteria in the milk than I found in the original milk.

One very important point I think in obtaining milk as it can be obtained in this laboratory is that the milk is sterilized before any chemical changes due to the growth of bacteria have taken place. This point was very strongly brought out by Dr. Jeffries in 1888, who insisted then that it was not only important to sterilize milk, but to sterilize it early before the chemical changes due to bacterial growth had taken place in the milk.

Of course, at present we know very little of the chemistry of the products dependent upon bacterial growth, but we do know that many of the most virulent poisons known to exist are due to the action of bacteria on albuminoid bodies.

No case of cholera has yet been received in New York, from any European port, but the health officer and his assistants are on the lookout for the disease.

TRICHINOSIS.

BY J. H. MCCOLLOM, M.D.

The history of the trichina spiralis dates back to 1821, when Hilton described calcified trichina capsules. He, however, considered them to be the cysticercus cellulosa. In 1822, Miller of Heidelberg described these capsules. In 1828, Peacock deposited in the museum of Guy's Hospital, London, a muscular preparation containing the capsules, calcified. This parasite was, however, first fully described by Mr. Owen in 1835, from a specimen given to him by Mr. Paget. In March, 1842, the late Dr. H. I. Bowditch read a paper on this subject before the Boston Society for Medical Improvement, in which he gave a very elaborate account of the parasite. In describing the case, Dr. Bowditch says: "The muscles and cellular membrane seemed to be literally covered with myriads of white lines, looking at first sight like the ova of the common house-fly." This writer estimated that the number of these white lines in the patient's body must have been, at least, 7,680,000. At this time the method of introduction of the parasite was not known, as Dr. Bowditch says near the end of his article that the question of the manner in which the animal got into the patient's body is wrapped in darkness. Virchow had not seen a case until 1859. Zenker's famous case, in 1859, brought the subject into prominence, and may be considered the starting-point of accurate knowledge of the disease. The history of this case, as given in Ziemssen, Vol. III, page 617, is as follows: "A girl, aged twenty, previously healthy, had been ailing from Christmas, 1859; she was forced to go to bed on New Year's day, and on January 11, 1860, was admitted to the Dresden Hospital. The symptoms in the beginning were great debility, sleeplessness, loss of appetite, constipation, heat and thirst. In the hospital high fever, a swollen and painful condition of the abdomen, extreme tenderness of the muscular system, especially of the extremities, contractions of the knee and elbow joints and œdematous swelling, especially of the leg below the knee, were observed. Death subsequently took place with the symptoms of pneumonia. The autopsy revealed only an extensive collapse of the left lung, interspersed with small infiltrated spots, intense bronchitis, and marked hyperæmia of the mucous membrane of the ileum. The microscopic examinations of the muscles showed in every preparation dozens of the trichinæ lying in the muscular parenchyma in all forms, curled and extended, and giving the most positive signs of life. Together with these there were many shorter, broader, younger specimens. In every drop of intestinal mucus were numerous sexually mature trichinæ, the males one and one-half and the females four millimetres in length. It was found that, on the estate at which the girl had served, a hog had been killed December 21, 1859. Zenker discovered very numerous capsulated trichinæ in the remaining preserved hams and sausages. It then appeared that the hostess, the proprietor, and the remaining inhabitants of the place were sick at that time, the two former undoubtedly from trichinosis; the butcher who had killed the hog was also taken very ill with symptoms of trichinous 'gout.'"

In 1859, 1860, and particularly 1862, many cases were reported in Germany. The most extensive out-

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[1] Discussion on the paper by Dr. F. H. Drew, before the Massachusetts Medical Society, June 8, 1892.

break of this disease on record occurred in October, 1863, at a small country town of Prussia near the Hartz Mountains. One hundred and three persons, mostly men in the prime of life, were infected from sausages; twenty died and eighty were made more or less ill. In this country, in 1864, Dr. Joseph Schnitter, of New York, reported two cases. Nine cases were reported at Marion, Iowa, in 1866, by Dr. Joseph H. Wilson. In 1867, Dr. M. Calkins, of Springfield, reported thirteen cases and one death from this disease in that city. In 1868, Dr. E. K. Hun, of Albany, N. Y., reported two cases of this disease with one death. Dr. George Sutton, of Aurora, Ind., in 1874, published a pamphlet on this subject, giving an account of nine cases that occurred in Dearborn County, Ind. There were three deaths. In one of the fatal cases the body was exhumed one week after death and a portion of the gastrocnemius removed for microscopical examination. It was found that in this specimen the trichinæ showed some evidence of motion. Dr. J. T. Mills, in 1888, reported nine cases and one death as occurring at a farm near Johnstown, Licking County, Ohio. In the same year, Dr. C. E. Johnson, at the request of the State Board of Health of Ohio, investigated an outbreak of eight cases of the disease near Sidney. In the monthly bulletin of the Iowa State Board of Health for March, 1891, Dr. G. C. Moorhead, of Ida Grove, reports eleven cases and five deaths. In all of the fatal cases pneumonia developed from five to seven days before death. In these cases what is known as summer sausage was the cause of the attack. The method of curing summer sausage is by seasoning, putting into casings and exposing to smoke for a few days. This pork is eaten raw. There had been no deaths in Massachusetts from trichinosis for about fifteen years until the deaths reported by Dr. Drew occurred. In the middle of April of this year, 1892, eight cases with one death occurred in Boston. These cases could be directly traced to the hams of one pig. A microscopical examination of these hams was made by the State Board of Health, and they were found to be loaded with trichinæ. In the non-fatal cases, although there was no microscopical examination of the tissues of the patients, the history of the attack as given by them was characteristic of the disease. Although comparatively few cases of trichinosis are reported, it is probable that the disease is much more frequent than is generally supposed, from the fact that at autopsies from one to two per cent. of the bodies are found infested with calcified trichinæ.

The rarity of the disease renders the diagnosis extremely difficult. Rheumatism, typhoid fever and typhus fever are frequently confounded with it. Diarrhœa is frequently a prominent symptom in trichinosis as well as in typhoid fever. The muscles present various degrees of swelling and hardness. The patient lies with the knees drawn up and with the arms sharply bent, presenting somewhat the appearance of a person suffering from an attack of acute rheumatism. Delirium of an active form is not present, but there is a peculiar apathetic state of mind. Œdema of the eyelids and face is an important pathognomonic sign; appearing about the seventh day; disappearing in about five days; and returning in some cases after a few weeks. Violent and tumultuous action of the heart is often a prominent symptom in the first week of the disease, due, probably, to the irritation of this organ by the parasite. The constant movement of the heart, however, soon drives the intruder to other and more quiet parts of the system. This is probably the reason why at autopsies trichinæ have not been found in the heart when every other organ of the body has been invaded. The immediate cause of death, in a very large proportion of cases, is insufficiency of respiration due to the immense number of trichinæ in the respiratory organs, the draphragm, and muscles of the larynx.

A few words regarding the natural history of this parasite may not be amiss. It is found in two forms, the intestinal trichina and the muscle trichina. The mature intestinal trichina is a fine, round, slightly-coiled worm. The males are a millimetre and a half long. The females are from three to four millimetres long. At the caudal extremity of the males are two lobular masses, the penis and the anus. In the females the genital opening is situated at the junction of the first and second quarters of the whole body. The embryos are born living. The birth of the embryos begins on the seventh day after the introduction of the muscle trichina into the stomach, and may continue for weeks. These embryos soon emigrate to the voluntary muscles by penetrating the intestinal wall. In some instances it is possible that the embryo may penetrate the coats of the blood-vessels, and be carried by the circulation to the different parts of the body. After reaching the muscles they force themselves into the primitive fasciculi, increase in size, and finally roll up in coils. The sarcolemma of the primitive fasciculus around the trichinæ enlarges and forms the capsules by the proliferation of cells. In fourteen days the muscle-trichinæ attain their full size, — 0.7 to 1.0 millimetre in length. After a time a deposition of lime salts takes place in the capsules, and they then present the appearance of small white dots or lines which can be seen with the naked eye.

All animals may become infested with trichinæ, the carnivorous through the medium of their food; the herbivorous by drinking-water. The vitality of this parasite is very great; it may live for a long time in decomposing flesh and in water. Trichinæ have been discovered in all countries where investigations have been made, but this parasite has been found to prevail to a greater extent where it is the custom to feed swine on city swill and the refuse from slaughter-houses. The present method of rearing swine, in some localities, is a perpetual menace to the public health and demands the careful attention of Boards of Health.

The symptoms caused by the presence of this parasite in the hog are practically similar to those observed in man, although there have been no very extended investigations regarding this subject. The fact, however, that hog cholera and trichinosis are independent diseases has been conclusively proved.

In the twentieth Annual Report of the State Board of Health of Massachusetts, Prof. E. L. Mark, of Harvard University has published a series of very exhaustive investigations regarding the prevalence of trichinæ in swine slaughtered for food. This observer found that of 3,298 hogs raised in Massachusetts, 436, or 13.22 per cent., had trichinæ; while of 888 swine raised principally in the West, only 21, or 2.36 per cent., were trichinous. Of the 234 hogs raised in State institutions, where in some instances the animals were fed on the refuse from slaughter-houses, a practice which has now been abandoned, 42, or 17.95 per cent., were found to be infected with trichinæ. Infection of hogs by eating trichinous rats may sometimes occur;

but this cannot be considered an important factor in the causation of the disease. The only explanation of the prevalence of the parasite in Eastern hogs as compared with Western is the fact that in the former section the animals are fed on house offal, which always contains more or less uncooked meat, and on the refuse from slaughter houses; while the latter swine are fed on corn, acorns and grass. In the thirty-ninth Annual Report of the Massachusetts Board of Agriculture is an extremely valuable paper by Mr. Theodore Louis, of Louisville, Wisconsin, on the "Breeding and Feeding of Swine," in which great emphasis is laid on the importance of wholesome food for these animals. If the directions given in the paper were followed, the percentage of cases of trichinosis would be very much diminished. The remark is frequently made that the disease is so rare that is unnecessary to make any regulations regarding it. Although there have been only some twelve or fifteen reported cases in Massachusetts in the past fifteen years, it is reasonable to suppose, from the difficulty of making an exact diagnosis, that there may have been many cases that were not reported. As a matter of fact the disease is much more common in man and swine than is generally supposed. Microscopical examinations prove the truth of this statement.

It is frequently said that cooking renders pork infested with trichinæ harmless. While it is true that a temperature of 170° F. will destroy the parasite, it is also true that in many instances the interior parts of large hams, during the process of cooking, are not heated to this point. There are also many of our citizens who prefer, possibly from motives of economy or from habit, to eat underdone pork; and they certainly should be protected.

In European countries at the present time there are very stringent regulations regarding the microscopical examination of swine slaughtered for food. In this country a microscopical examination is made only of pork that is intended for exportation to European countries. These examinations are made under the direction of the Bureau of Animal Industry at Washington, D. C. To show how carefully these examinations must have been made and of the benefit that has been derived from them, it is sufficient to say that the stamp of the United States Government Inspector on American pork places it on an equality with that of Germany.

If, for the export trade, a well-conducted system of microscopical examinations of pork intended for food has been inaugurated, how much more important it is that a similar system should be established for the examination of pork intended for home consumption.

In order to render pork absolutely harmless as an article of diet the following measures are requisite:—

(1) Regulations regarding the feeding of swine; particularly the prohibition of the use of city swill and slaughter-house refuse.

(2) Microscopical examination of a portion of the carcass, as is now done with pork intended for exportation.

(3) Regulations regarding the proper housing of swine.

(4) Instructions regarding the importance of properly cooking pork.

The Sydenham Post-Graduate Course and Hospital has been organized at Albany, N. Y.

AN OUTBREAK OF TRICHINOSIS IN COLRAIN.[1]

BY FRANK H. DREW, M.D., OF SHELBURNE FALLS, MASS.

During the latter part of January and February of this year, there occurred in the hill-town of Colrain, Franklin County, an outbreak of trichinosis, which, so far as I know, exceeded, in the total number of cases, and the number of deaths, any previously recorded outbreak of this disease at one time and place in the New England States. Colrain has several cotton manufacturing villages within its limits, and the one where this epidemic occurred is called Willis Place, and consists of a cotton mill employing about one hundred hands, a long brick block containing nineteen tenements in which all the operatives dwell, and two or three isolated houses occupied by the superintendent and the few Americans employed about the mill.

The inhabitants of the block are all foreigners, — French Canadians, Austrians and Germans from Bavaria and Würtemberg, which latter have to a large extent replaced, during the last few years, the French Canadians who formerly furnished most of the workers in the mill. The population is mainly young, there being few old people, and frequently the whole family works in the mill. Most of these Austrians and Germans have been in this country but a short time, and have learned very little English. I used the German language in communicating with them, but their dialects are nearly unintelligible, and the early history of the cases was therefore not well understood in the beginning of my attendance. Perhaps, if an interpreter had been employed, an earlier diagnosis might have been reached. This outbreak occurred toward the close of the influenza epidemic, and the first physician who was called to the cases mistook them for cases of influenza, although he was much puzzled by some of the symptoms. He soon fell a victim to influenza himself and was unable to observe the further course of the cases. It was for this reason, therefore, that in many of the cases of moderate severity no physician at all was employed, and some of the severest cases were not attended by a physician until the disease was well advanced, as they thought their malady was the prevailing grip, and not of a serious nature. My experience with the disease began on February 8th, when I saw two cases in the same family. On February 12th, I met another case also in the same family. On February 14th, I was called to two other families, in one of which there were three cases and in the other a single case. These seven cases were all that I attended, and it was not till several days later that I became aware of the fact that there were, or had been, many cases of a similar nature among the population of the block. I will relate briefly the history of the cases which came under my observation.

Case I. Frederick H., age twenty-one, single, native of Bavaria. Had been sick ten days; complained of loss of appetite and general weakness, and some stiffness about the legs and ankles, which had been swollen slightly, but the swelling had then disappeared; his face and eyelids had been swollen a few days previously, but this had also disappeared; did not sleep well at night; bowels moved once every day. No pain or tenderness anywhere. Pulse 100, temperature 103°. He remained in bed about a week, with a temperature ranging from 101° to 103°, which gradually became normal, and there was no increase in the severity of the other symptoms. In this case there were no gastro-intestinal symptoms at any time, and the only characteristic signs of trichinosis were the early œdema of the face and eyelids, and the very slight stiffness of the legs. The temperature was higher than in some of the other cases which were much more severe in the muscular symptoms, and generally the amount of fever seems to be no guide to the gravity of the disease, as a mild case may have a temperature of 103° for several days, while in a severe case which is to end fatally the thermometer may never register above 101°.

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[1] Read before the Massachusetts Medical Society, June 8, 1892.

Case II. Henry H., age nineteen, brother of the preceding, taken sick about the same time. Had had œdema of face and eyelids a few days previously, which had disappeared. Some stiffness of arms and legs, which had been swollen, some pain on motion, dorsal decubitus and inability to sit up or turn over in bed; occasionally slight pains in abdomen, bowels constipated; respiration 30 per minute, pulse 90, and temperature 101°; sweat considerably; appetite lost, and some difficulty in swallowing. The muscular symptoms increased in severity during the progress of the disease; dyspnœa, difficult deglutition and slowness of speech becoming more pronounced, and the feet and legs very œdematous, but there was not very much pain or tenderness in the muscles. He had considerable pain and tenderness in the abdomen, and always felt better after his bowels had been moved by cathartics. This was one of the severest cases which recovered, and it was about six weeks from the beginning of his illness before he was able to sit up. He made a rapid convalescence, however, and is now quite well.

The temperature in this case never rose above 102°, and frequently was only 100° during the period of greatest severity. Insomnia was quite troublesome.

These two cases had been diagnosticated as "grip" a few days previously, which saved me from embarrassment, as I was not asked to give my diagnosis; but I thought they resembled rheumatism more than any other disease.

Case III. The father of the two preceding cases. Was not seen till my second visit to them on February 12th. He was a very voluble talker, but his Bavarian dialect was nearly unintelligible and I could only make out that he suffered from pain in the bowels, diarrhæa, and pain in the legs, which were not œdematous at that time. As I could not understand him well enough to elicit the history of the trouble, it did not strike me at the time that his disease was the same as that from which his sons were suffering. His pulse-rate and temperature were normal and continued so during all the time he was sick. His appetite was good throughout, and he persisted in being up and walking around. His diarrhœa continued for three or four weeks, and he had a good deal of pain in the abdomen. His feet and legs became œdematous, and he complained of stiffness and pain in the muscles. He also had had œdema of face and eyelids in the beginning of the attack.

At first, I considered this case as one of intestinal derangement. After I had made the diagnosis of trichinosis, I learned that three other members of this family, two girls and a boy, had been ill with the same symptoms and at the same time, from one week in the mildest case to three weeks in the severest.

Case IV. Mrs. E., age twenty-eight, native of Austria, visited first on February 14th, six days after seeing the first case, and it was the first intimation that I had that there were other cases in the block similar to those already described. Mrs. E. had been sick three weeks, and her disease had, in the early stage, like that of the first two cases, been diagnosticated "grip." She had rather severe gastro-intestinal symptoms, vomiting and diarrhœa, abdomen bloated and painful on pressure; legs and arms swollen: and stiffness and soreness of the muscles all over the body; dyspnœa considerable; perspiration constant; pulse 120; temperature 103.5°; insomnia very distressing; mind clear. After a day or two the vomiting ceased and the diarrhœa became less severe, but continued to the end.

The other symptoms grew worse daily, the œdema increasing till the legs and thighs were enormously enlarged and of a board-like induration, and the muscular pains became so excruciating that large doses of morphine were necessary to afford any relief. The muscular stiffness was so great that she was unable to move any portion of the body but the arms, and those with difficulty. Dyspnœa increased till the respiration rate was sixty per minute, and deglutition became more and more difficult till fluids were regurgitated through the nose. There was also stiffness of the muscles of mastication and difficulty in opening the mouth. The pulse varied from 120 to 130 per minute and the temperature from 103° to 104° till the day of her death, when she went into a state of collapse and the temperature fell. The urine was examined with following result:

Reaction strongly acid, color very dark. Specific gravity 1040. Albumen 1%. Large amount of sediment, consisting of urates and what seemed under the microscope fat globules, and granular detritus. No casts were found.

Her death occurred on February 23d, after an illness of about four weeks.

The next three cases were seen for the first time on the same date as the last one, and were all in one family, and showed the three grades of severity — mild, moderate and fatal.

The youngest, John R., complained only of languor and weakness, and some stiffness. Was able to be up and around the house and recovered in about three weeks.

E. R., his brother, was more severely affected, although not confined to the bed at any time. His afternoon temperature was usually 102° and at night he sometimes had "phantasieen," as he termed it. His legs became œdematous and he suffered considerably from pain in the muscles, particularly those of the chest. He also recovered after three or four weeks' illness.

Mrs. R., age twenty-eight, wife of E. R., had been ill about two weeks as her husband and her brother, but they had all continued to work in the mill till within two or three days of my seeing them. She was confined to the bed with symptoms similar to those of the others. Insomnia was a prominent symptom with her as well as with her husband. Considerable œdema of lower limbs and pain and tenderness in the muscles on motion. Temperature 101°, pulse 100.

This woman was about six months' pregnant with her first child, and informed me on February 19th that she no longer felt any fœtal movements and feared the child was dead. In the latter part of February Mrs. R. passed from my care into that of another physician, and finally died on March 17th, having been ill about six weeks.

After seeing these last four cases on February 14th, I began to realize that there must be an epidemic of some disease, but it was not till February 20th, when I met the superintendent of the mill going his rounds among the sick, that I learned that there were many other cases of a similar nature in the block, one of which, a Canadian Frenchman, Charles B., had died that day, after an illness of three weeks, his disease having been diagnosticated "typhoid fever." This was the first fatal case, Mrs. E. and Mrs. R. being the next two victims, and B.'s wife, who was taken ill soon after her husband, was the fourth and last fatal case. Mrs. B. lived till March 22d, about seven weeks from the onset of the symptoms.

I obtained some pieces of muscular tissue from the body of Mrs. B., and trichinæ were found to be very numerous in them all. Four weeks previously, when Mrs. E. died, I had just made the diagnosis and endeavored to get some muscular tissue from her, but the husband's permission could not be gained.

Another French Canadian woman, Mrs. R., age forty-four, was the first person in the block to be taken ill with the symptoms of trichinosis, and the last to recover therefrom. She was not very strong when attacked by the disease and was more prostrated than any of the other cases which recovered: she had a persistent diarrhœa for twelve weeks, but is now gaining.

These are all the cases, I believe, which were seen by a physician at some stage of the disease. For information in regard to the other cases I am indebted to the superintendent of the mill, Mr. A. H. W., who observed them closely, and made frequent visits to them while confined to the house.

Mr. W. states that there were twelve others who were ill enough to be absent from work in the mill, for from one to three weeks in various cases. Of these, four were in one family, three each in two families, and one each in two others, all of whom had œdema of face and eyelids, weakness, pains, and more or less gastro-intestinal symptoms.

There were at least fourteen others who had œdema of face and eyelids and did "not feel well," but kept at work or lost but two or three days.

The duration of the disease from the time of the ingestion of the trichinæ must be reckoned as longer than would appear from the mill records, for they all, even the severe cases, worked till œdema of the face and eyelids appeared, which is said to occur on the eighth day, and I think the gastro-intestinal symptoms must have been very light in most of the cases.

Besides these thirty-six cases enumerated, there were undoubtedly many other mild cases among the children and others who do not work in the mill, as Mr. W. tells me many of them had œdema of the eyelids and face, and this is such a noteworthy and characteristic symptom of trichinosis, that in the presence of an epidemic like this it may be considered almost pathognomonic.

In addition to the cases in the block a few mild ones were reported in a village a mile distant, so that I should estimate that at least fifty persons were more or less affected with the symptoms of trichinosis during this epidemic.

As soon as a correct diagnosis was reached, efforts were made to trace the source of the diseased pork, but it was so long after the disease broke out that none of it could be discovered. Not much help or co-operation can be obtained from butchers in this respect, for they seem to feel that blame will attach to themselves and that their trade will be lessened if the facts are known — which seems to be justified in the present instance, as it has been nearly impossible to sell any form of pork or sausage to the inhabitants of the block since the epidemic. From the inquiries made it seems most probable that the trichinæ ingested were contained in bologna sausage. It is admitted by all that they used this particular form of sausage, and large amounts were consumed in the families where the fatal cases occurred. It is eaten just as it comes from the manufacturer, at whose hands it does not receive much cooking, as this impairs the flavor; and it was a favorite dish with the three women who died, as they worked in the mill and had little time for cooking. The husband of Mrs. E. never ate it, however, and, although he ate pork in other forms, never showed any symptoms of trichinosis. Mr. R. states that before they were taken sick they had some bologna sausage which he thought tasted badly and therefore did not eat much of it, but his wife liked it and ate a large quantity with a fatal result. Mrs. R. says that she ate some sausage which did not taste well and made her sick. These sausages, which are very cheap, were obtained from the local butchers who get them from Chicago.

As Secretary of Agriculture Rusk has established an official laboratory in Chicago for the examination of pork intended for export, a larger proportion of trichinous meat will be sold in the American market, and the disease will be likely to prevail to a greater extent than heretofore. What becomes of the pork condemned as unfit to be exported? Is it worked up into these cheap sausages which were the probable cause of this epidemic?

A. Seibert, of New York, states that investigations show that from five to sixteen per cent. of American hogs contain trichinæ, while in Germany only one out of 2,000 contains them. The chances of infection are therefore far greater in this country than in Germany, although the disease has been of more frequent occurrence there from the fact that the Germans are much more in the habit of eating pork and sausages in a raw or under-done condition.

Here was an epidemic of more than fifty cases with four deaths, witnessed by three physicians, yet it was not until the second death and three or four weeks from its commencement that a correct diagnosis was reached; and it is possible that if there had been no fatal cases the diagnosis of trichinosis might never have been made, and this outbreak might have passed unrecognized and unrecorded. This suggests the importance of directing the attention of physicians to the disease, and the necessity for them to make themselves familiar with its symptoms and course, and its differential diagnosis from those diseases for which it is most liable to be mistaken, so that they may be able to make the diagnosis from the clinical symptoms, which should be comparatively easy in any case of moderate severity, and will be rendered positive by finding the trichinæ in the suspected meat or in the stools or muscles of the patient. Yet in a large proportion of the cases reported, the disease is at first supposed to be something else, and many cases probably escape detection altogether. It is the most widely disseminated and deadly of all known parasitic diseases, and its early detection is of the utmost importance, not only to render treatment effective in the case of those already affected, but to prevent other persons from contracting the disease from the same source.

Grawitz, Virchow's assistant, states that trichinæ were found, on autopsy, in one-third of the cases of so-called muscular rheumatism. Probably the proportion of cases would not be so great in this country, but it is quite likely that we may at times be treating former sufferers from trichinosis for rheumatism, when their symptoms are in reality due to the encysted trichinæ. I have had one such case myself, an American, one of the Springfield cases reported to this Society twenty-five years ago by Dr. Calkins; this man two years ago had a severe attack of what I then considered muscular rheumatism, but now suppose to have been due to the presence of trichinæ which had been there twenty-three years. And when we consider the immense numbers of the parasites and how thickly the muscles are studded with them, it is surprising that, after migration has ceased and they have become encysted, the muscles should so quickly recover their function and show so little effect from their presence. So far as I know, but two or three of those who suffered in this epidemic have had symptoms, since their recovery, which might be attributed to the presence of the trichinæ.

In Germany many more cases of trichinosis are reported than in this country, which must be partly due to the fact that obligatory meat inspection is practised and the attention of physicians more generally directed to the detection of the disease, since in Berlin in 1877, the year before meat inspection became obligatory, only six cases of trichinosis in man were reported; but in 1878, after obligatory meat inspection was established and the attention of physicians called to the subject, one hundred and two cases were reported, with eight deaths.

The occurrence of so great a number of cases in one small community in our midst will serve to show how liable we are to encounter cases of the disease, and the importance of directing our attention to its detection, when we shall probably find that trichinosis is of more frequent occurrence here in Massachusetts than is shown by statistics.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from Vol. CXXVI, No. 25, page 633.)

EXAMINATION BY PROBING OF THE BILIARY DUCTS.

Rose,[41] while discussing the conservative surgical treatment, describes the technique of examining the permeability of the gall-ducts and restoring their patency. His investigations on cadavers show that the great ducts will receive a No. 12 F. catheter, and that the union of the hepatic with the common will always transmit a No. 8 F.

EXTIRPATION OF PORTIONS OF THE LIVER.

Hochenegg, after reporting a successful case (that is, patient well eight months after operation) of removal of the gall-bladder and adjacent portion of the liver (excised portion 3.5 cm. by 4.5 cm.) for carcinoma, recommends the extra-peritoneal method, and describes briefly his technique.[42] The method consists of excising the diseased portions of the liver with a thermo-cautery, and controlling the hæmorrhage by iodoform gauze packed in and around the wound. These tampons are sutured in place, and the liver held against the abdominal wound by being transfixed by a fibroma pin passed through the injured portion, and the gauze thus preventing it from falling back into the abdomen. The external end of the pin rested on the skin at either side of the incision. The external dressing consisted of iodoform and sublimate gauze. Recurrent hæmorrhage (in one case on the second day after the operation) was controlled by renewing the gauze. The fibroma needle was removed on the twelfth day and also the gauze packing. These cases seem to show that a method has been found of controlling hæmorrhage from operation wounds of the liver, and, if effectual, will remove a fear which has thus far prevented surgeons from extensive operations on this organ.

HEPATIC SURGERY.

Mr. Knowsley Thornton,[43] has presented his experience in hepatic surgery, and records nine cases in detail. In seven, gall-stones were removed; in one, hydatids. In several instances Mr. Thornton has left the gall-bladder open in the abdomen, but with due care in the arrangement of the tube, and with auxiliary drainage of the pelvis, the cases terminated favorably. During the period of these nine cases which were operated upon, Mr. Thornton also performed five exploratory operations in connection with hepatic disease. In the first case the results were negative, owing to the matting of the parts; in the second, a malignant tumor was found; the third case was negative, and suspicion exists that a stone was overlooked; in the fourth case, there was probably a gumma; in the fifth, no gall-stones were found, but the patient was relieved.

The chief symptoms to be depended upon in making the diagnosis of the presence of gall-stones are: the sudden onset of pain and its sudden departure; its manner of travelling around the body and through to the angle of the scapula; the sense of constriction of the diaphragm, and when there is present a mobile pear-shaped tumor at about the situation of the gall-bladder, which rises and falls with respiration. These symptoms complicated with jaundice make certain that the stone has passed through the cystic duct and become impacted in the common duct. In these cases three entirely new departures were made:

(1) Direct incision of the common duct and removal of the stone, with complete suture of the opening without opening the gall-bladder.

(2) Incision into the common duct, needling the stone into fragments and closing the duct over them so that they must find their own way into the duodenum.

(3) Leaving the gall-bladder open in the peritoneum with efficient provision for drainage through the abdominal incision in cases in which it is impossible to suture it into the abdominal wound, and not advisable to attempt complete intra-peritoneal suture.

In the latter case, and wherever fouling of the peritoneum was possible, he urged a counter-opening and drainage as in his seventh and ninth cases.

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[41] Deutsch Zeitschr. f. Chir., 1891, bd. xxxi, p. 480.

[42] Wien. Klin. Woch., 1890, iii, 52.

[43] Lancet, March 7, April 4 and 11, 1891.

ON THE DIAGNOSIS OF CARCINOMA OF THE PANCREAS.

Dr. N. Musineci,[44] of Naples, Italy, writes as follows:

(1) The diagnosis of carcinoma of the pancreas is difficult in the majority of cases, as it is most easily confounded with neoplasms of other organs.

(2) Diagnosis by exclusion is the best method of diagnosing disease of the pancreas in general, and carcinoma in particular.

(3) Icterus is present from the beginning of the disease. The presence of a tumor, whose site corresponds to that of the pancreas, the finding of fat in the fæces and sugar in the urine, are facts of great value in the majority of cases in making a diagnosis.

(4) The presence of these signs, although of great diagnostic value, does not enable one to determine the primary origin of the neoplasm, as the transmission of cancerous nodules from one organ to another is the rule, and we have no means of knowing whether the pancreas, liver or stomach was primarily affected.

NEPHORRHAPHY AND ITS AFTER-EFFECTS.

This operation has been performed fourteen times by Dr. Tuffier[45] for movable kidney. There are three orders of symptoms produced by this disease: (1) pain, (2) gastric disturbance, (3) neurasthenia. There are, therefore, three clinical types of movable kidney. The painful form, with or without hydronephrosis, is the most frequent and is the most favorable for treatment, since in ten cases pain disappeared entirely after the operation, and in three other cases pain was much relieved. The dyspeptic form is less common, (two cases), and is accompanied by enteroptosis or hepatic lesions. The neurasthenic form is also rare; it includes the entire gamut of nervous symptoms, as well as hysteria. There are two absolutely distinct etiological varieties, from a therapeutic point of view; the simple movable kidney or traumatic displacement, which is a true dislocation; a forcible hernia, the rest of the abdominal belt being unaffected. Operation in such cases is the triumph of nephorrhaphy. The movable kidney with complications is a slow and progressive displacement, preceded, accompanied, or followed by Glenard's enteroptosis. In such cases the nephroptosis is only incidental; there is a weakening of the abdominal walls, which should be supported by a belt and invigorated by massage. Out of ten patients operated on, after an interval of more than four months, one only was attacked by congestive outbreaks. The nine others, all recently examined, have firm cicatrices without any tendency to hernia; the kidney is fixed, and forms part of the abdominal wall, but may be readily distinguished over the greater part of its extent. Pain has been relieved in every case with one exception, and in that case there is enteroptosis. Such results are encouraging. M. Tuffier believes that nephorrhaphy should maintain its position as a legitimate operation in renal surgery. It is a mild operation, as in 149 cases the mortality is only 3.4 per cent. It is efficacious, since, out of 73 typical operations, in eight per cent. the patients were either cured or much relieved. The success would be yet greater if a careful selection of cases were to be made.

FIXATION OF CATHETERS.

Pilz, of Vienna,[46] describes an ingenious and apparently efficient way of fastening catheters used for continued drainage of the bladder when passed per urethram. It consists of inserting the catheter in the usual manner so that the "eye" is just inside the internal sphincter; the catheter is then transfixed with a pin at its point of emergence from the meatus, which prevents it entering farther into the bladder. It is kept from slipping out of the urethra by a strip of adhesive plaster passed over the pin and the ends fastened to the dorsal and ventral surface of the penis. These latter are prevented from slipping by other strips circularly applied, which also, it is claimed, prevent erection. Lauenstein,[47] in cases of perineal section, fixes the catheter by a ligature passed through it through the perineal wound. The ends of this ligature are then tied over the iodoform gauze tampon which lies in the perineal wound, and thus fixes the catheter.

OPERATIVE TREATMENT OF EPISPADIAS.

Rosenburger (Winzburg) has devised a very ingenious and apparently satisfactory method of relieving this serious deformity. In the patient (a boy two and a half years old), on whom he first proved its efficiency the urethral defect extended from pubes to meatus. The first step was to make two longitudinal incisions, parallel with the urethra and at its lateral border, which extended from the glans to the pubes and were then continued up on to the abdomen an equal distance. A linear strip of skin was next dissected off along this entire distance, leaving a defect, or denuded surface, a one-half centimetre wide and equal in length to twice the length of the penis. The penis was then turned up on to the abdomen so that the dorsum was in contact with the abdominal surface and sutured in this position by uniting the penile denuded surfaces which were held in contact with the abdominal ones. It was allowed to heal in this position. It was then possible for the patient to control the urine and to micturate at will. The second stage of the operation was to free the penis. This was done by dissecting it from the abdominal wall and restoring it to its normal position. When this was done, a flap was cut from the abdominal wall extending from the meatus upwards towards the umbilicus. This remained attached to the penis when it was freed from the abdomen, and by being folded back was used to cover the denuded surface left on the dorsum of the organ after its release from the abdominal wall. The abdominal defect was closed by suture. Union was obtained and the patient is reported as being able to retain urine for an hour at a time and to micturate without difficulty. The effect of the development of hair in the urethra is not yet known, but Rosenburger does not anticipate any trouble from it.

LATERAL PROSTATIC HYPERTROPHY.

Dittie,[48] after a careful inquiry into the anatomical changes in senile hypertrophy, considers that the rôle played by the lateral lobes is important to the surgeon. His experiments on cadavers have led him to this conclusion. He found that removal of the lateral lobes allowed a prompt emptying of the bladder where a wedge-shaped prostatectomy was unsuccessful. (For details see original report.) From such data he proposes the operation of "lateral prostatectomy." After emptying and washing out the bladder with a rather heavy gum-elastic catheter, the latter is fastened *in situ.* The patient is placed on the back or on the right side, with the hips flexed. The rectum is tamponed. Incision from apex of coccyx along centre of external sphincter and to tendonous centre of perineum. Through this the ischio-rectal space is opened, and the tamponed rectum dissected from the right lateral lobe of the prostate. Then from the left lobe. All vessels ligated. Space disinfected and made aseptic. The lateral lobes are then resected by removing a wedge-shaped piece from each in the same manner as a tumor is enucleated. The operation is indicated in the first stage of prostatic hypertrophy, while the urine is still healthy, when pain and residual urine are not prominent, and also in the second stage.

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[44] Annals of Surgery, December, 1891. Gazzette degli Ospetali, 1890, Nos. 81, 82, 83.

[45] L'Union Médicale; Medical Record, August 29, 1891.

[46] Centbl. f. Chir., 1890, xvii, 16.

[47] Centbl. f. Chir., 1890, xvii, 9.

[48] Wien. Medical Woch., 1890, Nos. 18, 19.

PROSTATOTOMY AND PROSTATECTOMY: THEIR INDICATIONS.

Edmund Vignard has made an exhaustive and careful review of the present status of operative treatment for senile hypertrophy.[49] He contributes nothing to the work of Watson (Boston, U. S. A.) as regards method or operative technique. In his opinion the great majority of failures after operation are evident at once. In others a temporary improvement is obtained, but later there is a recurrence, which is without doubt due to a reformation of the prostatic barrier. In the first class the form of enlargement was often of the extreme degrees of "horse shoe" hypertrophy or large lateral lobes, but no well-marked point of obstruction or valvular middle lobe. Another cause of immediate failure was paralysis of the bladder. Hence the importance of a pre-operative diagnosis of the particular form present. Vignard considers non-contractility of the bladder a contra-indication. He concludes from examination of twenty-four specimens that only a small proportion of cases was suitable for operation. He thinks arterial atheroma and cystic paralysis usually coexist. He is inclined to favor the supra-pubic operation. Recommends a thermo-cautery or curved scissors for extirpation of the obstruction; with prostatotomy, only perineal incision and drainage à la Harrison. This relieves the cystitis and prevents reformation of the obstruction.

LITHOTRITY IN CHILDREN.

Alexandrow Moscow,[50] in discussing this subject claims that the choice between lithotrity or lithotomy depends on the size of the urethra and the size of the stone in the individual case. The limit for the lithotrite he places at No. 14 F. The calculus should not be larger than 2.0–2.5 centimetres in diameter. If these dimensions are not present, the cutting operation should be chosen; and a supra-pubic operation and immediate suture of the bladder wound is recommended.

THE TREATMENT OF HYDROCELE BY CARBOLIC ACID INJECTION.[51]

As early as 1872, Levis, of Philadelphia, used this method for hydroceles. The method of Levis is practically painless; confinement in bed is not essential; and, unless over thirty minutes are used, sloughing should never occur. This method has been used at the Hospital for Ruptured and Crippled in 54 cases. A small trocar is used to evacuate the hydrocele, and then a hypodermic syringe is screwed on to the canula, permitting the introduction of the acid without its coming in contact with the skin. Then five to twenty-five minims of liquified crystals of carbolic acid are distributed over the whole serous surface, two or three minims in each place, nothing more than a sense of warmth is felt. After removal of the canula slight kneading of the sac may be done to insure thorough coating of its walls with the irritant.

Of the 54 cases nine were never seen after the injection, five paid one visit, four are at present under observation. This makes 36 cases, all of whom were cured; 27 had one injection, four had two injections, five had three injections. In no case has sloughing occurred, and not one of the 36 patients lost more than twenty-four hours from business. From two to six weeks is necessary for absorption of the exudation, and thickening of the sac may remain much longer.

Conclusions: (1) Carbolic injection is a safe method for the cure of hydrocele. (2) It is practically painless. (3) The patient is allowed to attend to business without more than one day's delay. (4) The disagreeable effects of an anæsthetic are avoided.

A NEW METHOD OF SKIN GRAFTING.

This is thus described by its originator, Ereberto Aievoli.[52] An animal with well-developed testes is castrated. The organs are washed in the usual salt solution and then cut in thin sections, which are placed in a salt solution. The granulation surface, after being cleaned, is covered with small pieces of the testicle, these being placed one or two centimetres apart. Antiseptic dressing. Good results are claimed which Aievoli thinks are due to the marked biological activity of the cells implanted. In experimentation he used sections of the salivary and mammary glands and the testes.

INJURIES COMPLICATED BY RUPTURE OF LARGE ARTERIES.

Melitor (Heidelberg)[53] has been led, by meeting a case of dislocation of the elbow with rupture of the brachial artery which required amputation, to investigate these injuries. He found records of eleven cases. In most of these the brachial was ruptured; in two, the ulnar artery. Only one was subcutaneous; all the others were compound. In this subcutaneous case amputation was performed on the sixth day. His case was a subcutaneous rupture, and he amputated on the sixth day. In eight of the ten compound cases the arm was preserved more or less disabled. The small collaterals were usually injured as well as the main vessel. Microscopic examination of the muscles in his case showed œdema and absence of muscle nuclei. He concludes that, where larger arterial trunks are injured subcutaneously, especially where there is considerable extravasation of blood, immediate free incision with extreme asepsis, thorough removal of coagula, and double ligation is preferable to the expectant plan.

THE OPERATIVE SURGICAL TREATMENT FOR ANEURISM OF THE FIRST TWO PORTIONS OF THE SUBCLAVIAN.

As the result of personal experience, and a review of the literature of the subject, Joseph D. Bryant,

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[49] Centbl. f. Chir., 1890, No. 32.

[50] Deutschr Zeitschr. f. Chir., 1891, xxxii, 525.

[51] S. E. Milliken: Annals of Surgery, October, 1891, p. 292.

[52] Rif. Med., 1890, vi, 276, 277. See *résumé*, Schmidt, Jahrb. f. gesammt. Med., 1891, bd. 230, p. 62.

[53] Bruns Beitrag. Z. Klin. Chir., bd. v, hft ii.

M.D., New York,[54] has arrived at the following conclusions:

(1) The lease of life gained by the so-called medical treatment of subclavian aneurism emphatically teaches that its employment should precede all other methods.

(2) The lease of life following distal ligature of the subclavian and carotid arteries, for the cure of aneurism of the first two portions of the subclavian, cannot as yet be estimated, because of the paucity of these cases that have an undoubted diagnosis.

(3) The lease of life following ligature of the innominate alone, for subclavian aneurism, does not justify the operation; but ligature of the innominate, when supplemented with simultaneous and consecutive ligature of the associated contiguous arteries, or by other expedients equally well intended to aid the cure, is worthy of favorable consideration.

(4) The lease of life gained by the pin-irritation method of Macewen, and galvano-puncture with its associated treatment, warrants a strong belief in the special benefits of these expedients when employed singly or with ligaturing.

(To be continued.)

Reports of Societies.

MAINE MEDICAL ASSOCIATION.

FORTIETH ANNUAL MEETING.

The sessions were held, as for some years past, in the Common Council Chamber, City Building, Portland, and were marked by an unusually large attendance.

The Association met on Wednesday, June 8, at 10 A. M., and was called to order by the President, **Dr. E. M. Fuller**, of Bath. Prayer was offered by the **Rev. Mr. Whitman**, of the Free Street Baptist Church.

Dr. H. M. Harlow, of Augusta, an ex-President of the Association, and for many years superintendent of the Maine Insane Hospital, was elected an honorary member.

The Treasurer's report was presented and read, showing a gratifying increase in the cash funds over last year.

Drs. Alfred King and A. K. P. Meserve of Portland, and Wm. E. Baxter of Bangor, were appointed to fill temporary vacancies on the Board of Censors.

Dr. George B. Swasey, of Portland, read a paper on

CONGENITAL SYPHILIS.

With reference to the influence of syphilis upon the development of the impregnated ovum emphasis was given to the view, that a fœtus tainted from the father alone, could not infect the mother; and provided the mother were untainted at the time of conception, syphilis contracted by her during pregnancy could not be communicated to the child. The average period during which parents are likely to transmit syphilis to the offspring after infection was stated as ten years. If not presenting the symptoms at birth, the child rarely passes the fourth month without so doing.

Dr. George H. Cummings read a paper based upon

A CASE OF POPLITEAL ANEURISM,

cured by ligation of the femoral in Hunter's canal, after ineffectual treatment by compression.

The paper insisted upon the necessity of careful preparatory treatment by dietetic and hygienic measures before any operation by ligation.

On recommendation of the Board of Censors, the following active members were elected: Drs. C. P Small, Waterville; H. A. Smith, Livermore; Chas. Burleigh, Saco; Geo. F. Libby, Togus; C. H. Ridlon, Gorham; J. W. Bowers, Portland; F. A. C. Emerson, Garland.

Reports were received from the visitors appointed to the Maine Insane Hospital, Medical School of Maine, and Portland School for Medical Instruction.

The report of the Hospital Committee reiterates the complaint that has been made for several years past, of the overcrowded condition of the institution, necessitating the use of cots in corridors and the employment of a large additional number of night attendants, and interfering seriously with the efficiency of the hospital. The responsibility rests directly upon the legislatures of the past ten years.

Dr. H. F. Twitchell, of Freeport, read a paper upon

A CASE OF CHRONIC HYDROTHORAX,

treated by repeated aspiration and injection of tincture of iodine. Fifty-seven aspirations were made within thirty weeks, yielding 661 ounces of fluid, at no time becoming purulent. Two ounces of tincture of iodine were injected during a period of seventeen weeks. The writer urged antiseptic pleurotomy with tube for permanent drainage for similar cases.

AFTERNOON SESSION.

Dr. Geo. F. Keene, Howard, R. I., and Dr. Wm. R. White, Secretary of the Rhode Island Medical Society, were introduced, and invited to participate in the discussions.

The President, Dr. E. M. **Fuller**, of Bath, then delivered the Annual Address, his theme being

THE VANTAGE GROUND IN MEDICINE AND SURGERY DURING A QUARTER OF A CENTURY.

The recommendation that efforts to obtain a medical registration law be persisted in is not likely to result in marked activity on the part of the Association, so long as the recollection of its experience of four years ago remains.

Dr. Henry B. Palmer, of Phillips, read a report of

A CASE OF LARYNGISMUS STRIDULUS,

relieved by antipyrin in doses of one decigramme every four hours.

Dr. B. B. Foster, of Portland, read a paper upon

URETHRAL STRICTURE, WITH SOME SUGGESTIONS AS REGARDS TREATMENT.

The main points made prominent were a preference for dilating urethrotomy over gradual divulsion and other methods of overcoming stricture, and the treatment of urethral ulcerations and granular conditions of the deep urethra by applications of nitrate of silver in solution after dilatation, in strength of from one to twenty grains to the ounce. Careful constitutional treatment was regarded as a prerequisite to local treatment of any nature.

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[54] Medical Record, March 14, 1891, p. 305.

Dr. W. L. Dana, of Portland, thought no one method could be rigidly or even generally adhered to. He favored a selection of methods of dilatation or urethrotomy, according to nature and location of the stricture.

Dr. Alfred King, of Portland, thought we were not justified in accepting the prevalent belief that stricture is a lesion which follows some time after the initial inflammation. He did not doubt that oftener it began and continued with the inflammatory process. He favored, in a majority of cases, gentle gradual dilatation. If a stricture was very small, it was a good plan to introduce a soft bougie leaving it for a number of hours. The passage of the urine past this would facilitate dilatation. In impermeable stricture he thought it best to aspirate the bladder, and reduce inflammation before operating. Operations ought to be rare.

Dr. Geo. B. Swasey, of Portland, said he did not share Dr. Foster's dread of rapid divulsion by sounds. His preference was for the divulsor which slips down over the filiform bougie as a guide.

Dr. L. W. Pendleton, of Portland, thought no operative procedure would be successful unless the canal was kept dilated afterward. He cited a case of a boy who had stricture due to perineal injury, — in which rupture of the urethra had not been recognized. He believed this could have been prevented, had a proper catheter been retained after injury.

Dr. E. S. Coan, of Auburn, read a paper on

TETANUS,

discussing its pathology, etiology and treatment. He thought that free use of antispasmodics, and above all the present methods of antiseptic technique had effectually demonstrated the falsity of the teaching of twenty years ago, that "traumatic tetanus is not amenable to treatment."

EVENING SESSION.

Dr. Wm. J. Maybury, Springvale, read a paper on

THE TREATMENT OF DIPHTHERIA.

Alcoholic stimulation and tincture terri chloridi internally, with frequent spraying and gargling with a solution of bichloride of mercury (one grain to four ounces of water) were urged as the prime factors in treatment.

Dr. H. H. Hunt, of Portland, said he invariably used the compressed-air spray, on account of its greater force. He carried the air chamber and tubes to the house of his patient and would not think of temporizing with the hand atomizer.

Dr. W. R. Whit , of Providence, called attention to the use of the peroxide of hydrogen in ten per cent. solution as a gargle.

Dr. S. H. Weeks, in speaking of operative treatment, said intubation was preferable to tracheotomy when it could be done, as it avoided shock.

Dr. E. M. Fuller, the President, called attention to the use of the double-bulb, hard-rubber atomizer. He found it advisable to keep the atmosphere moist with a five per cent. mixture of eucalyptol in benzoinol.

On recommendation of the Board of Censors, Drs. C. P. Hubbard of Lovell, John A. McDonald of Machias, and J. T. Sanborn of Waldoboro, were elected to active membership.

Dr. Stanley P. Warren, of Portland, read a paper on

AXIS-TRACTION FORCEPS,

illustrated by lantern slides. The writer claimed special excellence for Lusk's modification of Tarnier's instrument, and he summed up his conclusions as follows:

Special skill and special instruments for obstetrical emergencies. The line of draught of forceps applied at the brim should be from before, backward. The line of draught of the common long forceps, being forward of the centre of the birth canal, this forceps, having its working opposed by the symphysis-pubis, is not suitable at the inlet. The axis-traction principle of delivery is the only one which acts in a natural direction at the brim.

Dr. Chas. D. Smith, of Portland, preferred, when possible, the axis-traction rods of Reynolds, as accomplishing the same end, and accompanied by fewer dangers to the maternal tissues than the somewhat massive blades of the Tarnier instrument. He had found them most serviceable when applied to a long forceps with marked pelvic curve. He thought them best adopted to general use. The whole secret of axis-traction was plainly in being able to apply the backward traction directly to the head, thereby rendering it more efficient, whatever the instrument used.

Drs. H. H. Hunt and John F. Thompson spoke in commendation of the principle and the efficiency of the instrument.

SECOND DAY, JUNE 9TH.

The Association met at 10.20 o'clock.

Dr. O. A. Harriman, of Laconia, N. H., was introduced as a delegate from the New Hampshire Medical Society.

Dr. N. M. Marshall, of Portland, read a paper on

APPENDICITIS.

Accurate diagnosis is promoted by proper appreciation of the anatomical relations of the appendix. Acute persistent pain with fever and retching, with absence of tympanitis, marked by increased pressure over McBurney's point, with the single finger tip, are diagnostic signs of trouble with the appendix. In the early stages tumor is rarely to be detected. Surgical aid should be invoked if no improvement is apparent within forty-eight hours, and at least exploratory incision made.

The paper discussed the affection from the standpoint of the general practitioner, and presented statistics of ten cases, with seven deaths, two recoveries, and one case still in doubt as to recovery. Two cases treated surgically, both fatal. Males seven, females three, post-mortems seven. General peritonitis, the result of rupture of abscess with gangrene of appendix, five.

Dr. Alfred King, from experience in his own person, regarded catarrhal conditions of the bowels as a frequent cause. Favored palliative treatment by mild salines or oil, and compression. Perforation demands operation.

Dr. A. D. Thayer, of Portland, cited several cases treated medically with best results.

Dr. A. K. P. Meserve took the view that in a majority of cases, medical treatment was efficient. He called attention to the fact that many of these cases date from the eating of some indigestible food, which emphasizes the view of a catarrhal origin.

Dr. Chas. D. Smith, of Portland, read a paper on

ALBUMINURIA IN PREGNANCY.

The conclusions were:

(1) In a large proportion of cases the cause is hyperalbuminosis of the blood, and the condition has no marked pathological significance.

(2) Albuminuria from disturbed blood-pressure is common in primiparæ: in the great majority of cases to be relieved without eclampsia.

(3) Labor, is oftenest the exciting cause of eclampsia, by reflexly exciting the vaso-constrictors of the kidneys; the result being an anæmic kidney rather than a congested one.

(4) That albuminuria, unless from some form of Bright's disease, has in itself but little significance unless associated with diminution of urea and cerebral symptoms.

Drs. H. K. Thatcher of Dexter, J. F. Manning of Ellsworth, J. B. Wescott of Bath, J. D. Phillips of South West Harbor, C. E. Lancaster of Bowdoinham, Geo. P. Morgan and R. G. Blanchard of Dover, N. H., were elected to membership.

Dr. S. P. Warren presented a Sims's speculum, with tip for supporting the buttocks. The whole instrument being made of aluminum.

AFTERNOON SESSION.

Dr. D. E. Sullivan, of Concord, was introduced as a delegate from the New Hampshire Medical Society.

Dr. F. C. Thayer, of Waterville, read a paper based upon

SIX CASES OF COMPOUND FRACTURE OF THE SKULL,

all of them extensive, and all followed by recovery except one in which there had been considerable loss of brain substance.

Dr. Geo. W. Way, of Portland, presented a child six months old, showing the results of treatment of an extensive congenital umbilical hernia, by strapping.

The Association then elected the following officers for the ensuing year: President, Dr. Alfred Mitchell, of Brunswick; First Vice-President, Dr. J. L. Horr, Westbrook; Second Vice-President, Benjamin Williams, Rockland; Treasurer, Dr. A. S. Thayer, Portland; Secretary, Dr. Charles D. Smith, Portland; Corresponding Secretary, Dr. William Cammett, Portland.

Dr. F. H. Gerrish, of Portland, read a paper upon

THE REMEDIAL USES OF HYPNOTISM.

The author prefaced his paper by defining hypnotism, as "an induced condition in which the mind is peculiarly susceptible to suggestion. The patient's faith in the method is not a necessary factor in the result. Hypnotism is not a panacea. It is chiefly useful in functional nervous disease."

After citing typical cases in his own practice and that of other physicians, the conclusions were summed up to be that the objections to its use on the ground that it placed a power for evil in the hands of the unscrupulous could be met by the fact that such power could only be exercised upon subjects in the somnambulic stage; which is never reached in its use as a remedial agent.

As to its weakening the minds of subjects, "it should be remembered" that hypnotism for exhibition purposes and hypnotism for therapeutic purposes are very different things. Public displays of hypnotism for show purposes should be condemned; the use of hypnotic suggestion by physicians for therapeutic purposes is commendable and worthy of every encouragement.

Like many other valuable means which we constantly employ, hypnotism is not dangerous if we bear in mind that is dangerous.

The use of hypnotism should be by law restricted to members of the medical profession and other scientific students, reducing the danger of improper use to a minimum. Besides the patient may be protected by suggestion against hypnotism by anybody against his wish.

The intentional employment of psychic means in therapeutics is often superior to the use of grosser agencies. If the patient may be helped through the will, why not through the imagination.

An interesting feature of the discussion was a description by Dr. Thomas Fillebrown of the successful employment of hypnotic suggestion in dental practice.

Dr. I. T. Dana, of Portland, said he had been convinced that here was a power of great value, in proper hands, and he had no sympathy with any sentiment of prejudiced opposition.

The paper elicited great interest, and obliged the essayist to contribute further to the subject by replying to a great variety of inquiries as to the therapeutics of hypnotism.

Papers upon "Treatment of Pneumonia," by Dr. C. M. Cobb, of Mechanic Falls; and "Hysterectomy without Pedicle," by Dr. S. C. Gordon, of Portland, were presented by title, as was also the Report of the Necrologist, by Dr. Alfred King, of Portland. They were referred to the Committee on Publication, without reading.

The number of members deceased during the year included but two, Drs. F. N. Wheeler, of Camden, and J. E. L. Kimball, of Saco.

Dr. J. A. Richards, of Farmington, read a paper entitled

A DEFENCE OF THE KEELEY CURE FOR DRUNKENNESS.

No attempt was made at scientific argument, nor any evidence submitted, except the recital of a number of cases whose cures had existed for periods varying from a few weeks to ten months, and the statements of statistics issued by Dr. Keeley. It served only to suggest how deeply the inhabitants of a small community may become interested in and committed to any new industry which promises material advantage.

Dr. F. H. Gerrish, of Portland, reported

A CASE OF SUPRA-PUBIC CYSTOSTOMY,

and exhibited an appliance for permanent drainage of urine, not unlike a tracheotomy tube.

EVENING SESSION.

This was devoted entirely to an oration by Dr. A. H. Burbank, of Yarmouth, upon

OUR MUTUAL RELATIONS AS MEDICAL MEN.

One of the main points insisted upon, was that medical men ought to be obliged, at stated periods in their professional life to show evidence of their fitness to continue as recognized members of the medical profession. His comments upon the various topics suggested by his subject were pungent and witty and highly entertaining. With reference to consultations he remarked that, he had attended consultations when nothing could have been more appropriate or more needed than the reading of the thirteenth chapter of First Corinthians. Physicians need to have passed a long stride beyond the period of regeneration towards a more perfect sanctification in order to be able to forget self and selfish interests in the consulting-room.

Following the oration, the members of the Association, their ladies and visiting delegates were tendered a reception and banquet by the resident members.

THURSDAY, JUNE 10TH, CLOSING SESSION.

This was devoted to the transaction of routine business, and the report of the Board of Censors making assignments for the coming year.

Drs. R. E. Donnell, of South Gardiner, and G. A. Pudor, of Portland were elected to membership.

Dr. S. J. Bassford. of Biddeford, was appointed Orator for 1893.

After fixing the place and date of the next annual meeting, as at Portland on the second Wednesday, Thursday and Friday of June, 1893, the Association adjourned.

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Recent Literature.

Diseases of the Nervous System. By J. A. Ormerod, M.D. (Oxon.), F.R.C.P.L., etc. With numerous (66) illustrations. 12mo, pp. xiv, 343. Philadelphia: P. Blakiston, Son & Co., 1892.

This little volume is offered as an introduction to the student's work and an outline map of territory to be acquired. As such the plan differs somewhat from the ordinary small text-books. The first sixty pages are devoted to a consideration of the anatomy and physiology of the nervous system. This chapter is extremely well done. The fundamental facts of the complicated subject of nervous anatomy are presented briefly and clearly, and a few simple diagrams must prove of much help to the beginner. The summing up of the elementary facts of nervous physiology is also well done, but here one serious omission must be noted. The author commits himself distinctly to Ferrier's view that the gyrus fornicatus is the centre for cutaneous sensibility, and he takes no notice of the different view held by many German, Italian and American observers. The second chapter dwells briefly on the general pathology of the nervous system, and the third and fourth chapters are devoted to the methods of examination. Here, again, we must praise the judicious selection of essential points, and the clear instructions given. The rest of the book is devoted to the various diseases of the nervous system. This impresses us as not quite so satisfactory. The author, however, has a just sense of proportion; the rarest diseases are omitted, the less frequent diseases are touched on briefly; but the whole is almost too condensed, and the student here can obtain more help from such treatises on general medicine as those of Osler and Strümpell. It is, however, a good book for the beginner. It contains much that he cannot readily find elsewhere, and it is clear, concise, and in the main accurate. It must be remembered, however, that it is but an outline map, an index to more elaborate works, and it is neither intended nor fit to be the sole work to employ.

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283 Washington Street, Boston, Mass.

CHOLERA.

The English medical journals of July 9th, are at hand with further details of the epidemic of so-called cholerine in the suburbs of Paris; the information emanating from French sources is meagre and not very satisfactory. From April 5th up to July 25th, 159 deaths from a rapidly fatal diarrhœal affection had been reported in the neighborhood of Paris, and the character of the disease, although attributed to the use of Seine water and manifesting itself in those quarters where that water is supplied for consumption, is evidently regarded with some suspicion across the channel. The *Lancet's* special correspondent states that a municipal commission was appointed to investigate and report upon the epidemic. An investigation was made, which included a careful examination of the dejections of patients, and a report, drawn up by Dr. Proust, was rendered, but it had not been published. In other words, it had been suppressed by order of the Prefect of the Seine, after having been submitted to and adopted by the Consultative Council of Hygiene at a meeting held at the Ministry of the Interior. This, in itself, is calculated to increase alarm and uneasiness, especially as it is understood that a bacillus resembling that of true cholera was found.

The position of the Paris water-supply is described as follows: "In ordinary times 135,000 cubic metres of water are consumed in the day; but when the temperature rises to about 70° F. there is an increased consumption of water equal to about 30,000 to 40,000 cubic metres more. The water-works are then obliged to make up the difference by giving Seine water. Nor is it practical to purify efficaciously so great a volume of water. No sterilizing apparatus could deal with such a quantity. Moreover, it is not possible to ration the supply, for while the supply was stopped the pipes would get filled with air, and this is attended with many inconveniences and dangers; and, on the other hand, there would be no water to flush the closets.

The best hope of the Parisians rests on the fact that 87 kilometres out of the 102 kilometres of the aqueduct, which will bring the water of the Vigne to Paris, are now constructed. Perhaps this additional supply of pure water will be available next summer; in the meanwhile, the inhabitants are asked to carefully boil their water and to wait patiently. As a temporary measure it has been decided to apply the Pasteur filter to the Wallace drinking fountains, so that prudent persons may go to these fountains and fetch their supply of drinking-water. But the number of prudent and thoughtful persons is very limited, so the epidemic continues. Also the waters of the Vigne will only reinforce the Paris supply; the suburbs, where the epidemic most generally prevails, will continue to drink the Seine water."

Concurrently with this increased distribution of Seine water during the recent hot weather which prevailed in Paris, and with the development of this epidemic of "cholerine," typhoid fever has been rapidly increasing, so that on June 30th 235 cases were said to be under treatment in the Paris hospitals.

Notwithstanding these additional details, we see no reason to change the position which we took in our last issue so far as Paris is concerned. We do not think that true Asiatic cholera has established itself there as yet.

On the other hand, there can be no doubt that it is spreading with some rapidity in southeastern and central Russia, and that contiguous countries of western Europe are impressed with the possible gravity of the situation. Should reports that cholera has appeared at Odessa and other ports on the Black Sea be substantiated, it will indicate a not distant farther western march of the epidemic.

Certainly, the situation is such as not only to justify but to demand the utmost vigilance on the part of the quarantine and health officers of our seaport cities. It is not reassuring to learn that cases of typhus fever have again been allowed to land in the city of New York. The large immigration of Russian and Polish Jews is a constant source of danger at that port.

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THE TREATMENT OF ASTHMA BY IODIDE OF POTASSIUM.

Trousseau was one of the first to prescribe iodide of potassium in both essential and bronchial asthma; but he, as well as Sidney Ringer later, seem to have erred in prescribing too small doses. At least, so say German Sée and Huchard, who affirm that a dose of one or two grains three times a day does little good. Sée claims priority in teaching how to use this remedy and in what doses. The forms of asthma especially amenable to the iodide treatment, according to Sée, are those which he designates as true asthma, and which he classifies under the three heads: (1) Nervous (essential) asthma; (2) alveolar or emphysematous asthma; (3) bronchial or catarrhal asthma.

It is agreed that all these forms run into each other, that the second and third are often consequences of the first, and that all asthma, strictly speaking, is made up of factors which are nervous, mechanical, and secretory.

The dose which Professor Sée advises is from five to ten grains. This dose, which is as much as Trousseau would give daily, is to be taken after each meal. Jaccoud, who is also a strong advocate of the iodide treatment, would give even larger doses amounting to from fifteen to forty-five grains a day.

Iodide of potassium, when given in asthmatic complaints, exercises, according to Professor Sée, a threefold therapeutic function: (1) It promotes the bronchial secretion and thus clears the stuffed tubes; (2) it facilitates the central reflex act of respiration in regulating the functions of the pneumo-gastric centre; (3) it diminishes the exaggerated sensibility of the respiratory mucous membrane. In its action as a promoter of secretion, the iodide is said especially to benefit by softening the concrete exudation which encumbers the bronchioles.

It is well known that this salt in excessive doses produces intense catarrhal secretion of the upper respiratory passages, and a minor degree of this property may be advantageously utilized therapeutically. Within a short time after the administration of the iodide is commenced, the dry râles give place to moist and mucous, the respiratory murmur returns, and the breathing becomes free. But this relief of dyspnœa, Professor Sée thinks, is not altogether due to the increased permeability of the bronchial tubes to the inspired air. The iodine salts have an antidyspnœic effect in cardiac oppressions when no bronchial secretion attends their administration; the same good result is noticed in asthmatic suffocation before the medical attendant distinctly perceives any cessation of the viscous ronchi.

How may we explain this increased freedom of respiration? Professor Sée believes that it is owing to a lessened impressibility of the mucous membrane, and this is due to a diminution of the sensibility of the terminal fibres of the vagus. Iodide of potassium may also have a direct action on the medulla oblongata in depressing its reflex excitability. Considerations are presented which suggest that this may be the case, and that a part of the beneficial effects of the iodides in asthmatic affections is due to such direct effect of these salts on the bulb.

In summing up the results of his practice, Professor Sée declares that he has during the past seven years treated six hundred asthmatic patients aged from two to fifty-five years, with tolerably large doses of iodide of potassium. Fifty of these cases were unable to follow up the treatment long enough to get the full therapeutic benefit, the medicine not being tolerated or iodism resulting. Of the three hundred and twenty remaining patients, all obtained marked amelioration, and those who have continued the treatment from one to three years have now exemption from their nocturnal attacks of asthma and the resulting bronchitis.

"Perseverance in the treatment," he adds, "is almost always necessary, but discontinuance of the medicine after a year or two did not provoke a return of the paroxysms in sixty of the cases, who, at the time of this writing, and after a year of complete interruption of the treatment, may be regarded as cured."

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THE TERCENTENARY OF DUBLIN UNIVERSITY.

The three hundredth anniversary of the founding of Trinity College in Dublin was celebrated from the 5th to the 8th of this month. This college, the nucleus of Dublin University, was founded in 1592 by Queen Elizabeth, outside of the walls of Dublin; it now stands in the heart of the city. The first stone was laid in 1591; early in 1593 the institution was opened for the reception of students and the first conferring of degrees took place in 1600. The mayor and citizens granted the site of the Abbey of Allhallows and twenty-eight acres of derelict land, which latter now brings in an annual income of several thousand pounds. Queen Elizabeth gave some Crown rents and a yearly grant of £400 from the Concordatum Fund, which latter ceased in the present century, and the former is worth about £5 yearly. Lord Burleigh was appointed first Chancellor and Archbishop Adam Loftus the first Provost.

The university derives its revenues partly from the fees of the students, and partly from certain lands in different parts of Ireland, which have at different times passed into its hands. The rent from the latter have not lately been always easy to collect, but it is believed that even now two hundred and fifty thousand dollars a year is received from them. The university is entitled to two seats in parliament, and has the right of conferring university degrees, among them that of M.D.

The university consists of several faculties. Until recently the medical school was at a low ebb, but it now holds a strong position, and has acquired an enviable reputation and popularity. It has numbered among its writers such names as Graves, Stokes, Robert Harrison, William Henry Porter, Robert Adams and Carmichael.

The tercentenary celebration was elaborate and imposing. Several honorary degrees were given by the different faculties. In the list of those receiving medical degrees the United States was represented by Dr J. S. Billings. The honorary degree of M.D. was also given to Sir Andrew Clark, Thomas Bryant, Jonathan Hutchinson, of London, Duke Charles Theodore, of Bavaria, Grainger Stewart of Edinburgh, and Professor Gusserow of Berlin. Ireland appears to have been left out of the list. Among many receiving the degree of Doctor of Science were the Professors Burdon Sanderson and Michael Foster. In honor of the event the Royal College of Surgeons of Ireland gave their honorary fellowship, F.R.C.S.I. to Drs. Bryant, Billings, Gusserow and Snellen.

THE NEXT ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The American Public Health Association has issued a preliminary announcement of its next annual meeting, which will be the twentieth, and will be held in the City of Mexico, November 29th, 30th, and December 1st and 2d.

Members and representatives from all parts of the United States, from Canada and from every Mexican State are expected to be present. There will also be representatives of the Central and South American republics. The Mexican government has interested itself in the meeting, and the details of the arrangements are in the hands of the federal officials.

The Local Committee announce that the city government will entertain the Association one evening; a local society, another evening; one day following the meeting an excursion will be made to observe the great work, now nearly completed, for the drainage of the valley of Mexico; and another day will be devoted to an excursion for sight-seeing in and about the City of Mexico.

President Diaz will give a reception to the Association at the famous castle of Chapultepec.

A committee of American ladies, resident in the City of Mexico, has been organized for the purpose of entertaining all the ladies who may attend from the United States and Canada.

Dr. Eduardo Liceaga, of the City of Mexico, is chairman of the local committee of arrangements.

This should be a very instructive, interesting and enjoyable occasion.

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MEDICAL NOTES.

Small-Pox. — On account of the prevalence of small-pox in various places upon the Ohio River and Great Lakes the surgeon-general of the Marine-Hospital Service has given orders to the surgeons of the service in these districts to visit vessels and vaccinate the crews, and in other ways to promote vaccination.

Cholera Riots in Russia. — The ignorant population of Astrakhan, believing that the sanitary measures taken to prevent the spread of cholera were unnecessary, that the sick were put in the hospitals without cause, and that many were buried alive, set fire to the hospitals, after removing the sick, and then attacked the governor's house, when they were checked by a military detachment.

Carlill *vs.* The Carbolic Smoke Ball Company. — This interesting trial, which has recently been had in England, appears to establish the liability in that country of a patent medicine company which offers a prize for failure to cure. The defendant company advertised a guarantee of a hundred pounds to any one who should be attacked by influenza while using the "carbolic smoke ball." The plaintiff used it according to directions, but suffered, nevertheless, from the epidemic, and in consequence brought suit to recover the guarantee. In spite of the defence, which consisted of technical objections, the suit was won, and the company was obliged to make good its promises.

Marriages, Births and Deaths in England and Wales. — The general abstract of marriages, births and deaths, issued from the Registrar General's office of England, preliminary to the regular report of that office gives the following figures for the year 1891: Estimated population at middle of the year 1891, for England and Wales, 29,081,047; persons married, 452,050; marriages, 226,025; births, 913,836; deaths, 587,666. The ratios, per 1,000 of the population, deduced from these figures are as follows: Marriage-rate, 15.5; birth-rate, 31.4; death-rate, 20.2. The marriage-rate was slightly higher; the birth-rate was less; and the death-rate was greater than the average of the previous ten years.

Condemnation of Secret Cures for Inebriety. — The last quarterly meeting of the English Society for the Study of Inebriety discussed the Keeley bichloride of gold cure, and before adjournment passed unanimously the following motions:

(1) "That this meeting of the Society for the Study of Inebriety (of which the members are registered British medical practitioners) is of opinion that any so-called 'cures' for inebriety, the composition of which is not disclosed, are unfit to be commended by honorable members of the medical profession, who are bound to place the full details of their treatment before their professional colleagues, a requirement as essential in the interest of the public as it is consonant with the disinterested practice of scientific therapeutics.

(2) "That this meeting, having been informed by a competent London analyst, who has made a special analysis, that the alleged 'bichloride of gold cure' shows no trace of gold or of chlorides and contains 27.55 per cent. of alcohol, condemns unreservedly the prescription of such an intoxicating preparation to an inebriate."

BOSTON.

The Death-Rate in Boston rose last week to 24.8. There were 224 deaths reported as against 207 for the corresponding week last year. The rise was due to cholera infantum coincident with the hot weather. Forty-three deaths were reported as due to this cause. The total number of children who died under one year of age was eighty, and under five years 104.

NEW YORK.

Mortality in New York City. — During the last fortnight the number of deaths in the city has been unusually large. In the week ending July 9th, the mortality reached 1,032, representing an annual death-rate of 29.44 per thousand of the estimated population. The average number of deaths for the corresponding week during the past five years, however, has been 1,119, representing an annual death-rate of 31.03. During the week ending July 16th, the mortality increased to 1,336, which, with two exceptions, is the highest since 1872. The exceptions were the week ending January 11, 1890, when the mortality reached 1,424, and the week ending April 18, 1891, when it was 1,347; and both these instances of great mortality were due to the grippe epidemic. The week's mortality was 153 higher than the average for the corresponding week during the past five years, and represents an annual death-rate of 38.09. The principal cause of the large increase in deaths was naturally diarrhœal diseases among children under five years of age; and the deaths from this cause amounted to 438. The total number of deaths among children under five was 863, and the number of deaths among individuals of all ages in tenement houses reached 990. The largest number of deaths reported in any one day was during the twenty-four hours ending July 12th. This mortality was 260, and it is the highest record since 1872.

Typhus Fever in New York. — The quarantine officer at New York reported that, on July 14th, a case of typhus fever was found on the Guion steamer *Nevada*. The patient was a Russian from the province of Wilna. The vessel had on board 91 immigrants from Russia, who were detained on board, and about 200 steerage passengers from other places were allowed to land. The next day two more cases were discovered among the detained Russians, all of whom were then sent to the quarantine island for further observation. The clothing and steerage in the vessel were fumigated by steam, and the three patients removed to the Reception Hospital. During the voyage the Russians had been isolated from the other immigrants, and it is not apprehended that there will be any spread of the disease in the city, as was the case with the *Massilia* typhus outbreak. The steamer *Taormina*, also, of the Fabre line, which arrived on Sunday, had one case of typhus and one of small-pox on board. All of the passengers are detained at quarantine. A death from typhus is reported at Yonkers.

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Miscellany.

EXAMINATION OF URINE BY THE CENTRIFUGAL MACHINE.

Albun[1] says the centrifugal machine, when once introduced, quickly comes into general use in the examination of pathological fluids. The author has thus examined some hundred hospital urines, one-half of which were from cases of Bright's disease. The deposit was compared with that obtained after standing. Like gravitation, centrifugal force would seem to have its limits. Sometimes no deposit is obtained, and at other times perfectly clear urine gives one. The greater part of this deposit falls in a few minutes, and the microscope shows it to be richer than that obtained by standing, but the difference is in quantity rather than quality. There is no advantage in adding alcohol or barium carbonate except in cases of examination for bacilli. In apparently healthy urine a greater or less number of leucocytes, or flat epithelial cells were found. In non-albuminous urine, hyaline and granular casts were repeatedly seen, and in two-thirds of the cases of acute pneumonia more or less numerous casts, covered with leucocytes or renal epithelium, were observed. Blood cells were at times found by the microscope in cases where the deposit did not look as if it contained any. Other pigment, such as that of jaundice, was found intimately united with formed elements. Bacteria could be separated out by the centrifugal method, but only partially. Twice tubercle bacilli were demonstrated, but they were also found in the deposit obtained after standing. The estimation of (coagulated) albumen by this method was not more accurate than by Esbach's albuminimeter. The centrifugal method is, however, a valuable addition to the clinical examination of the urine, in that it provides an unaltered sediment in the shortest time, but it is no material help to diagnosis.

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[1] Berl. klin. Woch., May 30th; British Medical Journal.

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THE BABY-FARM LAW.

THE following are abstracts from a law relating to the boarding of infants, and adoption, passed by the Legislature of Massachusetts at its last session:

> No person shall maintain a boarding-house for infants unless licensed by the State Board of Lunacy and Charity. Whoever violates the provisions of this section shall be punished by fine not exceeding one hundred dollars or by imprisonment not exceeding one year, or by both such fine and imprisonment.
>
> Whoever shall, for hire, have in his custody at one time more than one infant under the age of two years, unattended by a parent or guardian, exclusive of infants related by blood or marriage to the person having such custody, for the purpose of providing care, food and lodging for such infants, shall be deemed to maintain a boarding-house for infants within the meaning of this act. If the defendant relies upon the relationship to himself in defence, the burden shall be upon the defendant to prove the relationship.
>
> The State Board of Lunacy and Charity may grant licenses to maintain boarding-houses for infants, and may revoke such licenses in its discretion. Every application for such license shall first be approved by the board of health of the place, except the city of Boston, in which such boarding-house is to be maintained. The State Board of Lunacy and Charity and boards of health of cities and towns, except the city of Boston, shall annually, and may at all times, visit and inspect premises so licensed, and may at any time designate any person to visit and inspect such premises. Such licenses shall be granted for a term not exceeding one year. Every licensee shall keep a record, in such form as may be prescribed by the State Board, of every infant received.
>
> Any person receiving under his care or control, or placing under the care or control of another, for compensation, an infant under two years of age not related by blood or marriage to the person receiving such infant, shall within two days after such reception give notice to the State Board of Lunacy and Charity of such reception and its terms. The State Board, on receiving such notice or any information of such reception, may cause all the circumstances of the case to be investigated, and may make such recommendations as it shall deem expedient, to such persons in regard to the care and custody of such infant; and if the same are not complied with may make application to a justice to make and enforce such orders as he shall deem for the best interest of the infant. Any person neglecting to give such notice to the State Board, or refusing to give such information as it shall request, or refusing to obey orders of a justice shall be punished.
>
> Whoever gives to any person an infant under two years of age for the purpose of placing such infant for hire, gain or reward, under the permanent control of another person shall be deemed guilty of the abandonment of such infant, and upon conviction thereof shall be punished by imprisonment.
>
> Whoever for hire, gain or reward receives from any person an infant under two years of age for the purpose of placing such infant under the permanent control of any other person shall be deemed guilty of aiding and abetting the abandonment of such infant.
>
> These two latter provisions shall not apply to the State Board of Lunacy and Charity, the overseers of the poor of any city or town, the commissioners of public institutions of the city of Boston, any charitable institution incorporated by law, or any duly authorized officers or agents of the same.
>
> Whoever receives from any person the care and custody of an infant less than two years old for the purpose of adopting, giving a home to or procuring a home or adoption for such infant, shall before receiving the same correctly ascertain the true name, age and birthplace of such infant, with the true name and residence of the parent or parents of such infant, and shall keep a careful record of the same, with the date of such reception. He shall forthwith upon the reception of said infant give notice in writing of such reception to the State Board of Lunacy and Charity, and shall give such information as the board may require.
>
> The parent or guardian of any infant under three years of age, if unable to support it, may, upon personal application to the State Board of Lunacy and Charity and with the consent of the board, place such infant in charge of the board, which shall thereupon have the custody of such infant in the same manner as if it were committed thereto by a court or magistrate.
>
> The mother of an illegitimate infant under two years of age, who is a resident of this Commonwealth and who has previously borne a good character, may, upon personal application to the State Board of Lunacy and Charity and with the consent of the board, give up such infant to the board for the purpose of adoption, and such giving up shall operate as a consent to any adoption subsequently approved by the board.
>
> Previous laws requiring a person receiving an illegitimate infant under the age of one year to board, to notify the overseers of the poor of the city or town in which he resides of the facts of such reception, are repealed.

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VAGINAL SECRETIONS.

THE May issue of the *Archives of Gynecology, Obstetrics and Pediatrics* contains a *résumé* of Doederlein's work on vaginal secretions, read by Dr. J. W. Williams, before the Baltimore Gynecological Society.[1]

Doederlein's object was to find what constituted the normal vaginal secretion, and to determine its relationship to puerperal troubles. Healthy young virgins were selected to furnish a normal secretion, which is described as a small quantity of whitish, crumbling material of the consistency and appearance of curdled milk; it contains no mucus and has an intensely acid reaction to litmus paper. Microscopic examination shows it to consist of vaginal epithelial cells and a large quantity of large bacilli. The pathological secretion, on the other hand, is of a yellowish or greenish-yellow color and cream-like consistency, and often contains mucus and gas-bubbles; its reaction is weakly acid or neutral, and sometimes alkaline. The microscope shows epithelial cells, numerous pus cells and a mixture of all kinds of micro-organisms. Among 195 pregnant women examined, 44.6 per cent. had pathological secretions.

A point of decided interest is that the large bacilli were always present in the normal and never present in the pathological secretions. This bacillus produces an acid (probably lactic acid) which causes the normal acidity of the vaginal secretion. The products of the life of this bacillus were proved to be inimical to the growth of most of the pathogenic micro-organisms. Large quantities of pus-producing organisms introduced into the vagina would completely disappear in four days. The bacillus is not pathogenic, and, therefore, sepsis can occur only by having poison germs introduced from without, and even these must be in large quantity to counteract the effect of the acid-producing bacilli of the normal secretion.

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[1] University Medical Magazine, July.

The proof of the pathogenic nature of the pathological secretion lay in the effect of injecting this secretion in rabbits — suppuration occurred in each case, and death followed in several. This secretion contains almost all kinds of micro-organisms, and in about ten per cent. of the cases streptococci were found. From these observations it is concluded that as the streptococcus is usually the cause of puerperal fever, and as this organism is found in only about ten per cent. of the cases having a pathological secretion, there is no danger of auto-infection among ninety per cent. of all women, whether their secretions be normal or pathological; nor is there any justification in these cases for internal disinfection.

Doederlein believes that the streptococci are unable, of themselves, to invade the uterine cavity and produce infection, and holds that the only way for this accident to occur is for the germs to be carried there by manipulation and douching. A practical application of these observations is made in the lying-in hospitals at Leipzig. Students are not allowed to examine patients until the vaginal secretions have been pronounced normal. Permission is not granted for those cases in which the secretion is pathological. Experiments were made with pathological secretions, during the course of pregnancy, to determine how best to restore the secretions to the normal standard.

Of the many agents used, Doederlein found a one per cent. solution of lactic acid the best. This appeared to produce an unfavorable medium for the growth of the pathogenic organisms, while it supplied the most desirable conditions for the development of the normal vaginal bacilli, which in turn, by their action, made the secretions unfit for harboring most of the pathogenic organisms. In many cases thus treated the pathogenic were sure to give place to the normal vaginal bacilli, and the secretions change from an unhealthy to a normal condition.

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THERAPEUTIC NOTES.

Salts of Strontium for Tapeworm. — Laborde[1] uses the following for the treatment of tænia:

℞	Strontii lactatis	ʒ i
	Aquæ	℥ vi
	Glycerine, q. s.	M.

Sig. One tablespoonful every morning for five days.

Frey's Emulsion of Iodoform.[2] — A teaspoonful of this is added to a pint of water to be used as an injection in cystitis. Professor Billroth terms a ten per cent. mixture of iodoform and glycerine an "emulsion of iodoform." The iodoform should first be triturated with a little of a mixture of equal parts of glycerine and water.

℞	Iodoform	P. 50 grammes
	Glycerine	P. 40 "
	Tragacanth	P. 25 "
	Water	P. 10 "

Physiological Action of Kola-nut.[3] — After considering all the arguments and weighing the evidence produced in favor of each, Combemale arrives at the conclusion that Professor Sée's view is the correct one, that the action of kola in counteracting the sensation of fatigue depends solely upon the caffeine, of which kola contains two or three times the proportion of that met with in coffee; and that this also explains the success of kola in the treatment of diseases of the heart and in the renovation of strength during convalescence or following intellectual or physical over-exertion. The favorable effects of kola in diarrhœa are due to the tannin present in the drug.

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Correspondence.

LETTER FROM KOREA.

Seoul, May 28, 1892.

Mr. Editor: — The pony-ride from "distribution harbor" (Chemulpo: Korean: *Jinsen*) to the capital allows one to see some effects of arbitrary, irresponsible power. The people are poor, largely because of uncertainty of possession and insecurity of life. This city of two hundred and fifty thousand inhabitants, occupies an immense plain surrounded by mountains — a crowded mass of small, straw huts, for the most part. The level site affords little drainage; streets are narrow; various animal excreta and vegetable débris abound. Water is drawn from wells, in good old Oriental fashion. In summer the heat is great — in winter, cold is extreme.

Diseases incident to liquid transmission are plentiful — typhoid, dysentery, etc., as under similar conditions elsewhere. One peculiar form of ulcer is that resulting from the punishment inflicted by beating with sticks. Such are slow to heal. These occur frequently on the shin. Fevers of continuous type are common, probably due to thermic and malarial origin. Specific disease, leprosy, hydrocephalus, glandular degenerations, etc., are frequently observed. Fistula *in ano* is often a troublesome thing, becoming very extensive. Some native persons wear large crystal glasses with tortoise-shell frames — probably as protection against the heat, glare of the sun, dust, and the wind. As, formerly the government prohibited the use of tobacco; so, lately they have tried to prevent the introduction and use of opium — with ill success. Evidently education in self-control is more potent than order of precept by king, priest or parent.

The government hospital is adapted for, probably, fifty occupants, being made similar to the average house — of wood, straw-plaster walls, thatch or tile roof. Successful surgical practice has earned the royal esteem for American physicians.

Foreign hospital service becomes necessarily gratuitous — even to supporting those who come for curative aid. The Methodist Episcopal Mission has a hospital (of capacity of some forty inmates) under professional charge of Dr. Scranton. Experience in these two cities shows that well-directed, judiciously applied medical care and advice are probably the best means to win the confidence of both rulers and of the many classes beneath them, which make up what we call "the people," — here so rigidly fixed in various castes, centuries old. Yours truly,

F. B. Stephenson, *Surgeon, U. S. N.*

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[1] Jour. de Méd. de Paris.

[2] Medical and Surgical Reporter.

[3] American Journal of Pharmacy.

METEOROLOGICAL RECORD,

For the week ending July 9, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer: Daily mean.	Thermometer: Daily mean.	Thermometer: Maximum.	Thermometer: Minimum.	Relative humidity: 8.00 A. M.	Relative humidity: 8.00 P. M.	Relative humidity: Daily mean.	Direction of wind: 8.00 A. M.	Direction of wind: 8.00 P. M.	Velocity of wind: 8.00 A. M.	Velocity of wind: 8.00 P. M.	We'th'r.*: 8.00 A. M.	We'th'r.*: 8.00 P. M.	Rainfall in inches.
S... 3	29.75	71	78	64	68	68	68	S.	S.W.	18	12	R.	R.	.53
M.. 4	29.94	68	74	62	53	45	49	N.E.	N.W.	15	3	C.	O.	.17
T.. 5	30.31	64	70	59	49	56	52	N.W.	S.E.	5	8	C.	O.	.30
W. 6	30.45	65	70	60	49	79	64	N.W.	O.	6	0	C.	C.	
T.. 7	30.45	65	74	57	60	40	50	N.W.	S.	6	5	C.	C.	
F.. 8	30.19	68	75	60	57	83	70	N.W.	S W.	6	9	F.	C.	
S.. 9	30.12	66	74	58	71	87	79	S.W.	S.	6	12	F.	R.	.01
☞	30.17	67	74	60	58	65	62			9	7			.09

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 9, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	1032	640	39.50	9.50	30.50	3.00	.80
Chicago . . .	1,250,000	418	189	22.80	9.84	12.00	3.12	3.12
Philadelphia .	1,092,168	470	247	31.08	9.87	23.52	3.78	1.05
Brooklyn . .	955,353	190	321	39.20	6.60	33.20	3.60	.60
St. Louis . . .	477,873	185	87	27.54	10.26	21.60	2.16	1.62
Boston . . .	469,645	153	47	12.35	21.45	5.20	2.60	1.95
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	117	49	17.00	19.55	9.35	4.25	2.55
Cleveland . .	281,353	105	56	27.55	6.65	17.10	2.85	3.80
Pittsburg . .	255,000	—	—	—	—	—	—	—
Milwaukee . .	231,440	80	31	10.00	7.50	2.50	7.50	—
Washington .	230,360	153	89	32.80	6.50	29 25	.65	1.30
Nashville . .	87,754	36	11	2.78	19.46	—	—	2.78
Charleston . .	56,048	—	—	—	—	—	—	—
Portland . . .	40,000	10	1	—	—	—	—	—
Worcester . .	92,313	25	16	24.00	8.00	16.00	8.00	—
Lowell . . .	82,175	32	21	13.82	3.13	37.56	—	—
Cambridge . .	74,641	18	6	27.77	27.77	16.66	5.55	—
Fall River . .	82,128	52	34	38.40	1.92	34.56	—	—
Lynn	60,809	15	3	13.33	13.33	—	—	—
Springfield . .	47,052	28	17	42.71	3.57	39.27	3.57	—
Lawrence . .	45,910	27	14	32.60	3.70	32.00	—	—
New Bedford .	44,917	17	8	29.40	—	23.52	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Salem	31,195	11	1	—	27.27	—	—	—
Haverhill . .	30,065	10	3	20.00	20.00	10.00	—	10.00
Chelsea . . .	29,479	10	7	20.00	50.00	—	20.00	—
Fitchburg . .	27,141	—	—	—	—	—	—	—
Gloucester . .	26,805	8	2	—	25.00	—	—	—
Malden . . .	26,783	6	1	—	—	—	—	—
Newton . . .	26,489	—	—	—	—	—	—	—
Brockton . .	26,464	7	0	28.56	28.56	—	28.56	—
Taunton . . .	26,464	5	1	—	20.00	—	—	—
Waltham . .	20,912	[illegible]	0	—	—	—	—	—
Pittsfield . .	18,294	3	0	—	—	—	—	—
Quincy . . .	17,930	[illegible]	1	33.33	—	—	16.66	16.66
Northampton .	15,481	4	0	—	—	—	—	—
Everett . . .	14,745	4	0	25.00	25.00	—	—	25.00
Newburyport .	14,031	7	1	14.28	14.28	14.28	—	—
Amesbury . .	13,564	5	1	—	—	—	—	—

Deaths reported 3,564: under five years of age 1,811; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,097, consumption 413, acute lung diseases 245, diarrhœal diseases 825, diphtheria and croup 101, typhoid fever 48 whooping-cough 30, measles 28, scarlet fever 26, cerebro-spinal meningitis 24, erysipelas 9, small-pox 3, malarial fever 3.

From whooping cough New York 11, Philadelphia 6, Chicago 4, Brooklyn 3, Washington 2, St. Louis, Fall River, Cambridge and Haverhill 1 each. From measles New York 24, Chicago 3, Lowell 1. From scarlet fever New York and Philadelphia 7 each, St. Louis and Cleveland 3 each, Boston 2, Chicago, Brooklyn, Cincinnati and Fall River 1 each From cerebro-spinal meningitis Chicago 7, New York 5, Brooklyn, Washington and Lynn 2 each, Cleveland and New Bedford 1 each. From erysipelas Chicago 3, Philadelphia and Boston 2 each, Brooklyn and Chelsea 1 each. From small-pox New York 2, Chicago 1.

APPOINTMENT.

Dr. W. A. Dunn has been appointed a trustee of the Boston City Hospital.

RECENT DEATH.

Charles C. Terry, M.D., of Fall River, died July 18th, aged fifty-two years. During a fencing lesson his mask and the button of his instructor's foil dropped off, and the sharp weapon went through the orbit into the brain. Dr. Terry graduated from the New York Medical College in 1868, and subsequently from the Harvard Medical School. He has practised in Fall River since 1874.

BOOKS AND PAMPHLETS RECEIVED.

University Medical College, Kansas City, Mo., Session 1892–93.

The Necessity for Early Correction in Congenital Club-Foot. By H. Augustus Wilson, M.D.

Management of the New-born Infant. By Floyd M. Crandall, M.D., New York. Reprint. 1892.

Anæmia: Its Treatment by a New Preparation of Iron. By Reynold W. Wilcox, M.A., M.D., New York. Reprint. 1892.

Woman's Medical College of the New York Infirmary, Twenty-seventh Year, Catalogue and Announcement, June, 1892.

Report on the Epidemic of Influenza in New South Wales during 1891. By J. Ashburton Thompson, M.D., Chief Medical Inspector.

Recherches sur L'Epilepsie, L'Hystérie et L'Idiotie. Par Bourneville. Vol. xi. Paris: Aux Bureaux du Progrès Médical. 1891.

On Epistaxis and the Hæmorrhoidal Flux: Their Pathogenic Unity and Identity of Cure. By Alexander Harkin, M.D., F.R.C.S. Reprint. 1892.

Clinique des Maladies du Système Nerveux. M. le Professeur Charcot. Par Georges Guinon. Tome I. Paris: Aux Bureaux du Progrès Médical. 1892.

Leçons sur les Maladies de la Mœlle. Par le Dr. Pierre Marie, Professeur agrégé à la Faculté de Médecine de Paris. Paris: G. Masson, Editeur. 1892.

A Memorial to Congress on the Subject of a Comprehensive Exhibit of Roads, their Construction and Maintenance, at the World's Columbian Exposition.

Amputation at the Hip-Joint by Wyeth's Method, the patient being five months' pregnant. Resection of the Liver. By W. W. Keen, M.D., Philadelphia. Reprints. 1892.

Address delivered before the American Academy of Dental Science, at the Twenty-fourth Annual Meeting, held in Boston, November 11, 1891. By George S. Allan, D.D.S., of New York.

Influenza and the Latest Bacteriological Researches. Inert Tubercle Bacilli; Other More Dangerous Organisms in the Sputum and Lungs. By F. J. Thornbury, M.D., Buffalo, N. Y. Reprints. 1892.

Everybody's Medical Duty. The Function of the Lachrymal Puncta. A Simple Method of Treating Many Cases of Lachrymal Obstruction. By George M. Gould, A.M., M.D., Philadelphia. Reprints. 1892.

On the Sterilization of Milk at Low Temperature, with description of a new and simple apparatus applying the principle of Pasteurization By Rowland Godfrey Freeman, M.D., New York. Reprint. 1892.

Resection as a Substitute for Primary Amputation. Cocaine Analgesia in the Treatment of Hemorrhoids, of Ulcers, Fistulæ and Fissures in the Ano-Rectal Region. By Thomas H. Manley, M.D., New York. Reprints. 1891–92.

A Treatise on Diseases of the Nose and Throat. By Francke Huntington Bosworth, M.D., Professor of Diseases of the Throat in the Bellevue Hospital Medical College. Vol. ii, Diseases of the Throat. New York: William Wood & Co. 1892.

Arthrodese. Guajakolbehandlung der Tuberkulose. Neue Beiträge zur Kenntnis der Syphilitischen Gelenkentzündungen. Zur operativen Entfernung eingeklemmter Gelenkmäuse des Kniegelenkes. Von Prof. Dr. Max Schüller in Berlin.

Original Articles.

THE PRESENT POSITION OF ELECTROLYSIS IN THE TREATMENT OF CUTANEOUS AFFECTIONS.[1]

BY JOHN T. BOWEN, M.D.,
Assistant Physician for Skin Diseases, Massachusetts General Hospital.

It is not my intention in this paper to discuss exhaustively the subject that I have chosen; but I have thought that it might be of interest to the Society to enumerate briefly the various skin affections to which electrolysis has been applied, and to record my own experience as it stands to-day in the application of this method.

That the resources of dermatology have been materially strengthened by the introduction of electrolysis, there can be no doubt. It is the only safe and effective means for the destruction of hair, and its range of application in other affections may be reasonably regarded as likely to be widened by a perfection of the details necessary for success under varying conditions. Electrolysis has been accorded but scant recognition in Europe, until within the last few years, and even now it would appear that many fail to appreciate the value of its employment in various conditions, when in the hands of experienced operators. The last edition of Kaposi's text-book contains for the first time a description of the operation of electrolysis for the removal of hair, although but little mention is made of its applicability to other conditions. In Paris it has at last attained a secure position, chiefly owing to the initiative of Brocq, whose experience will be referred to later.

DESTRUCTION OF HAIR BY ELECTROLYSIS.

It is now fourteen years since Hardaway first employed the electric needle for the destruction of the hair and its papilla, and it remains the only safe and permanent cure for hypertrichosis. It has been proved, over and over again, that every hair can be permanently destroyed, granting a liberal supply of time and patience; and failure to succeed can only depend upon an improper performance or lack of experience. While the operation may appear at first glance in the light of a cosmetic refinement simply, any one who has had considerable experience with the subjects who present themselves for treatment will be eager to testify that it is something more. It is almost impossible to exaggerate the mental suffering occasioned in some women of highly sensitive temperament by the presence of a growth of hair upon the face. It is constantly in their thoughts, and in many instances produces so great a degree of sensitiveness, that their health becomes impaired by the degree of seclusion to which they condemn themselves.

The operation has so often been described that I shall content myself with alluding to one or two points that seem to me worthy of emphasis.

In the first place, I do not see how it is possible to lay down any exact rules for this procedure. Its proper performance is attained by practice only, and the indications that govern us at a given moment are only to be defined in the broadest possible way. I am convinced that two operators may do the work equally well, while using methods quite dissimilar in their details.

I should be very loath to say how long the current should be allowed to pass, or how strong the current should be, as it varies so widely, according to the part of the face operated upon, the size of the hair and the sensitiveness of the skin. I have never found it necessary to exceed two milliampères, and rarely to use more than one and one-half milliampères. A galvanometer is to me an aid, and I am in the habit of keeping one constantly in the circuit; but I consider it of very trifling importance compared with the aptitude acquired by experience, and am far from regarding it as necessary for the best work. In some cases it is of very little use to me; in others, especially where there are very stout hairs to be removed that require a relatively strong current, I have thought that it aided me quite sensibly. For a beginner it seems to me a most proper instrument, as much loose work has undoubtedly been done by the inexperienced, and the use of a galvanometer may, in part, supply the place of the judgment acquired by experience. I have tried a battery of high electro-motive force, with a strong resistance in the circuit, as has been recommended, but have abandoned it after a thorough trial. There is a certain amount of shock experienced by the patient, which is not felt when a small electro-motive force is used, and practically I could see no advantage from the greater steadiness of the current.

I am in the habit of using a copper electrode, covered with absorbent cotton. This is either held constantly in the patient's hand, or they are directed to make and break the current after the insertion of the needle. The latter procedure I have found advisable when hairs that are very stout, or in close proximity, are to be destroyed, as a certain amount of unnecessary inflammation may be caused by the needle in trying to find the mouth of the follicle; but in cases where the hairs are far apart and the follicular mouths easily found, it will save time if the electrode be kept constantly in contact with the skin, although the pain is rather added to, the shock being greater when the circuit is broken by the withdrawal of the needle.

With regard to possible marks left by the operation, they are very slight, and I have never caused any that would be noticeable, or were objected to by the patient, so far as I know. In the large majority of cases, the hair may be destroyed without leaving the slightest evidence of the operation. It is my impression that it is better, provided that the necessary patience is granted by the subject, to allow a larger number of hairs to return than is really necessary; for it is often difficult, even after much experience, to determine the exact moment when a given hair has been destroyed. It is better, therefore, to stop before that point has been reached and to remove it at a subsequent sitting, than to run the risk of causing too much destruction of the tissues around. But every dermatologist knows that idiosyncrasy plays its part in scarring, as well as in other pathological conditions. We know, for instance, that in some skins, an acne pustule will leave an indelible mark, while in most others a much greater degree of follicular inflammation will, on subsiding, leave the skin perfectly smooth, and this is true, also, of slight injuries. The negro skin is proverbially disposed to keloidal growths after injuries or inflammation, from some as yet obscure cause. For this reason we may expect in rare instances to encounter subjects whose skin re-acts more vigorously than usual to the violence done by the electric needle, and in them, even with the utmost caution, a slight pitting may result.

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[1] Read before the Boston Society for Medical Improvement, March 28, 1892.

The hairs upon the neck are hardest of all to remove, on account of the angle at which they are inserted, and one usually has a larger number of recurrences here than in most localities. It would appear that we must expect a certain small number of hairs to return, requiring a second treatment, even if the operation is most carefully performed. That this is inevitable may be seen from what takes place in the formation of new hair. It is agreed by all who have studied the subject, that the new hair is formed at the lower part of the follicle, before the old hair has become freed from its epithelial connections and cast off. Unna even asserts that the old hair continues to grow for a certain time after the papilla has disappeared and the root has become contracted, obtaining its nourishment through the rete cells of the walls of the follicle to which it adheres. But whether or not this view be the correct one, it will be seen that many of the old hairs not yet detached must be among those that we remove, and that in the same follicle, at a point not likely to be reached by our needle, lie the elements of a new hair which will make its appearance later.

The number of hairs that can be removed at a sitting varies so widely that it is practically impossible to formulate any rule; and, therefore, one should be very cautious in replying to the inevitable question, How many sittings will be necessary? But it can be said decidedly that every hair can be thoroughly destroyed in the end, and that a successful result in every case is simply a matter of time and patience.

Turning now to the other cutaneous conditions to which electrolysis is applicable, we find ourselves dealing chiefly with hypertrophies and new growths, — affections in which we are able to make use of the destructive action caused by the electric needle in a limited area.

DILATED AND HYPERTROPHIED BLOOD-VESSELS.

In this class of cases electrolysis is now a therapeutic agent of distinct importance, although the hopes that were at first aroused have not been wholly realized. The small, punctate, angiomatous spots with radiating offshoots of dilated blood-vessels, the so-called "spider cancers," are readily and effectively cured by inserting a needle of a size suited to the individual lesion into the very centre of the growth, and allowing a current, usually somewhat stronger than that employed in hypertrichosis, to pass for a few seconds. A blanching of the dilated capillaries is immediately seen, beginning at the point where the needle has entered the skin, and extending peripherally until the minute radiating vessels have ceased to be apparent to the eye. If cautiously done, no trace of the operation should be left; the pain is trifling, and is easily borne in many cases by quite young children. It may rarely be necessary to reinsert the needle at a subsequent sitting, if, owing to an especially sensitive skin, or any other reason, it has been thought wise to begin with a very feeble current and to proceed cautiously. At the point of insertion of the needle, a small crust may form, which is allowed to fall of itself, leaving a smooth, normal surface.

In another class of cases, somewhat similar to those just spoken of — small angiomata, from the size of a pin's head to that of a small pea, — a similar procedure is often effective. If the lesion is raised above the level of the surrounding skin, it may be removed by passing the needle through its base in different places, allowing the current to pass but a short time at either insertion. Here, again, as in hypertrichosis, it is impossible to lay down definite rules for guidance. A certain measure of experience will prove of the greatest value in determining the results attained. Some have recommended the insertion of two needles, one connected with either pole of the battery, into these growths when they are of the size of a small pea; but of this method I have no experience. I have always used a needle attached to the negative pole of the battery, and in the case of small, isolated angiomata, the results have almost always been satisfactory. With regard to the larger angiomata, in which are included the vascular nævi that often attain a large size in infants, their treatment falls more properly into the province of the surgeon.

Telangiectasis, a more or less diffuse dilatation of the superficial blood-vessels; and under this head I shall include rosacea. It was Hardaway, the introducer of electrolysis for hypertrichosis, who first suggested this method for obliterating dilated blood-vessels in the skin. He introduced a needle attached to the negative pole, either perpendicularly or parallel to the vessel to be destroyed, allowing the current to pass a longer or shorter time, according to the size of the vessel and other indications. As to the permanent effect of this procedure, or its applicability to all cases, Hardaway's experience had not at the time been sufficient to warrant positive assertions. Since that time the method has been widely tried, especially in America, our previous control of this condition not being sufficiently satisfactory to warrant us in rejecting any method that looked promising.

From my own experience, I should not wish to exalt this method to the exclusion of all others in the treatment of the different grades of rosacea, although I should be very sorry to be deprived of its aid. In the milder form, where the redness is equally distributed over the affected surface, and where the individual vessels are with difficulty, or not at all perceptible, when the skin is put upon the stretch, electrolysis has proved of very varying advantage. In many cases no permanent result could be obtained, although I have tried many different ways of inserting the needle, and variations of detail. The collateral circulation is apt to be so complete that it is simply impossible to destroy enough of the minute, invisible branches to prevent the blood-supply from returning, sooner or later, to the neighborhood of its former seat. In other cases of this class, a number of trials at intervals of a week have served to modify so completely the annoying conditions that much satisfaction has been expressed by the patient. In obstinate cases, where a strong desire for relief is expressed, the method seems to me worthy of a careful trial with a guarded prognosis; and on the whole, my experience has not been such as to discourage the hope that it may be capable of still further development.

Cases of diffuse redness, where a few of the smaller vessels stand out prominently, are much more amenable to treatment, although even here I have been sometimes disappointed. As a rule, the more prominent vessels may be made to disappear by inserting the needle in several parts of their course, and in this manner the affection may become much less pronounced.

The severer grades of rosacea, complicated usually with acne, are proper subjects for this treatment, and may often be permanently benefited. The reserve that has been expressed with regard to the treatment of the milder forms must, however, be repeated here. Many cases are somewhat improved, some greatly, and a considerable number prove refractory. My experience with the severer cases has not been so large as with those of medium grade, and I am not, therefore, inclined to express myself categorically at the present time.

Port-wine Mark. — The treatment of this disfiguring congenital condition has been the subject of much ingenious experimentation, and various methods, such as that of multiple scarification, introduced by Balmanno Squire, have offered hope from time to time. The introduction of electrolysis for the removal of hair was soon followed, as has been seen, by its application to other cutaneous blemishes; and Drs. Hardaway and Fox were the first, I believe, to recommend its use in the treatment of nævus vasculosus. Dr. Hardaway employed first a bundle of needles, but found that the reaction after their use was too violent, and that there was a great tendency to keloidal development; so that he later employed the single needle. At a meeting of the American Dermatological Association, held in 1885, Dr. J. C. White reported that although he could not state that he had produced a complete cure, great improvement had taken place in a number of cases, and in some diseased patches complete obliteration of the vessels had resulted.

My own experimentation has been with the single needle solely, and the results in a limited number of cases have not been on the whole satisfactory. An improvement was often to be seen that did not prove to be permanent. In cases where isolated vessels or irregularities of surface are present, the appearance of the whole may be much improved by destroying these excrescences. But in this condition we have, as a rule, to deal with a very dense anastomosis of vessels of a small calibre, which are so closely intertwined that the separate vessels cannot be seen, and which is often connected with a dilatation of the deeper plexus as well. Dr. G. H. Fox, of New York, has proposed to create numerous minute cicatrices upon the surface of the patch with the electric needle, by which means the color would be so reduced that there would be no contrast with the surrounding skin, while the usual appearance of scar tissue would not be produced. Dr. Fox, in a recent letter to the writer, says: "I have succeeded in removing a few small wine marks both by electrolysis and by 'spotting' with nitric acid, that is to say, making yellow dots as close to one another as possible without coalescing. The result has been a smooth, semi-cicatricial condition of the skin, with great satisfaction on the part of the patient. In extensive wine marks of the face, I have often removed the excrescences, changed the hue from dark purple to light pink, and in some cases have made a light, contrasting band directly across the patch; but these results have hardly been commensurate with the time and trouble involved. Still, I am more encouraged than I was years ago, when I first wrote on the subject, and have found nothing else that will do nearly so well."

HYPERTROPHIES OF FIBROUS TISSUE AND OF PIGMENT.

These conditions, often of congenital origin, are more safely treated by electrolysis than by any other method with which I am acquainted. The most frequent condition is that commonly described as a "mole," which is most thoroughly detested by women when occurring on a conspicuous part of the face. The blemish may be merely a congenital hypertrophy of pigment in a limited area, a pigmented spot with smooth surface (nævus spilus); or there may be in addition an increase of connective-tissue, causing the blemish to project more or less prominently above the level of the skin, and often covered with stout, wiry hairs.

When the "mole" consists merely of an hypertrophy of pigment, it may be safely and neatly removed by touching it a number of times with a rather stout needle, connected with the negative pole of the galvanic battery, taking care to go no deeper than the part of the tissue that contains the pigment granules. A superficial crust will form, which is allowed to fall spontaneously, leaving a smooth, almost normal surface. If the growth is covered by hairs, it will be well to remove these first, and if many deeply-seated ones are present, they should not all be removed at once, so as to avoid the scarring that may result if hairs that are situated closely together are destroyed at the same sitting.

When there is hypertrophy of the fibrous tissue, causing an elevated lesion, as in the most disfiguring "moles," its base is transfixed in various diameters by a rather stout needle, using the utmost care not to include the normal tissue, and not to insert the needle deeper than is necessary. If the base is somewhat constricted, the operation is all the more easy and satisfactory; but in almost all cases of this kind, where the lesion is of a small or moderate size, the best results may be obtained after a little experience. An important maxim, it seems to me, is not to attempt the removal of the whole excrescence at once, if the very best results are desired, but to stop just short of what you think will be sufficient destruction. After the process of repair is complete, the remaining portion may be accurately gauged, the difficulty being to determine the exact instant when the "mole" has been destroyed; as further destruction must be at the risk of getting a less satisfactory cosmetic result. In this way we may keep the amount of destruction under pretty accurate control, and for this reason the method is superior to that where acids and other caustics are used. In the treatment of some flat forms of fibrous hypertrophy I have made use of a needle with a lancet point, which may be moved in various directions through the growth. Hardaway has applied this method to the treatment of ordinary freckles also, treating them by repeated touching with the point of the needle, which should not enter deeply.

Very many verrucous lesions are also well adapted to this mode of destruction, the procedure being varied somewhat according to the individual indications. Small warts upon the face, for example, are treated in the same way as the fibrous hypertrophies just considered, and with good results. I do not wish, however, to claim for electrolysis an exclusive place in the therapeutics of these growths, as the judgment of the physician will, in many instances, lead him to prefer other methods.

Scleroderma. Circumscribed plaques and bands of scleroderma have been more or less successfully treated by electrolysis. Brocq reports several of these, in which he has used much the same methods as in keloid. He uses a single small, fine needle and a very feeble current, inserts the needle parallel to the surface of the skin, taking care not to include the neighboring tissue. He has noted that the electrolytic action may favorably affect a part of the growth situated at a distance from the point at which the needle is inserted. He regards the *method* of operating as being of great importance, to be varied according to the individual case.

NEW GROWTHS.

Keloid and Hypertrophied Scars.— The treatment of these lesions, so unsatisfactory as a whole, has not as yet been very much advanced by the employment of electrolysis, although some favorable results have been reported. Suggested as worthy of trial by Dr. Hardaway, the subject was discussed at the meeting of the American Dermatological Association, September, 1888, when Drs. Fox, Hyde and Heitzmann reported that in a small number of cases they had failed of success. Dr. Morrison reported some favorable results in hypertrophied scars. In a letter to the *Journal of Cutaneous and Genito-Urinary Diseases*, dated February, 1889, Dr. Hardaway explained that he had in no sense urged its claims as a specific treatment for keloid. He had merely considered that some favorable results that he had obtained were worthy of record, and should stimulate to a further trial. Brocq, of Paris, who has been mentioned before as the one in France who has been most alive to the merits of electrolysis, has reported several good results from its use in keloid. He advises the employment of a current of from five to ten milliampères for from thirty to forty seconds, the needle being introduced in various places until the whole growth has been influenced by the electrolytic action. The operation was repeated about once in ten days. He regards the good effects of the operation as continuing for some months after its performance, in contradistinction from scarification, where there is a tendency to recurrence as soon as the treatment is omitted, provided the whole growth is not destroyed. That he is not to be regarded as a very devout disciple of this procedure may be surmised from the fact that he recommends its combination with the older ones of scarification and of the application of mercurial plaster.

While the published results have thus far not been particularly encouraging, the obstinacy of these growths to excision and the other methods should be remembered, and the good effects occasionally observed from electrolysis accorded their full weight.

There are other small forms of new growths in which electrolysis may often be employed with advantage. It has been proposed to treat small epithelial formations in this way, or by combining electrolysis with curetting. For xanthoma, which grows so frequently upon the eyelids, electrolysis has been well spoken of and would seem a most promising method. Apart from the fact that a smoother, less permanent cicatrix is usually left, it has the advantage of causing little pain and being entirely bloodless, and patients who fear the knife will often consent readily to the electric needle. I have never heard of, or seen the slightest harm following its use.

LUPUS.

Gärtner and Lustgarten published in 1886 a method for treating lupus, in which they destroyed the nodules by applying a silver plate, surrounded by a hard rubber ring and connected with the negative pole of a battery, to the diseased tissue. They used a current of from five to ten milliampères, and found that the lupus nodules, when scattered over the skin, were alone attacked, the sound tissue remaining undisturbed. A great advantage claimed for this method was its comparative painlessness. Dr. Jackson of New York reports good results from this method, as well as from the employment of the single needle. My own experience is very limited, confined to one pretty extended case of long standing, where there was much formation of fibrous tissue in the lupus nodules, rendering the treatment by nitrate of silver very difficult. A single large needle was used, either in its ordinary shape or bent over at the point, so as to afford a larger working surface. The pain caused was certainly much less than that from boring with the nitrate of silver stick, and I was quite well satisfied with the results. With the Gärtner-Lustgarten method I have had no experience. Since we have been rudely thrown back upon our old mechanical methods in treating cutaneous tuberculosis, anything that promises to be of service, even occasionally, should be welcomed. It is difficult to believe that electrolysis will ever supplant the other methods by cauterization and raclage, but I do not doubt that occasionally, especially when the tissue is firmly organized, it may be resorted to with benefit. Where there has been ulceration, it would seem to be of less value. A very strong argument in its favor is the comparatively slight amount of pain caused, a point of the utmost importance where large surfaces have to be frequently treated.

AN IMPROVED METHOD OF REMOVING VASCULAR GROWTHS OF THE SKIN BY ELECTROLYSIS.[1]

BY MORTON PRINCE, M.D.,
Physician for Nervous Diseases Out-patient Department, Boston City Hospital.

The subject of electrolysis as a surgical procedure covers so wide a field that, at this time, it will not be possible to discuss more than one or two of the numerous points treated by the reader; therefore, in the few remarks that I have to make I shall, for the most part, confine myself to the treatment of vascular growths of different kinds. For a number of years past I have been experimenting with electrolysis with the hope of being able to improve the results that are obtained by this process, especially in the treatment of port-wine stains and of superficial vascular growths of different kinds. My first experiments were made five or six years ago and they have been pursued more or less continuously since. A diversity of opinion existed then as now regarding the technique, the poles to be used, etc. It became therefore necessary for my own purpose to reinvestigate the whole subject and study the effects of electrolysis in all its details. These experiments have been made for the most part in the direction of the removal of vascular growths, and though my expectations have not been realized in every respect, still some of the results reached have been quite positive and satisfactory, and seem to me at least, to be an improvement upon those reached by previous methods. I, therefore, venture to describe them at this time, although my experiments are not yet finished. It is possible that the results to be obtained by the methods to be described may be still further improved. First let me speak of

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[1] Remarks made in the discussion of Dr. Bowen's paper, at the meeting of the Boston Society for Medical Improvement, March 28, 1892.

PORT-WINE STAINS.

All methods hitherto in vogue for the removal of this mark by electrolysis (if not by all surgical means) have been based upon the principle of producing a multitude of small points or lines of scar tissue scattered throughout the discolored patch so as to lighten the color of the vascularly injected skin. Where the scar tissue has been produced the vessels of course, have been destroyed, but between these points the vascular injection remains as before. The consequence of this is that a mottled condition of the skin results which though lighter in color than the original deformity is yet in some respects as much of a blemish. Instead of the perfectly smooth, even, wine-colored mark we have one that is equally noticeable because of its mottled character. For this reason alone, attempts to improve this deformity by electrolysis have not proved a success. The usual method of producing these scattered points of scar tissue is the insertion into the skin of numerous needles connected with the *negative* pole of a battery and producing thereby dissolution of the dermis. Wherever the needle has destroyed the skin cicatricial tissue is formed.

It occurred to me that if it were possible to coagulate the blood in the vessels without destroying the skin and if this were done uniformly it might be possible to remove or improve the blemish produced by these vascular growths without the production of scar tissue or mottling.

It will be remembered that the positive pole is a good hæmostatic and will readily coagulate the blood if inserted in a vessel; in fact it may be used to stop mild bleeding from wounds. It appeared possible, therefore, that if the blood could be coagulated by this means and the process stopped before further damage had been done to the tissues, the vessels could be successfully destroyed. With this object in view the experiments were carried on. At the outset, the first difficulty encountered was the pigmentation of the skin, which resulted when a steel needle was used with the positive pole. At that time, now some years ago, the cause of this pigmentation was as yet unknown. The irido-platinum needle had not been invented. It was not difficult, however, to determine that the cause of this pigmentation was due to deposition of an iron salt in the skin. A gold needle offered the same difficulty owing to the alloy of silver and copper used to harden the gold. The later invention of the irido-platinum needle removed this difficulty. The next point to determine was the minimum quantity of electricity that was sufficient to coagulate the blood, and whether this quantity would do so without producing necrosis of the surrounding tissue. By quantity is meant the strength of current and the time during which it is allowed to flow. It was further necessary to study the minute changes to be immediately observed in the neighborhood of the needle in order to obtain a gauge by which we should be governed in the regulation of the current and by which we should be able to recognize the effects that had been produced. As the result of a very large number of experiments I have been able to obtain results which in some respects are very satisfactory. Whatever measure of failure has resulted has been not due so much to the process itself as to other physiological considerations which will be mentioned later. I will summarily detail the method which I finally adopted as the one which, on the whole, gives the best results.

The result sought for is to destroy the vessels in a series of parallel lines, each line, being from one-half to one inch in length and from one-twelfth to one-eighth of an inch in width. These lines when first made must be separated from each other by intervals of sound skin which are not acted upon by the electrical current. These intervals of sound skin are later to be treated in the same way after the inflammatory process caused by the insertion of the needle has completely healed. If a large surface of skin is to be operated upon, the lines made at one sitting should be continued in the original direction across the whole patch at subsequent sittings. It is important that the lines should always be parallel in order to avoid leaving islands of vascular tissue, here and there, which would have to be removed subsequently with great difficulty and to avoid producing the mottled appearance already spoken of.

The technique of the procedure is as follows: the needle connected with the positive pole is thrust into the true skin parallel with the surface for a distance of one-half to one inch; the skin is "threaded" or skewered, as it were, by the needle. The negative pole is placed in the hand, and the current is then gradually turned on until from two to three milliampères are recorded. It is now necessary to watch with great care the changes in the skin over the needle. The first change to be noticed is that the track of the needle is marked by a sharply-defined white line, the red or purple colored skin directly over the needle becoming blanched by an apparent contraction of the blood-vessels. Presently, in the course of a few seconds it will be observed that little dark dots appear in this white line,—at first one or two, then more which soon coalesce, and the track of the needle becomes marked by a black line due apparently to coagulated blood. If the process be not stopped at this point but be carried still further, the tissue swells, and the epidermis may be raised as a vesicle and much inflammatory action and necrosis may follow. It is, therefore, important to stop the process at a point when as little inflammatory action as possible has been produced. The best guide for this is the appearance of the dark, blackish dots. When a number of these have formed and before the whole path of the needle is marked by the discoloration the needle should be removed. It will then be found that the process will continue for a few minutes after the removal of the needle until the track of the needle is marked by a dark brown line. All depends on the electrolytic process being suspended at the right point, otherwise either the results will be insufficient or damage will be done. It is not possible, of course, to accomplish this destruction of the vessels without producing some inflammation, but a slight amount of inflammation does not result in scar-tissue formation. Everything in this respect depends upon the skill and judgment of the operator. The needle should not be inserted again near the same place for two or three weeks until the healing process is completed. At the end of this time it will be noticed that the track of the needle is marked by a yellowish colored skin. This yellow color fades with time until the color approximates that of the normal skin. The color never, perhaps, quite matches that of the neighboring skin for reasons which will be later stated, but the red injected appearance is removed.

Great care must be taken in calculating the distance by which these parallel lines shall be separated. The distance should be such as to be a multiple of the width of the resulting white line, otherwise it will be difficult not to leave streaks of discolored skin between the needle marks. Great care must also be taken at subsequent operations in determining the exact point at which the needle should be inserted next adjoining the preceding needle mark. Upon determining this with accuracy largely hinges success. To do this it is necessary to know the exact width of skin that will be destroyed by any one needle. This can only be learned by practice. Another matter of great importance is this: the parallel lines must be separated by an interval which will render it impossible for the secondary inflammation bounding two lines to coalesce. If the lines are placed too near together ulceration and scar tissue are sure to result.

Let me now say a few words regarding the results obtained. These may be divided into those that were temporary and those that have been permanent. By this process I found I was able to clear a patch of skin entirely of blood-vessels, or at least to do so to an extent that to the naked eye appeared little if any richer in blood-vessels than the surrounding healthy skin. It may have had a slightly more pinkish color than normal but it was very slight. The final color seemed to depend very largely upon the thickness of the skin and on the depth to which the blood-vessels extended in the skin. Where the skin was thick and contained a correspondingly deep layer of blood-vessels, which perhaps also extended into the subcutaneous tissue, it was not possible to obtain the same results as where the skin was thin. In the former case more or less pink discoloration existed, while in the latter very little if any. For example, in the thick, loose skin of the neck, the results were not nearly as good as in the skin overlying the mastoid bone behind the ear. In this latter situation the results were excellent. Over the cheekbone, too, a very good result was obtained in a child to the great gratification of the parents. In this case an attempt had previously been made to burn out the growth with a hot needle, but with such poor results that the surgeon who undertook to do it brought her to me. A second and most important result secured was the production of a surface of a nearly perfectly even color, without mottling. No operation can be considered really successful that does not approximately accomplish this. By the process I have described this can be done, but it requires great care and patience. I have used the words "nearly" and "approximately" designedly because close scrutiny would show, that scattered through the patch of skin operated on, here and there, could be seen, small dots or islets of blood-vessels which had not been completely included in the electrolytic process.

Regarding the permanency of the results, I regret to say that in some respects they were disappointing and in some respects gratifying. Where the skin was thick and succulent with blood-vessels I had the mortification and the disappointment of seeing my work almost completely undone by a new growth of blood-vessels in the same place. The color was not as deep as before, but it was deep enough, and also was not as evenly diffused. On the other hand, where the skin was thin, and therefore where the blood-vessels had been destroyed through their whole extent, there was very slight tendency to recurrence and only few developments of islets here and there, which were of slight consequence and could be easily picked out with a needle. Therefore, it may be said that the results obtained depend entirely on the conditions present in any individual case, upon the depth, the superficial nature of the growth, its situation, etc. Small, superficial, port-wine marks can be removed so as to leave but a very slight trace of their former existence in the form of a whitish or yellowish discoloration of the skin. Large, deep ones cannot be permanently removed. Each case must be decided on its merits. I have spoken of yellowish or whitish discoloration of slight intensity, that may remain, this apparently is due to and varies with the amount of connective-tissue formation already existing in the growth. It must be remembered that blood-vessels mean besides blood, tissue walls surrounded by connective-tissue. Though the blood-vessels may be occluded they become practically transformed into connective-tissue formation that must persist. Therefore, any patch of skin infiltrated with blood-vessels must, though the lumen of these vessels be obliterated, be composed of a different anatomical element from that of normal skin. This it seems to me is one element that gives the slightly different color to skin that is operated on compared with that of normal skin.

I have said one of the main objects of this method was to avoid the formation of scar tissue. Judging by naked-eye appearances this seemed to have been accomplished. The skin did not have the characteristic appearance of scar tissue, but seemed to possess a true epidermis. I have no doubt that histologically a certain amount of connective-tissue must have been produced in the deeper layers and would be revealed by the microscope. But to the eye this was not apparent, and if under all conditions there had been no tendency to recurrence, the results would have been perfectly satisfactory.

To overcome the tendency to recurrence of the vascular growth I have lately sought in the cases where it occurs, to replace the vascular skin with scar tissue, but to do so so as to make a uniformly colored white skin. This in itself is something of a disfigurement but perhaps not so bad as the original. I think that it can be done in some cases with success and when accomplished there is little, if any, tendency to recurrence. I think it would be possible to paint afterwards the scar tissue so formed, so as to resemble the surrounding skin, and thus mitigate very largely any deformity that might result. I am still experimenting in this direction. Scar tissue produced by electrolysis, it should be said, has the advantage over other scar tissue in that it does not pucker and therefore is not a deformity excepting for its color.

VASCULAR TUMOR (ANGIOMATA).

There is another class of growths the treatment of which by electrolysis may be said to be very favorable as compared with all other methods of treatment. When the vascular growth results in a tumor formation or an elevation of the skin, electrolysis gives the best results, unless the tumor be so small and of such a nature that it can be cut out with a knife so as to leave only a linear cicatrix. When the growth is broad and extensive, as sometimes occurs on the face, removal with the knife is out of the question. To destroy the blood-vessels by electrolysis is not very difficult. In cases of this kind the production of a white scar tissue is a matter of small consequence compared with the original deformity but, of course, there is no possibility of removing such a growth without the production of extensive scar tissue. I have now under my care a child upon whom I have been operating at intervals for the last three years. Owing to various circumstances it has been impossible for the child to come to me more than three or four times a year, (twice during this past year,) so that the operation has been necessarily prolonged. When first seen by me there was a large vascular growth over the left eyelid, brow and temple. The left eyelid protruded above the eye as a tumor about the size of an English walnut and the eye was nearly closed. Over the eyebrow and for about an inch above upon the forehead and over the left temple the skin was raised about $\frac{1}{8}$ to $\frac{1}{4}$ of an inch above the surrounding healthy skin. The whole was of a dark maroon and purple color. It will thus be seen that the growth was very extensive and a great disfigurement. I have succeeded in reducing the tumor of the left eyelid to a nearly normal thickness and the remainder of the growth has been brought down to the level of the healthy skin. The surface is perfectly smooth and of uniform thickness. The color has been replaced for the most part by that of white scar tissue but as yet the color is not completely uniform but is more or less streaked. I am now engaged in picking out these islets of blood-vessels and expect eventually to make it of a uniform color somewhat whiter than the surrounding healthy skin. Even as it is the disfigurement is not to be compared to what it was.[2] With the hair "banged" on the forehead, and the eyes open, the site of the growth on the lid is not noticeable. Eventually when the child grows up, if any deformity exists from the color it can be painted, as I have already suggested. The best test of the results already obtained in this case is the satisfaction of the parents who think the improvement great. I do not see how the growth could have been treated any other way. It seems to me that in the treatment of vascular growths of this kind alone there is a great field for electrolysis which is not thoroughly appreciated by the medical profession.

The technique is nearly the same as that described for port-wine stains.

WARTS.

Warts on the hands or face can also very easily be removed by electrolysis. I have removed warts from the hands without leaving any scar that was perceptible, in fact with so little after defect that it was impossible to see where the wart had been. For these purposes I have used the zinc electrode connected with the positive pole. This method was suggested by some one in France whose name I have forgotten.

MOLES.

Pigment moles may be also removed by electrolysis. They leave behind them a slight whitish or yellowish scar but which is a less disfigurement than that of the original mole. For the removal of these moles I have used both the positive and negative poles. Sometimes I use different poles on different moles on the same person for purposes of comparison. The patient has usually selected the slight scar from the positive pole as being the least objectionable. Here it may be said that the positive pole has been very much neglected in electrolysis work. It has the advantage over the negative pole in that it does not produce dissolution of the tissue if rightly managed but rather inflammatory effects. Necrosis can, however, be produced if care be not taken.

REMOVAL OF HAIR.

So much has already been said about this, that little remains to be said. I will merely add to the remarks already made, that I differ with Dr. Bowen and Dr. White regarding the possibility of removing hairs without an observable scar. I believe it can be done. I believe that even the strongest hairs can be removed without any scar that can be detected by the naked eye. I do not say it it is not difficult; it is difficult. It requires patience and care. It often requires that a given hair shall be removed again and again, but there is a little trick which allows it to be done. It is this: when the hair is very strong, do not attempt to destroy it at the first sitting, simply loosen it and take it out by the root. This can be done with a very mild current. When it comes back and is just making its appearance above the skin remove it completely; it is then tender and delicate and easily destroyed. I do not wish to be understood as asserting that I always remove hair without scarring, on the contrary, I sometimes make no pretence not to. When a person's time is limited, and when, therefore, she cannot give the requisite number of sittings, or when the growth is so extensive as to practically render it inexpedient to do it the way I have suggested, I am in the habit of compromising and removing the hair with as little damage as possible. When, however, the person has only a moderate growth and can give the requisite time, I am in the habit of giving her the choice of having it done rapidly with scars or slowly without them.

Of the use of the galvanometer and rheostat, it should be explained that the necessity of such apparatus depends upon the electro-motive force of the battery employed. Dr. Bowen states that he uses a battery of eight cells, on the average. This with the average resistance of the skin would give him a maximum current of three or four milliampères only, while at times it would give him much less than that. Under such circumstances the galvanometer and rheostat would be of little value; but when a battery of high electro-motive force is used, such as I prefer, it is simply impossible to do without them. The advantages of being able to regulate the current with absolute nicety far outweigh the disadvantages of high tension.

The following points were recently decided in a California case: A physician called by a man to attend a woman, supposed to be his wife, can recover for his services from the person summoning him, although the parties are not, in fact, legally married. One who calls a physician to attend a person whom he represents to be his wife cannot deny that fact in an action for services rendered on faith of such representation.

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[2] Since reporting this case the child has been seen again. I was agreeably surprised to find that the result in its present condition was even better than I remembered it to be.

A TABLE OF MORTALITIES.

BY EDWIN FARNHAM, M.D., CAMBRIDGE, MASS.

CAMBRIDGE.

Mortality per 1,000 Living in Five-Year Periods.

Disease.	1851-55.	1856-60.	1861-65.	1866-70.	1871-75.	1876-80.	1881-85.	1886-90.	Mortality per 1,000 living, 1851-1890.
Cancer	0.30	0.28	0.22	0.29	0.29	0.43	0.55	0.61	0.42
Diarrhœal dise'ses,	3.42	2.25	2.74	2.94	3.39	2.52	1.78	1.91	2.48
Diphtheria and croup . . .	0.64	0.62	0.98	0.66	0.54	1.58	1.42	1.07	1.03
Measles	0.31	0.18	0.11	0.09	0.18	0.02	0.08	0.19	0.13
Phthisis	3.97	3.89	3.20	2.93	2.97	2.81	3.16	2.62	3.04
Scarlet fever . .	0.51	1.41	1.36	0.77	1.31	0.35	0.25	0.20	0.65
Typhoid fever . .	0.35	0.34	0.44	0.37	0.52	0.21	0.30	0.34	0.35
Whooping-cough,	0.40	0.15	0.17	0.14	0.26	0.16	0.14	0.19	0.19
Diseases of circulatory system,	0.47	0.59	0.70	0.65	0.78	0 74	1.19	1.12	0.86
Diseases of digestive system,	0.19	0.20	0.38	0.29	0.52	0.55	0.64	0.67	0.49
Diseases of nervous system,	2.34	2.07	2.70	2.21	2.66	2.49	2.70	2.58	2.51
Diseases of respiratory system,	1.07	1.19	1.79	1.67	2.45	2.34	2.99	2.48	2.22
Diseases of urinary system .	0.11	0.03	0.19	0.21	0.28	0.50	0.61	0.65	0.41
All causes . . .	20.46	18.99	20.82	17.72	22.16	18.35	19.59	18.75	19.48

The table given above is offered as an approximation to the truth. It was calculated from the Record of Deaths in the office of the City Clerk. The nomenclature used is that drawn up by a joint committee appointed by the Royal College of Physicians, with the exception of the heading "Diphtheria and Croup."

I think the mortalities of the first eight headings are as accurate as such figures usually are. I doubt the value of the mortalities attached to the diseases of the various systems. The following is a sample of the ground on which that doubt is based.

Asthma, a not infrequent return. Is it not sometimes merely a dyspnœa due to disease of a system other than the respiratory?

Peritonitis: In women of child-bearing age some of these cases are undoubtedly puerperal.

Spasms, fits, convulsions are of frequent occurrence, and are, it seems to me, evidence that what is certified as the cause of death is often but the terminal or most striking phenomenon of the disease.

Then there are a number of causes which could only be grouped under some such designation as "other causes." Below are some of them exactly as returned, nothing extenuated, nor aught set down in malice: atrophy, apnœa, bleeding, cold, canker, cramps, consumption of blood, congestion, congenital, chronic disease, cerebral symptoms, decline, disease of blood, debility, dyspnœa, exhaustion, gum disease, humor, heart failure, hyperæmia, inflammation, infantile, loss of vital principle in blood, marasmus, non-vitality, prostration, pains in head, pains, rash, stagnation of blood, stoppage, sore mouth, teething, vomiting, weakness.

Four at a Birth. — A Philadelphia woman recently went to visit a friend, and there gave birth to four girls. The press despatch also states that the father, who was breakfasting at the time, became greatly excited when the news was broken to him.

Clinical Department.

A CASE OF DISSEMINATED FAT NECROSIS.

BY F. B. HARRINGTON, M.D.,
Surgeon to Out-Patient Department, Massachusetts General Hospital; Assistant in Surgery, Harvard Medical School.

Mr. H., sixty years of age, with a good family history, had been a book-keeper for the past twenty-eight years. His only severe illness since childhood was rheumatic fever at the age of twenty-three. He had always been temperate in every respect. He had suffered in late years from slight indigestion, and his complexion, which had formerly been clear, became sallow with some yellowing of the conjunctiva. He was always an active, healthy man, and of late years weighed 190 pounds.

Four years ago he had the first of a series of attacks of intense pain in the epigastric region. It came on after eating sausage. There was vomiting, but no jaundice followed, and the attack had passed off entirely on the following day. After this he was subject to attacks of indigestion with pain and vomiting, but not of the intense character of the first attack.

Two years and a half ago there was a severe attack of pain lasting four hours. He was given morphia by subcutaneous injection. On the following day he was at his business. There was jaundice and dark-colored urine for a few days.

He then had four or five attacks similar to this one except that there was little or no jaundice. These attacks were relieved by injections of morphia, and were usually over on the next morning. For a time the pain was very intense, so that the patient was unable either to lie or to sit down.

In April, 1891, he had a more severe attack still. For two days he had hard pain, coming and going, when it became so intense that morphia was used subcutaneously. The pain continued in this attack for two or three days, and was accompanied by some fever, abdominal distention and by severe vomiting. The patient was jaundiced, and passed dark-colored urine. This attack was the most severe and prolonged. The patient was confined to the house for about one month.

He remained quite well after this attack, except for slight indigestion, until December 25, 1891, when severe pain came on, lasting a few hours, but not requiring morphia. For a week after this he felt poorly, was somewhat jaundiced, and the urine was quite dark. Then the intense pain in the right epigastric region called for the use of morphia. This relieved the pain quickly. He was about his business for two days after this in comparative comfort. Then there was more pain, and the patient was advised to go to bed. He was quite yellow, the stools were clay-colored, and the urine was full of bile. The temperature was normal and the pulse slow. There was nausea and occasional vomiting. The abdomen was not distended. The area of liver dulness was not increased. No gall-bladder could be felt. There was tenderness in the epigastrium on pressure. The patient grew very deeply jaundiced, and suffered much from itching of the skin and drowsiness. The bowels were constipated and the stools were clay-colored. Small quantities of the simplest liquid food caused nausea and distress.

In this condition he remained for about four weeks.

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[1] Read before the Boston Society for Medical Improvement, March 28, 1892.

The intensity of the yellowing of the skin varied, and the fæces showed the presence of bile at times. All food and medicine by the mouth seemed to cause distress and an increase of the icteric symptoms. The bowels were moved by salts and the occasional use of minute doses of calomel. The temperature and pulse remained at about normal. Rectal enemata were given and were well borne. The patient complained, toward the end of the first month of his confinement to the bed, of a dull ache in the epigastric region toward the left side. On examination, a somewhat doughy mass, tender to pressure, was found. It lay below the stomach and a little above the umbilicus, and extended across the median line toward the left side. It was somewhat movable and transmitted the pulsation of the aorta. It was at first thought to be impacted fæces in the transverse colon, but it could not be dislodged by large injections of water.

About the first of February, a month after the beginning of the attack, the skin became much clearer, the urine became normal in color, and the patient showed considerable improvement. This condition lasted for about ten days, when the discomfort in the epigastric region increased to pain, and the patient began again to show signs of fresh obstruction to the escape of bile. The condition, however, seemed to be a repetition of that which had frequently occurred in the preceding month. The pain was not severe enough to call for opiates. He was troubled as before with indigestion. The temperature was normal and the pulse only a little accelerated. The abdomen was not distended, and the bowels had moved with the use of mild cathartics. Two or three days later he had more epigastric pain, and the cathartics did not act. He took liquid by the mouth fairly well.

Four days before his death he became very dull and at times a little delirious, but could be easily roused. The temperature rose to 99.5°. It was thought that the cerebral symptoms might be due to poisoning from the absorption of bile. Repeated efforts were made to move the bowels. Calomel and repeated small doses of sulphate of magnesium were given. They produced no effect. The bowels gradually became distended. The temperature rose each day a little, not, however, becoming higher than 101.5° until the evening of his death. The pulse rose only slightly, being on the day of his death between 90 and 100. There was no active vomiting. The stupor continued until his death.

An autopsy was made by Dr. W. F. Whitney thirty hours after death, and showed the following results:

Body of a man of large frame; moderate development of adipose tissue; general yellowish discoloration of the skin.

Head not opened.

Thorax: heart of normal size; valves and cavities normal; muscular substance slightly opaque, with a marked yellowish tinge.

Pericardium: nothing abnormal noticed.

Pleural cavities normal, and contained a slight amount of yellowish serum.

Lungs contained considerable dark blood and frothy fluid, especially in the lower lobes. Otherwise not remarkable, except for a yellowish color.

Abdomen: Peritoneum injected, and between the coils of the small intestines a little soft coagulum of lymph.

Intestines moderately distended with gas, otherwise nothing abnormal noticed.

Kidneys slightly opaque, of a yellowish tinge, of normal size.

Liver somewhat reduced in size. On section, lobular regions distinct, marked yellow color. Gall-ducts dilated. Slight increase of interlobular connective-tissue. The hepatic duct was dilated to the size of a lead-pencil, and its walls thickened throughout its entire length as well as the papillary portion of the intestine. No gall-stone nor other concretion found; nor was there any evidence of ulceration of the mucosa, which seemed slightly thickened. From the point where the cystic duct joined the common duct, it could be followed about an inch, and ended blindly in a dense mass of connective-tissue lying in the fissure of the gall-bladder, and to which the large intestine was adherent by moderately dense adhesions.

Pancreas was of normal size. Its duct opened into the intestine at two points. One was at the normal situation, just below the bile duct, by a somewhat dilated and tortuous canal, soon joining the main duct in the head; and the other, by a fine, separate papilla, about an inch above the first mentioned. The mucous membrane of the duct presented nothing abnormal, and contained a little slimy fluid. The parenchyma of the gland seemed a little homogeneous at the head, otherwise nothing abnormal noticed by the eye. In the interlobular fat tissue were round, dirty-white, opaque spots, varying in size from a pin's head to a small cherry. These were found quite abundantly in the fat tissue at the root of the large intestine where it lies in close relation to the tail of the pancreas. Also a few minute, scattered points in the fat of the omentum; these latter were distinctly surrounded by a reddened zone.

Diagnosis: — Obliteration of the gall-bladder, dilatation of the common and hepatic ducts, general icterus, disseminated fat necrosis, acute peritonitis.

Microscopic Examination. — In the midst of the area of fat necrosis the tissue was changed into an amorphous mass, uncolored by any of the ordinary stains. Around this was a narrow zone of amorphous material which stained diffusely with the nuclear stains; and passing into this was an irregular zone of small round cells. Preparations stained with Löffler's blue, showed numerous minute points among the round cells, but having neither a sufficiently characteristic form or grouping to warrant calling them bacteria. The centres of necrosis were also found between the lobules of the pancreas; but there was no gross or microscopic change that would point to an inflammation of that organ or its ducts. The examination of the cicatricial mass from the fissure of the gall-bladder showed simply dense connective-tissue, with scattered areas of small round cells.

Summary. — From the anatomical side the case is one of chronic inflammation of the gall-bladder, with its obliteration and dilatation of the common and hepatic ducts. With this is associated disseminated areas of fat necrosis of inflammatory origin, causing general peritonitis. There was no evident disease of the pancreas, which has generally been regarded as standing in a causal relation to fat necrosis.

Professor R. Koch, of Berlin, has of late been incapacitated from work and now there is reason to fear that the condition of his health is such as to preclude the resumption of his duties for some time to come.

FATAL HÆMORRHAGE FROM THE FEMORAL ARTERY CAUSED BY A SLOUGHING INGUINAL ABSCESS.[1]

BY JOHN HOMANS, M.D.,
Visiting Surgeon Massachusetts General Hospital; Instructor in the Harvard Medical School, etc.

THOMAS C., thirty-seven years old, entered the Massachusetts General Hospital March 21, 1892. He was brought in with Dr. W. B. Fiske standing over him and compressing the left femoral artery at the groin; but the bloody clothing showed that the pressure was not completely successful. His lips and cheeks were blanched. He was restless, thirsty, and a cold sweat was standing all over his body. His pulse at the wrist was intermittent and barely perceptible, and his extremities were cold.

The history, as given by Dr. W. S. Dunn, was as follows: Patient denied any venereal taint. About November 26, 1891, was noticed a red, inflamed mass in the left groin, which grew and softened and became tender, but which the patient would not allow to be opened.

December 8th. The abscess broke, and the opening was somewhat enlarged by Dr. Dunn. January 15, 1892, a slough, the size of the little finger, came out: no hæmorrhage followed. Patient would not remain quiet, but continued to carry on his business, that of an active broker.

March 19. Some bloody oozing took place, and this was thought possibly to have been occasioned by a fall.

March 21st. At 11 A. M., marked oozing of blood, quite free. Patient made pressure over the abscess, and sent for surgical aid. Soon the bleeding became so free that packing did not stop it, and he was sent to the hospital, Dr. W. B. Fiske compressing the artery during the journey.

Operation: Patient was etherized, and the pad taken from over the abscess. A stream of blood poured out as large as an ordinary lead-pencil, and bringing with it a large, black, offensive clot. Dr. Homans at once caught the bleeding vessel with his fingers, enlarged the wound, and put on two hæmostatic forceps above and below the opening in the artery. The artery was then tied with silk on both sides of the hole. No more hæmorrhage occurred. The abscess was emptied of clot, and stuffed with iodoform gauze. The anterior half of the femoral artery, just below Poupart's ligament to a point about a quarter of an inch above the origin of the profunda, was entirely gone over a space about three-quarters of an inch in length. Enemas if brandy, digitalis and black coffee were given, but the pulse was in such poor condition that transfusion of a warm salt solution was made into the right median basilic vein to the amount of nearly two pints. The pulse came up fairly at first, but did not retain its strength. Stimulants, such as brandy, carbonate of ammonia, digitalis, etc., were given and at 10 P. M. a pint of salt solution was put into the left median basilic vein. The pulse came up as before, but only remained strong for a few hours.

March 22d. Patient more comfortable, but thirsty, sweating, and with cold extremities. The pulse is felt at times, and then is lost. Consciousness perfect. A line of gangrenous demarcation is forming in the left thigh, just above the middle; below this line the limb is cold and blue, and sensation and motion are both absent.

March 23d. Patient was delirious. Through the day, the pulse became and more imperceptible; and at 8 P. M. he died. No autopsy was allowed. The piece of artery, about two inches long, was removed, and was found to be tied about half an inch above the origin of profunda, and a couple of inches higher up at a point just beneath Poupart's ligament. Such a rare occurrence as fatal hæmorrhage from a sloughing inguinal abscess seems worth recording. There was nothing in the appearance of the artery to suggest any traumatic injury.

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[1] Read before the Boston Society for Medical Improvement, March 28, 1892.

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TWO CASES OF RELAPSING APPENDICITIS; OPERATION BETWEEN ATTACKS; CURE.[1]

BY JOHN HOMANS, M.D.,
Visiting Surgeon to the Massachusetts General Hospital, etc.

PHILIP P., a peddler, single, entered my service at the hospital, March 1, 1891. He had always been well till eighteen months before his entrance, when he had an attack of well-marked appendicitis. At that time he had intense pain and vomiting, and remained in bed five days. Since that time he has had five attacks, the last one ten days before entrance, and he got out of bed to come to the hospital. His appetite has returned, and he complains bitterly because he is restricted to a liquid diet preparatory to the operation. His bowels are moving naturally without pain, and his temperature is normal. On inspection, no swelling nor distention is seen. On palpation, more resistance is felt in the right iliac region than in the left, and a tolerably well-defined tumor, the size of a hen's egg, is felt; this tumor extends over the brim of the pelvis, and is elastic and tender.

Operation, March 6, 1891. One-fifth of a grain of morphia was given subcutaneously before etherization. An incision was made over the tumor, three and a half inches long, midway between the anterior superior spine and the umbilicus. The omentum was adherent to the parietes. On separating the omentum about a drachm of pus ran out, and a little ascitic fluid. The tumor, about the size of a hen's egg, was separated from its adhesions, and the cæcum and ilio-cæcal junction were made out. When this tumor, consisting mostly of omentum, was unrolled, the appendix was found wrapped up in a piece of gangrenous omentum and bent upon itself. The omentum was ligatured and cut away, and the appendix, about two and a half inches long, was ligatured close to its origin, and removed. The peritoneum of the stump was turned inwards, and secured by two fine silk sutures. The wound was closed without drainage. In about three weeks the wound was healed, after some suppuration.

The patient called at my office May 3, 1892, in perfect health and with no hernia.

CASE II. Boy, eighteen years old. First attack in February, 1891. Pain, vomiting, etc. Treated by Dr. Benjamin Cushing of Dorchester; first by opium, and later by enemata. Second attack, March 1st; lighter. Third attack, July 15th, when I saw him with Dr. J. S. Greene, of Dorchester. Attack came on in the evening, after a long day's hunting followed by a very hearty supper. Pain and vomiting were both severe. Treated by morphia, subcutaneously, at first.

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[1] Read before the Boston Society for Medical Improvement, March 28, 1892.

Attack lasted about a fortnight; and the pain for the first few days was acute. I think no tumor was felt during any of the attacks. Fourth attack, August 20th: same as before. Treated by salines. From this time on had constant soreness and discomfort and did not feel like making any exertion and gave up going to school. Fifth attack, November 18th. Treated by Dr. Cushing with rochelle powders and enemata. Sixth attack, January 9, 1892, when I saw him again, this time with Dr. H. P. Jaques, in the absence of Dr. Cushing. Pain severe. Subcutaneous injections of morphia. The boy's life for the last six months had been one of constant dread in anticipation of attacks. He could not tell when pain set in whether a regular seizure would follow or not. He had given up going to school and had abandoned all his usual occupations. He was very much pleased at the prospect of having an operation done which promised relief.

Operation at St. Margaret's Home, February 4, 1892, in the presence of Dr. Cushing, and assisted by Dr. J. Homans, 2nd. Appendix reached almost as soon as abdomen was opened. No adhesions; no inflammation; everything normal, except the thickened and stiff appendix. The mesentery of the appendix, two and one-half inches long, was tied off, and three and three-fourths inches of the appendix was removed, close to the cœcum. The wound healed by the first intention. The appendix was half an inch thick at its largest part, and was filled with a dark-green, thick, inodorous fluid. No foreign body was found. Dr. Whitney reported the specimen as one of chronic catarrhal appendicitis, with great thickening of the mucous, and to a lesser degree, of the muscular coat.

The boy has been perfectly comfortable since his recovery from the operation.

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OBSTRUCTION TO LABOR THREATENED BY A DERMOID CYST OF THE OVARY, WITH A LONG PEDICLE; OVARIOTOMY: RECOVERY.[1]

BY JOHN HOMANS, M.D.,
Visiting Surgeon to the Massachusetts General Hospital, etc.

In January, 1892, I saw, with Dr. L. F. Cliff, Mrs. M., thirty-eight years old, the mother of ten children. Mrs. M's health had generally been good, except for occasional attacks of severe pain in the epigastrium running through to the back, accompanied by vomiting and lasting about twenty-four hours. These attacks had been irregular, and last summer were absent for five months. Pregnancy has made no difference with regard to them. She has never passed a gall-stone, nor has she been jaundiced.

On examination, I found a hard, movable tumor in Douglass's space, about the size of a large, flattened orange. Dr. Cliff told me that the tumor, during the last four years, had threatened to prevent labor by getting in front of the uterus. I could not say definitely whether the tumor was fibroid or ovarian, but it evidently had a very long pedicle.

I removed it by abdominal section, on March 2, 1892, in the presence of Dr. Cliff and of Dr. Baker, U. S. N., and assisted by Dr. J. Homans, 2nd. The tumor proved to be a dermoid one, of the left ovary, very movable, and hanging like a ball on a string. It was very smooth, and slipped away from my clutch very easily. The pedicle was nearly six inches long. The cyst was tightly stuffed with hair and sebaceous material, and contained bone and teeth. Recovery was rapid.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 3, page 67.)

RUPTURE OF THE THORACIC DUCT.

Eyer,[55] has reported the case of a railway brakeman, who, while engaged in work, was severely squeezed. Right-sided pneumonia subsequently developed. On the seventeenth day after the injury, evidences of deep-seated suppuration were apparent near the anterior superior spine of the right ilium. An incision disclosed a fistulous tract, from which emanated a discharge having a fæcal odor and appearance. In the course of a few days the offensive odor disappeared. The discharge was now opaque and milky. An intestinal fistula was diagnosticated. Emaciation progressed with extreme rapidity. Thirty-eight days after the reception of the injury the patient died. At the autopsy an opening was found in the thoracic duct at the level of the diaphragm.

THE OPERATIVE TREATMENT OF SPONDYLITIC PARALYSIS.

Kraske, since 1889, acquired considerable experience in this method and its results. He reports [56] less favorable results than is claimed for the procedure by others, especially Macewen. He claims, except in those rare cases where the paralytic symptoms are due wholly to displacement of the vertebral column, the disturbances of function in spondylitic paralyses are due to an extension of the tuberculous process from the bone into the epidural space. Here the exudation either directly compresses and causes anæmia of the cord or causes, by obstruction of the blood and lymph-vessels, stasis and œdema in the spinal medulla. In both cases the disturbance of circulation is wholly mechanical by diminished space. The disturbance (circulatory), when not marked, can last a long time without causing permanent changes in the cord, and recovery is possible. But commonly, sooner or later, marked degeneration of nerve fibre, softening, sclerosis, ascending and descending degeneration ensues. Rarely the tuberculous process extends to the dura and even the cord, then usually just before death. In no case, Kraske thinks, can they be regarded as the primary cause of the paralysis. Any operation to remove mechanical pressure by epidural exudation is admissible and of value. The gradual development of functional disturbance of nerve-roots origin indicates such pressure, rather than compression from displacement of vertebræ. In such cases (pressure from exudation), the question of operation is not considered till after proper mechanical treatment for weeks or months has failed to relieve the condition or prevent its increase. Operation only removes the cause of pressure and relieves the symptoms. It does not cure the original disease, since that is usually situated in the centre of the vertebræ. In four cases of Kraske's, three patients were relieved; one died from progressing decubitus.

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[1] Read before the Boston Society for Medical Improvement, March 28, 1892.

[55] New York Medical Record, August 1, 1891; Medical News, September, 1891.

[56] Arch. f. klin. Chir., 1891, vol. xli, p. 381.

He concludes with reference to such cases that, in all cases where caries of the arch has advanced so as to comprise the contents of the canal, unfortunately the rare cases, an operation is indicated. But in the ordinary form with kyphosis such procedure is indicated only when, in spite of appropriate treatment, the paralytic symptoms are increasing and the bladder and rectum are involved. The cystic affection of itself not only introduces a series of complications sufficient to cause death, but shows that the cord is seriously compressed; and such stasis is liable to result in irreparable degeneration. The diagnosis of an epidural exudation Kraske considers the necessary indication to operate.

THE BACK IN RAILWAY SPINE.

A careful record appears of eight cases of railway spine. F. X. Dercum [67] and the writer believe that the symptoms can be grouped as follows: (1) those due to the physical condition of the back; (2) the symptoms of functional derangement and asthenia; (3) psychic and hysterical symptoms.

To the first group belong, first, pain on deep pressure; second, pain on motion and transmitted shock; third, muscular spasm and rigidity; fourth, muscular weakness.

He states that the pain elicited by pressure, motion or shock, is evidently the result of a deep-seated injury either to the ligaments of the spinal column, or to the muscles; probably to both. Practically it is impossible to differentiate between the two, nor is it important. We should remember in thinking of the muscles that they are normaly in a state of tension, especially when the trunk is erect. Indeed the physical condition presented is that of a bow with many strings. It is not difficult to understand how, under these circumstances, jars and blows should cause serious though perhaps minute strains of the muscles, especially in their tendonous insertions, and these, as we know, are especially numerous. Further, it is not impossible that at times even the intravertebral cartilages and the joints formed by the articular processes, may be the seat of sprain.

"To muscular spasm and rigidity are practically assigned the same value which is assigned to the muscular spasm observed in a sprain, a dislocated or a broken limb. The muscular weakness resulting occasionally in lordosis is to be ascribed to the general weakness resulting from the shock, and also to the direct effect of the trauma upon the muscles themselves."

He further states that "Careful application of the various tests for eliciting pain in spasm cannot fail to evoke a reply if trauma be really present."

ON THE THERAPEUTIC VALUE OF NERVE STRETCHING.

Dr. Archimede Mischi [68] comes to the following conclusions:

(1) Nerve-stretching constitutes, by its manner of action, a special therapeutic process. This influence is felt even as far as the nervous centres, and in the medulla oblongata in particular. A paralysis of sensation, the relative conservation of motility, is produced.

(2) Nerve-stretching is an efficacious method of treatment in those cases in which the lesion is peripheric; hence, it is most useful in the treatment of the various neuralgias, tic douleureux, spasms, traumatic contractures and reflex epilepsy.

(3) It must be condemned in tabes dorsalis and various affections of the medulla oblongata, in which it is never successful, often injurious, and, finally, sometimes fatal.

(4) It offers but the slightest probability of success in the treatment of tetanus.

METHYL-VIOLET IN THE TREATMENT OF NON-OPERATIVE CASES OF NEOPLASM.

Prof. v. Mosetig-Moorhof [59] has endeavored to control the growth of malignant neoplasms by the injection under antiseptic precautions, of solutions of methyl-violet (1 : 1000, 1 : 500, 1 : 300) into the growth till the pathological tissue is thoroughly impregnated with the coloring fluid. He thinks that a much stronger solution can be used without injurious effects. The diseased tissue is apparently alone affected. Enclosed tumors do not disintergrate, but undergo a retrograde metamorphosis and contract. Open ones, on the contrary, secrete profusely, and diminish in size more rapidly. The injection is repeated every second or third day. The writer had not at time of publication effected any cures but had caused a marked diminution in the size of the tumors thus treated.

CONTRIBUTION TO THE KNOWLEDGE OF SARCOMA.

In a very interesting article, Coley [60] reports a case of round-celled sarcoma of the metacarpal bone, which he treated by amputation of the forearm about four months after the observation of the first tumor. In a little more than a month there was general dissemination of the disease, and death followed six weeks after the operation.

The chief characteristics of subperiosteal sarcoma are: there is usually a history of traumatism; the pain precedes the tumor and remains throughout the disease; the tumor is usually fusiform and seldom encapsulated, there being rapid infiltration of the surrounding tissue; it increases rapidly in size; the skin is discolored in the later stages; there is a slight elevation of temperature and an abnormally rapid pulse; and there is very little tendency to ulceration.

After citing Brune's famous paper upon the curative influence of erysipelas upon sarcoma and carcinoma, Coley reports three cases of sarcoma in which inoculations of pure cultures of erysipelas streptococcus were employed. These inoculations were made repeatedly, and were followed by local reaction; the tumor seemed to be distinctly lessened in size. No cures are mentioned. To the five cases collected by Brune, Coley has added six others, in addition to the three he inoculated; six were cured, and two were greatly improved.

SKEWER AMPUTATION OF THE ENTIRE UPPER EXTREMITY.

McLeod [61] reports a case in which a very large tumor was successfully removed, the hæmorrhage being checked by a combination of skewers and an elastic cord. The patient on whom the operation was performed was suffering from a large globular tumor of three months' standing, placed beneath the right deltoid muscle, which was tightly stretched over it. The circumference of the limb at the shoulder was nineteen inches. The acromion process could not be felt. The entire axillary space was filled. The scapula was evidently implicated, and no movement existed at the shoulder-joint, the scapula and clavicle moving with the tumor. The outer end of the clavicle was lost in the mass. The overlying skin was not infiltrated or broken. This growth was evidently a sarcoma.

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[67] American Journal of the Medical Sciences, September, 1891.

[68] Il Raccoglitore Medico, December 10, 1890; Annals of Surgery, November, 1891, p. 400.

[59] Wien. Med. Presse, 1891, xxxii, 6.

[60] Annals of Surgery, Vol. xiv, No. 3. American Journal of the Medical Sciences, November, 1891, vol. v.

[61] Lancet, No. 3, Vol. ii, 1891; American Journal of the Medical Sciences, December, 1891, Vol. cii, No. 6.

After chloroforming the patient, two punctures were made, one in the floor of the axilla, and the other a little above and behind the top of the shoulder. A stout packing-needle, about eighteen inches long, was passed from below upward through the cavity of the axilla, behind the vessels and nerves, within the girdle of the shoulder bones, and, finally, was made to emerge through the second puncture. A second needle of the same size was entered at the lower puncture, directed transversely beneath the scapula, and made to emerge behind the posterior or vertebral border of the bone. A strong India-rubber cord was wound, figure-of-eight fashion, around the projecting ends of these needles, encircling the part with a tight elastic hoop, which was held in position by these skewers. A circular incision was now made about two inches to the distal aspect of these loops. The clavicle was divided at the junction of the middle and outer third, thus exposing the plexus and vessels; the latter were isolated, and a clamp forceps was put on them for additional security. The attachments of the scapula were then rapidly divided and the extremity was removed. The axillary artery was then secured, the elastic cord gradually loosened, and the vessels, as they spurted, were secured. The patient was severely shocked, but made a prompt recovery.

LONGITUDINAL INCISIONS IN RESECTIONS OF THE HAND AND FOOT.

This method of operating is again brought to notice by a good *résumé* of Studsgard's article.[62] It is claimed the after-results are much better, since the impaired function of the toes from the adhesion or non-union of tendons which is often the result of the transverse operations is avoided by this method. The foot is split antero-posteriorly by an incision between the second and third toes, dividing the ligaments, opening the articulation between the middle and external cuneiform bones. This allows the first and second toes, with their respective cuneiform bones, to be moved inward, and the third, fourth and fifth, with the external cuneiform and cuboid outward, exposing the mid-tarsal region in a satisfactory manner, and rendering easy the removal of carious or tuberculous tissues or bones. The only tendon severed is that of the peroneus longus, in the sole of the foot.

Studsgard has thus removed the four inner metatarsal bones, all the cuneiform, and the os scaphoid. He claims priority for this operation, and recommends the same method for the hand, and considers it preferable even to Lister's, which although the best of the previously advocated longitudinal incisions, still does not give so much space nor allow always the opportunity to control hæmorrhage easily if the deep arch is divided. He makes his primary incision between the third and fourth metacarpal bones, and continues it between the os magum and cuneiform. This opens the carpus widely. It is easy to avoid the median nerve, except the branch to the radial side of the fourth finger. Both superficial and deep palmar arches are divided.

TOTAL RESECTION OF THE CARPUS BY THE DORSAL METHOD: METALLIC SUTURE OF THE BONES OF THE METACARPUS WITH THOSE OF THE FOREARM IN THE TREATMENT OF THE FUNGOUS SYNOVITIS OF THE CARPUS.[63]

Dr. R. Gritti, Italy, proposes a method of performing total resection of the carpus in fungus of the carpal bones. The technique of the operation is as follows:

The hand is washed carefully and rendered aseptic, the patient anæsthetized and an elastic ligature applied above the elbow. Two lateral incisions are made on the dorsum of the hand, one on the radial side, corresponding to the border of the second metacarpal bone, and the other on the ulnar side. They should extend from two centimetres above the lower end of the radius and ulna to two centimetres beyond the heads of the metacarpal bones. These two incisions are then united by a central one running across the dorsum of the hand and forming with two preceding ones an H. This third incision severs the skin, the tendons of the second, third, fourth and fifth fingers from the extensor communis digitorum, that of the extensor proprius indicis, and extensor minimi digiti, and the nerves and veins of that region. The extensor longus pollicis is not cut, the tendon being drawn aside by means of a hook. The radial and ulna muscles are cut and left to themselves. This done, the severed tendons are separated into groups: first, the tendons of the extensor proprius indicis: secondly, those of the extensor communis digitorum of the second, third, fourth and fifth fingers; and thirdly, that of the extensor proprius minimi digiti. Sutures are drawn through their ends in order that they may later be reunited without mistake. The ends of the radius and ulna are then sought for and sawed across slightly above the epiphysis, the saw being held a little more removed from the radius than the ulna. This must be done with great caution, in order not to wound the arteries and tissues beneath. The metacarpus is then cautiously detached in one single mass, care being taken not to open the sheath of the flexors or impinge upon the two radiopalmar arteries and the two palmar arteries. The pisiform and the unciform bones may be either enucleated or cut in two. On arriving at the trapezium the knife should be kept well up against the carpus in order not to open the articulation of the trapezium with the first metacarpal, but be thrust in between the trapezium and trapezoid bone. Then the thumb with the carpometacarpal articulation remains undisturbed. Finally, the carpus is cautiously detached from its attachments below as far as one centimetre above the carpo-metacarpal articulation; the heads of the second, third, fourth and fifth metacarpal bones are sawed straight across and the carpus removed in one piece. The attending hæmorrhage is usually but slight, as the palmar vessels remain uninjured. The surface of the wound is cleansed and, if any sinuses or articular fungosities be present, they are curetted. The surfaces of the resected bones are then placed in contact and united by two metallic sutures, the ulna being joined to the fourth metacarpal, and the radius to the second metacarpal bone. The ends of the tendons are then brought together and joined: first, the tendon of the extensor indicis, then those of the extensor communis digitorum, and, finally, that of the extensor minimi digiti. The tendons are not joined by simply bringing their cut surfaces together but by overlapping the ends by two centimetres. In this manner they are somewhat shortened, as the hand has lost some six centimetres in length. The wound is then closed, sutured and drained. After an antiseptic dressing has been applied the forearm is placed upon a well-padded splint, while the hand is elevated by a cushion. The operation generally lasts an hour and does not present any especial difficulties. After the operation there is, as a rule, tactile insensibility of the dorsum of the hands and fingers. The writer then gives the details of three cases operated upon, more or less successfully, by his method, and makes the following deductions:

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[62] Mynter: Annals of Surgery, 1891, vol. xiv, 389.

[63] Annals of Surgery, December, 1891. Gazetta Degli Ospitali, No. 12, 1891.

(1) The blood-supply of the hand is not disturbed, as the arterial trunks running on the palmar surface of the hand are not cut.

The movements of extension of the fingers make their appearance generally about the tenth day. The movements of flexion are uninfluenced, although the hand is shortened about six centimetres.

(3) The tactile sensibility, which is destroyed by the operative procedures, begins to be restored even before movements of the fingers are possible. It first appears in the cutis of the fingers and progresses up the hand. In one case it appeared ten days after the operation.

(4) Bony ankylosis probably does not take place, but rather is a pseudo arthrosis formed, which is more to be desired, as the freedom of movement of the hand is thereby greater than if an osseous fusion with immobilization should take place.

In the first two cases operated on, there resulted an abduction of the hand, due to sawing the lower ends of the radius and ulna straight across. Hence, the writer recommends holding the saw somewhat obliquely, in order to remove more from the head of the radius than from the ulna.

(To be continued.)

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

O. G. SEARS, M.D. SECRETARY.

Regular meeting, Monday, March 28, 1892, the President, Dr. Frederick I. Knight in the chair.

PATHOLOGICAL SPECIMENS.

Dr. J. Homans showed a Dermoid Cyst, a large Multilocular Ovarian Cyst and a Fibroid Tumor of the Uterus from the same patient, two Appendices, and a Ruptured Femoral Artery.[1]

Dr. F. B. Harrington reported a case of

DISSEMINATED FAT NECROSIS.[2]

Dr. J. Homans: I saw this gentleman a few hours before his death, late in the evening with Dr. Harrington, with a view to the possibility of doing laparotomy for his relief. He was moribund, stupid, but responded to our request to put out his tongue, but he did not speak intelligently, and his abdomen was considerably distended. From the condition of the man and the history, as I got it, I could see no definite good to be accomplished by laparotomy. It did not seem to me there was any gall-stone to be removed, any obstruction to be remedied, and I decided that a laparotomy would be not only useless but would hasten his death by a few hours. In fact, I think he could hardly have stood taking ether. Dr. Harrington and I thought perhaps this distension of the abdomen might account in part for his shallow respiration, although we were strongly of the opinion that he was approaching his end, so we aspirated the abdomen and drew off considerable gas with more or less collapse of the abdomen. That was all my connection with the case.

Dr. R. H. Fitz: I have seen some specimens from this case, which, as Dr. Harrington has read the history, suggest a diseased process connected with the gall-bladder or the biliary tract. So far as the relations to the pancreas are concerned, it may be said that the only evidence thus far attained is the disseminated fat necrosis. It might, perhaps, be considered, in the lack of other evidence, that the presence of these foci of fat necrosis in the pancreas, with inflammatory areas around them, is evidence of pancreatic disease, although in the cases that I have examined with reference to that relation there have also been found in the pancreas other evidences of inflammatory process than those which immediately surround the foci of necrosis. The symptoms of this case are rather more suggestive of progressive cholæmia than they are of the collapse which often occurs in pancreatic disease. Attacks of acute pancreatitis in most of the cases thus far recorded are associated with symptoms of severe collapse lasting several hours. Symptoms of peritonitis then often occur, this case cannot be considered as offering very strong evidence of the occurrence of fat necrosis without pancreatic disease, in the light of the fact, that, so far as we know anything about these inflammatory forms of fat necrosis, they are usually associated with attacks of pancreatitis, and their presence in the pancreas in this case may be regarded as evidence of an interstitial pancreatitis.

Dr. F. C. Shattuck: I had the privilege of seeing this patient twice with Dr. Harrington, the first time about five or six days before his death. It seemed a very clear case of gall-stone trouble, and the man was in very fair condition at the time. There seemed to be no reason at the time I saw him why he should not do well and recover just as in previous attacks. The only thing was the long continuance of the attack; and the question of possible operation in the future was mentioned in the discussion of the case by Dr. Harrington and myself. The next time I saw him was, I think, the day before his death, and then he was semi-comatose, and abdominal distension had come on. The symptoms were very much more grave. The man was evidently in a most critical condition, and the question which occurred to me and about which we conversed was whether possibly some internal ulceration was going on, whether a gall-stone was not stuck in some place and setting up trouble. The possibility of surgical interference was discussed, and it did not seem to us that we knew exactly what to do, and in any event the man was in such a condition it did not seem likely he would recover. In that opinion it seems

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[1] See pages 86 and 87 of the Journal.

[2] See page 81 of the Journal.

Dr. Homans who saw him afterwards concurred. The pancreas did not occur to me as a possible element in the case. It was only after I saw him the second time in thinking over the case it seemed to me it might be one in which pancreatitis had come on secondarily to the trouble connected with gall-stones and I believe Dr. Homans mentioned such a possibility when he saw him. There were no gall-stones found after death, but the gall-bladder was obliterated and it seems in the highest degree probable that cholelithiasis was at the back of his old symptoms. He had disseminated fat necrosis, but there was not much of it. It was very limited. The amount of peritonitis was very limited, and it seems to me the cause of death is not very clear. Of course an obvious explanation is cholæmia, but the jaundice was very moderate. The great bulk of the bile was finding its way by the natural passages. The jaundice was nothing like what we see in many cases without any urgent symptoms of any kind, and I must say I find it rather difficult to explain the cause of death in the light of the revelations of the autopsy.

Dr. W. F. Whitney: I agree with Dr. Fitz as to the association so often found. But I think this case should go on record as one in which no appreciable lesion of the pancreas was found, thus calling attention to the possibility of such a necrosis being associated with other conditions than that of the pancreatic disease, unless we are ready to accept that as a sign of such disorders.

I would also mention a case of chronic interstitial hepatitis with ascites where there were areas of fat necrosis, in which the appearances microscopically were the same as in this case, and yet no disease of the pancreas was to be recognized. It is difficult to reconcile the recurrent attacks of jaundice with the condition of a widely dilated and unobstructed gall-duct, as found at the autopsy. The possibility of a spasmodic stricture of the hypertrophied muscular coats, causing both retention and pain, suggests itself as an explanation. The entire obliteration of the gall-bladder is also a curious fact; and it seems strange that in the four years over which the symptoms extend it could have been accomplished so completely.

Dr. Harrington: I did not find gall-stones in the fæces I examined. I did not strain the fæces, but they were examined very carefully, and I think no gall-stones have been discovered. I think Dr. Brechin saw the patient in quite a good many of these attacks, and I should like to hear from him.

Dr. Brechin: I do not know that there is anything I can add. I attended the patient quite a number of times for these pains. It generally required about a grain of morphia to relieve him. I will state that in April last, at which time he had a severe attack, there was a well-defined tumor over the region of the gall-bladder; and Dr. Cabot who saw the case with me at that time was of the opinion that the gall-bladder was distended with gall-stones, and suggested the advisability of an operation after the patient had recovered somewhat. I never found any gall-stones in the fæces, but it was always my belief that the case was one of gall-stone trouble.

Dr. Fitz: One thing suggests itself to me in connection with what Dr. Whitney said in reference to the relation of pain to spasmodic action of the bile-ducts. We could hardly imagine a persistent pain without obstruction; and when the obstructing cause was relieved, the spasm would be likely to subside. In the report of the autopsy a fact is mentioned, it seems to me of importance, in connection with these attacks of jaundice and with the probability of there having been obstruction; this is that the gall-ducts extending into the liver were found dilated and thickened. There was also found an opaque fluid in certain of these bile-ducts, and, furthermore, a connective-tissue growth, which extended into the liver following along Glisson's capsule. These evidences of more or less chronic inflammation of the bile-ducts and fibrous tissue around them were associated with a contracted liver, so that it is quite possible that this may have been one of those cases of so-called biliary cirrhosis, existing for a long time, with recurring attacks of inflammation extending into the bile-ducts of the liver.

Dr. Harrington: How do you explain the considerable dilatation unless gall-stones had existed?

Dr. Fitz: An explanation would be found, in the first place at least, in the dilatation of the hepatic duct outside of the liver, giving evidence that there had been, at some time, obstruction sufficiently long in duration to give rise to dilatation. Even if the obstruction did not exist it is possible for a certain degree of dilatation to be associated with chronic inflammation of the ducts and consequent weakening of the wall. The liver was contracted, but the bile-ducts were dilated. I have observed, not infrequently, the common duct dilated, almost large enough to admit the finger, and no calculus present although there may have been one at some earlier period. It is not uncommon to find dilatation of the ureter in connection with chronic inflammation without there being an obstructing cause sufficient to prevent the escape of the urine, so that the dilatation of a duct is recognized as one of the results which may follow an inflammatory process.

Dr. Whitney: I do not think it was a case of biliary cirrhosis. The liver was contracted with slight thickening between the lobules, but not more than I have seen in almost all cases where there has been jaundice for any length of time.

Dr. Brechin: I should like to ask if Dr. Whitney thinks there could have been a rupture of the gall-bladder at some time.

Dr. Whitney: I have never seen that accident or the sequel of it. This had all the appearances of tissue, such as you get following any chronic inflammatory process, namely, dense fibrous tissue with scattered areas of round cells.

Dr. F. C. Shattuck: With reference to the finding of gall-stones. In cases where the symptoms lead us to suspect their presence and the negative evidence is the failure to find such stones, it seems to me that that negative evidence is not of much value. I have seen a good many cases of this nature, and I have seen very few in which gall-stones have been recovered in the fæces, even where careful search has been made, and the search must be extremely careful, for these stones are often small and tender, very easily broken up at times. I have come to attach comparatively little importance to the failure to find stones even when they have been carefully sought after.

Dr. Harrington: The appearance of the urine in this case was interesting. The urine within twelve hours from its being a very dark urine full of bile would at times appear almost normal, the rapidity of the change I had never before seen and did not know that it did occur.

DR. BRECHIN: I would like to ask Dr. Harrington if he thinks the previous attacks were owing to inflammatory processes or to the passage of gall-stones.

DR. HARRINGTON: It seemed to me that the man had had gall-stones. In the last attack it did not seem to me that the pain which was followed by increase of jaundice was due to obstruction from gall-stone, because it was transitory, and light, and I supposed that there might be obstruction from some other cause, as for example from inspissated bile. I would like to ask if that cicatricial mass which existed could have caused obstruction.

DR. WHITNEY: I do not see how it could have caused any obstruction at all.

DR. J. T. BOWEN read a paper on

THE PRESENT POSITION OF ELECTROLYSIS IN THE TREATMENT OF CUTANEOUS AFFECTIONS.[3]

DR. WHITE: I think the reader failed to record the credit of the introduction of electrolysis for the destruction of hair to the real originator of it. Dr. Hardaway merely borrowed it from his friend Dr. Michel, oculist, of St. Louis, who first used it for the cure of ingrowing lashes. Dr. Hardaway subsequently applied it to the destruction of hairs in hypertrichosis.

I should like to add to what the reader said of the effects of hypertrichosis upon women, that the evil influences are at times far more than those which result from confinement to the house. I think in some cases it produces a decided change in the mental condition, hyperchondriasis and other forms of mental disturbance, which have led in quite a number of instances in my knowledge to insanity.

I agree with nearly all the reader has said with regard to the destruction of hair by this operation; but my own experience has not been so favorable with regard to the exemption from scar. I do not consider that it is possible to certainly destroy very large hairs without some pitting in a considerable proportion of the cases. I think one is obliged to introduce the needle so far, to keep up the current so long, and to employ so strong a current, that pitting is inevitable in some cases. I never feel warranted in assuring a patient that such scarring may not follow. It seems at times also almost an impossible undertaking to destroy absolutely a very large growth of stiff hairs, in some parts. To my certain knowledge I have operated upon some follicles a dozen or twenty times, follicles which I have marked and seen the hair return after each attempt. But practically, as the reader states, one can depend upon it as sufficient to destroy the growth in nearly all instances; and if it be resorted to once in six months in these exceptional cases, the individual hairs which so often tend to return can be kept down.

With regard to the action of electrolysis upon hypervascular tissue, there is only one form which in my experience yields positively to this, and that is "spider-cancer," so called. There, it may be said never to fail. A single insertion of the needle for one-half minute is sufficient. In all other forms of enlarged vessels I have never obtained good success. You may make a temporary impression upon the separate enlarged vessels in some forms of rosacea; but if the vessels be very large, if they connect with deep feeders, you will see the vessels apparently obliterated for a time, again become pervious to the circulation, so that I have given up attempting to destroy such forms of angiomatous tissue.

In "port-wine mark" I never have been successful in permanently destroying the whole affected area. You may apparently mask and obliterate the surface supply of vessels. Even then you cannot destroy the whole of a large area thus fed, and although I have tried this in small areas, over and over again, and thought I produced scar tissue over the whole, I have never, I think, in a single instance completely obliterated this vascular tissue so that it did not eventually show again in some measure.

DR. NICHOLS: In connection with this subject of hypertrichosis I should like to call attention to the combination of barium sulphhydrate with zinc oxide applied in the form of thin paste recommended some years ago in the German journals as a depilatory and better known perhaps to the laity than to physicians, though by no means so efficacious as electrolysis. I have found it, under certain circumstances, of service as supplementary to that process, and especially in cases of patients going abroad or absent from home in summer. So far as concerns the removal of coarse, deep-rooted hairs, such as appear upon the chin, it should be understood that this mixture is absolutely valueless; but, on the other hand, it is certainly effective for the imperfectly-nourished, stub hairs loosely imbedded in the follicle which often recur in the place of the coarser ones removed by the needle; and it may also be applied to the denser growth of fine, shallowly implanted hair often abundant upon the upper lip where the use of the needle is not always practicable. I have found the proportion of hairs that reappear after removal by this paste variable, but always much greater than after electrolysis properly applied. As a general rule no irritation whatever is excited by this paste which may be safely used by patients themselves, and the hairs generally reappear in diminished quantity and vigor. In two instances, however, I have seen decided dermatitis produced in persons possessing apparently an idiosyncrasy toward the barium, and have since thought it prudent to use it in less than one-half the strength originally recommended. The modified formula is the following: —

℞ Barii sulphydrat . . . . ʒ ij.
Zinci oxidi }
Amyli pulveris } . . . . . . āā ʒ iij. M.

To be applied in the form of a thin paste, and removed as soon as dry.

DR. BOWEN: As to the production of scars in the removal of hair it seems to me it can practically be left out of account. I appreciate that occasionally there may be some slight pitting. I do not wish to say that I have had any better results in that respect than any one else. I am sure that the large majority of cases at least may be treated without the slightest scarring; that in a few very severe cases it may be very difficult and perhaps impossible to avoid slight pitting.

I want to ask Dr. Prince the number of cases of port-wine mark he has treated to base his remarks on. The cases vary a good deal and it has been proved over and over again that good results may be obtained occasionally in port-wine mark.

As to the positive pole I have tried it quite often but have not been able to see any special advantage from it. In port-wine mark I think I have tried it a few times. As to the use of a battery with high electro-motive force with a rheostat in the circuit, I tried that for nearly six months and finally gave it up. I do not question that the current is somewhat steadier, but it seems to me the variations are very slight and practically of no account. The shock to the patient in applying and taking off the current with this high electro-motive battery was in some cases exceedingly disagreeable.

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[3] See page 77 of the Journal.

Dr. Prince: I did not mean to convey the idea that I had unusual success with port-wine mark. I only meant that by this process I had produced a uniform result which had not been obtained by any other process, but which to my disappointment was not permanent. I had worked on an extensive case covering a large part of the face and which varied in different parts, giving me various conditions to work with. I have also tried it in a smaller case with success.

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Recent Literature.

The Etiology, Pathology, and Treatment of Diseases of the Hip-Joint. By Robert W. Lovett, M.D. Boston: George H. Ellis. 1891.

It is not every book, which as it comes before the public brings with it its credentials; but this work has this advantage, in that it bears the Prize of the Fiske fund. The writer has presented the position held at the present time by orthopedists in general in regard to this group of diseases, the compilation of the literature being thorough; and in this way the work is made valuable for reference. On the other hand, the author has in no way been satisfied to present this alone, but has inserted his individualism so well that it can be felt throughout the work, so that it is by no means a mere compilation.

The divisions of the book are made on a basis of the pathology of the diseases incident to this joint; and although all are considered, from the acute arthritis of infants to senile coxitis, including congenital dislocation and functional affections, the greater part is properly devoted to the tubercular osteitis in childhood. A valuable feature is the complete and careful description of the pathology of synovitis and osteitis. With so complete a pathology it would seem a pity that we could not have a more detailed symptomatology, as clinically it is of little value to have so thorough a pathological division if we are to be unable to recognize these divisions during the treatment of a case; yet to err on the side of too great care in these diagnoses is not to be criticised, and the precaution in making early and positive diagnoses of acute synovitis and osteitis is commendable, and cannot be too closely followed.

Much valuable information will be found in the part devoted to tubercular disease. The portion devoted to pathology is a clear description of the authoritative position held by observers to-day; but in the portion devoted to treatment, the writer draws more from his individual experience, and many hints of value are to be found. There is more, but little new to be added to the pathology, and in fact further investigation in this part could easily be spared, as it has relation to symptomatology, or at least until we can have a more intimate relation between the pathological and clinical sides. The writer's distrust of the principle of fixation is evident, although it is fairly stated, and the advantages of the method have been given recognition. The objections to the method of traction, both in its failure to secure fixation, and in its imperfect application, is an important feature, which the writer has not failed to give prominence, and while the detail may confuse the general practitioner who sees but few of these cases, and is in this respect of more value to the specialist, it serves as a warning to those who may be too much inclined to consider that the essentials of this treatment consist in the application of a splint which is capable of exerting a pull on the limb, and the detail to be of minor importance. But in connection with this, the writer has given prominence to the consideration of the faulty application of apparatus, a subject which of itself would make the work valuable.

Senile coxitis has received a generous slice of attention, as perhaps so untractable an affection deserves, and considerable hope is held out, with a long list of remedies and means to be tried, of which the probably most successful, but unfortunately often impracticable with many of these unfortunate patients, and which is wisely put at the last, is that of rest with good surroundings and travel. It is doubtful if much actual benefit is ever derived from any method which does not involve some one at least of these, and which is unfortunately denied to so many.

The book is forcibly written, and the reader is not allowed to lag in any part. The literature has been thoroughly consulted, and the full references give additional value. The material is carefully presented, and there are numerous excellent illustrations, very many of which have the distinction of never having appeared before in print. Altogether, the book must be placed among the best, if not the best, on the subject which we have seen.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.C.P., F.R.S., etc. Second edition, revised, and enlarged. Volume I, Diseases of the Nerves and Spinal Cord. With one hundred and eighty illustrations, including three hundred and seventy figures. 8vo, pp. xvi, 616. Philadelphia: P. Blakiston, Son & Co., 1892.

When the first edition of this work appeared we spoke of it as the best treatise on diseases of the nervous system in the English language. The present edition, however, far surpasses the old one. It is practically a new work; a hundred and fifty new pages have been added, and almost every page has been rewritten. If the second volume is to be enlarged proportionately the result will be rather overpowering to the average man; the work will contain nearly two thousand closely printed pages. New chapters have been inserted on injuries of nerves, brachial neuritis, malarial neuritis, beri-beri, pellagra, senile paraplegia, the peroneal type of family amyotrophy, ataxic paramyotone, and Morvan's disease. Other chapters have been wholly rewritten and greatly enlarged. Multiple neuritis, to which was devoted fourteen pages in the first edition, now fills fifty-three; the chapter on syringo-myelia is almost doubled. The chapter on neuritis is most elaborate and complete, and the defects of the treatment of the subject in the first edition have been removed. Some defects, of course, remain. The preliminary classification of disease is kept, although it is scarcely to be accepted. Some few omissions, too, exist; thus in the chapter on neuritis no mention is made of the typical delirium of alcoholic neuritis, nor is any mention made of the scoliosis of sciatica, or of Weir Mitchell's treatment by splint-rest and cold. The somewhat slighting way in which the writer speaks of the controversy over "railway spine" leads us to fear that the more general nervous conditions, such as hysteria, neurasthenia, and the obscurer scleroses, which may follow injury, may receive no attention in the coming volume; but his discussion of the traumatic cord affections is admirable. The work is a monument of astonishing labor and research, and we can repeat the praise which we gave to the first edition, with the further qualification that we know of no work in any language that surpasses it. All who needed the first edition will need the present even more. The illustrations are unfortunately much the worse for wear. The book deserves new plates. The proof-reading, too, is defective. Many of the references are to the pages or illustrations of the first edition.

A Text-Book of the Practice of Medicine, for the Use of Students and Practitioners. By R. C. M. Page, M.D., etc. New York: William Wood & Co. 1892.

The author says that the chief objects in view in the preparation of the volume were, "to facilitate clinical instruction and enable both physician and student to obtain, in brief, the most practical as well as scientific view of the various subjects treated of in a work on medicine."

The book is a small octavo of 568 pages, including the index. Therapeutics receive comparatively more attention than pathological anatomy. The limits of the book are too restricted for a really satisfactory work on the Practice of Medicine. With the space he has allowed himself the author had perhaps done as well as another would have done, but we doubt the utility of this sort of book.

The Microspical Examination of Potable Water. By George W. Rafter, Member of the Rochester Academy of Science. Pp. 160. New York: D. Van Nostrand Co. 1892.

This volume represents the condition of progress of microscopical water-analysis up to the present year.

The first part, entitled "Qualitative Analysis," details the methods employed in studying the biology of drinking-water, including the modes of collecting and preservation of specimens.

The second part is devoted to the different methods in use for the microscopic examination of water, preference being given to the perfected Sedgwick-Rafter method.

The author gives due credit to Prof. W. T. Sedgwick, of Boston, as well as to the thorough work of the Massachusetts State Board of Health, from whose reports several tables are quoted illustrating the methods of analytical work as applied to the water-supplies of Boston and Springfield.

A bibliography of the subject is also presented.

In Paris recently four unknown persons bet among themselves as to which could drink the largest quantity of water. One drank twelve litres, another nine, a third seven. All three died a few hours afterwards; the fourth is seriously ill in a hospital.

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THE PATHOGENY OF CHOLERA.

The toxic theory of Professor Bouchard, as set forth in his book "On the Auto-intoxications," fairly well explains the symptomatology of cholera. He demonstrated as early as 1884, by experiments made with toxic substances found in the stools and urine of cholera patients, that the pathogeny of cholera may be referred to multiple intoxications.

Professor Bouchard has some doubts as to the fact of the common bacillus being the pathogenic agent of cholera. "The only serious argument," he says, "in favor of Koch's claim is the presence in the intestines of cholera patients of special micro-organisms which are not found in the intestines of healthy persons or of persons affected with other diseases. These micro-organisms exist often in considerable abundance, from the very first, and often to the exclusion of every other microbe in the digestive tube. Apart from this empirical ascertainment, which warrants only a presumption, all the other arguments, which have been alleged, are illusory.

The toxic alkaloids which Bouchard has extracted from the intestines and urine of cholera patients greatly exceed those ordinarily contained in fæcal matters. One of these which forms acicular crystals seems to have a special virulence, and to be identical with the "cholera poison" which Koch and Brieger have isolated from the intestinal contents of cholera patients, and which they believe to be generated by the comma bacillus. There is, however, no agreement as to what really are the soluble toxic substances secreted by the microbe of cholera. Bouchard affirms that the real virus is eliminated in the urine in appreciable quantities. In injecting into the veins of animals cholera urine, he has caused a pronounced cyanosis, collapse, albuminuria, anuria, cramps, and pale, yellowish or bloody diarrhœic evacuations, like those which characterize true cholera. In injecting the alcoholic extract of the urine of cholera patients, he has determined somnolence, albuminuria, diarrhœa and death in two days.

"There is," says Bouchard, "in cholera-urine a poison which I call the true cholera poison. I cannot chemically define it, I only know it by its physiological properties. I know not if it is fabricated by the sick organism or by microbes."

Bouchard's view, then, is that besides the primary infection there exists in the pathogeny of cholera a secondary intoxication, consequent on the infection. He thinks that the symptoms considered as characteristic of cholera are the result of this intoxication. To this we may attribute the cyanosis, the chilliness, the respiratory troubles, the hiccough, the special diarrhœa, the intestinal desquamation, the cramps, the dehydration of the blood and tissues, the albuminuria, the anuria. But very soon "there supervenes a new source of systemic intoxication superadded to the first, and this clinically expresses itself by intellectual torpor — by somnolence, apathy and coma. The respiratory rhythm changes, sometimes rising, sometimes falling; it is the rhythm of uræmia. The pupils are contracted, and become punctiform."

This is evidently a different symptom-aggregate from that of the initial period, and is due to another kind of poisoning; in other words, we have the clinical tableau of uræmia from excess of disassimilation and blocking of the kidneys.

"In short, cholera furnishes us an example of a double auto-intoxication; by an abnormal product, this is the choleraic intoxication properly so called; by normal products, constituting a variety of uræmic poisoning."

The nervous theory of Marey has always had advocates. He considers the nervous system as primarily affected by the cholera poison, and as determining the principal phenomena of the attack, even the gastro-intestinal symptoms. The cholera poison, according to Marey, first excites the sympathetic system, whence ensues the contraction of the muscles under the dependence of that system. The spasm of the arteries of the greater and lesser circulation, as well as that of the bronchial radicles explains the phenomena of the cold period. In the period of reaction, the arterioles and capillaries relax, and there is stasis of the circulation and excessive watery exudation.

The cardiac theory, defended by Eulenburg, Francois, Franck, and others, attributes the cholera-algidity to cardiac adynamia provoked by nervous irritation proceeding from the intestine; this theory derives support from the experiments of Tarchonoff and Franck who have shown that irritations of the digestive tube and mesenteric nerves may determine a more or less prolonged arrest of the heart.

The intestinal theory has very many advocates; it lays stress on two principal factors, the dehydration of the blood and tissues, and the blood-poisoning.

Under the influence of the profuse watery discharges, provoked by the intestinal lesion, the blood and tissues became unfit for nutrition and functional work.

The toxines secreted by the microbes in the intestine have a part in determining the cramps and the algidity. The final symptoms are essentially those of uræmia, due to suppression of the renal function.

It will be seen that the third theory is not out of harmony with the first, and may be considered as only another form of stating Bouchard's theory.

"From the study of the various attempts of pathologists to explain the symptomatology of cholera, it results that we must admit multiple causes. If the most powerful come under the head of intoxications, we must still make due account of the dehydration of the blood and tissues, and of the reflexes which take their start in the digestive tube and affect the vasomotors. In favor of this latter influence, may we not refer to the algidity and collapses which sometimes follow the gastric crises of tabes, and which bear so striking a resemblance to cholera?"[1]

Cholera morbus (cholera nostras) is defined by a recent writer (Lesage) in accordance with microbiological data as a microbic malady "due either to augmentation of the virulence of the *bacterium coli commune* or to poisoning by toxines developed in spoiled meats, fermented milk, etc."

It would be a necessary part of any correct definition of this common summer malady to state that hot weather and bad hygienic surroundings are the predisposing causes, given which the specific toxines may be generated in the alimentary canal though food of a fairly wholesome character be eaten.

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CHANGES IN MEDICAL LAWS IN MASSACHUSETTS.

The Massachusetts Legislature this year passed but few laws of particular interest to the medical profession. A few amendments were made in existing laws, but, as a rule, they did not materially alter previous legislation. A law to regulate embalming was passed as follows: "No embalming fluid or substitute therefor shall be injected in the dead body of any person who is supposed to have come to his death by violence, until a permit therefor in writing signed by a medical examiner has been first obtained." The law concerning the commitment of the insane was altered so that it is now necessary for a physician to take oath at the time the commitment is made that he is a graduate of some legally organized medical college and has practised three years in the State. Previously this oath was unnecessary.

The old law for the prevention of the spread of tuberculosis, was amended so that the first section now reads: "The Mayor and Aldermen of cities and the Selectmen of towns shall in the month of July in the year 1892, and thereafter annually in the month of April, appoint one or more persons to be inspectors of provisions and animals intended for slaughter, or kept for the production of milk." Another section of this same law was amended so as to read: "When the commissioners, by an examination of a case of contagious disease among domestic animals, become satisfied that it has been contracted by intention or negligence on the part of the owner, or of a person in his employ, or by his consent, or by the use of food material liable to contain the germs of contagion, they shall cause such animals to be isolated at the expense of the owner, or they shall cause them to be killed without appraisal or payment, and in all cases of tuberculosis, farcy or glanders, the commissioner having condemned the animal infected therewith, shall cause such animal to be killed without an appraisal, but may pay the owner or any other person an equitable sum for the killing and burial thereof; and may also pay a reasonable sum for the animal destroyed, should a post-mortem examination prove that said animal was free from the disease for which it was condemned."

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[1] Fernand Widal.

By a new law whenever the records of any city or town do not contain the facts relating to a birth, death or marriage, which occurred therein, the clerk or registrar may receive a deposition under oath concerning such facts as are desired for record; and shall file the deposition, and record the facts in a book kept for that purpose. This record is not to be altered, except to correct clerical error by the person who has made it.

A law was passed to provide for the building of an asylum for the chronic insane in Medfield. The Governor is to appoint seven persons, two of whom shall be women, to act as a board of trustees. A building-committee of the trustees shall have entire charge of the construction of the buildings to be erected on the land recently purchased in the towns of Medfield and Dover. The buildings shall be suitable for an asylum for the chronic insane; sufficient for the accommodation of 1,000 patients and the necessary executive officers. The expenses incurred by this committee shall not exceed the sum of $500,000. After the opening of the asylum, no patient is to be admitted to it except as transferred thereto by the State Board of Lunacy and Charity from one of the present Insane Asylums.

The Boards of Health of towns are given certain control over tombs and lots in public cemeteries. The bill regulating the boarding of infants, placing the control of baby farms in the hands of the State Board of Lunacy and Charity was given in detail on page 74 of the JOURNAL.

The much discussed fifty-eight-hour law is as follows: "No minor under eighteen years of age, and no woman shall be employed in any manufacturing or mechanical establishment more than 58 hours in a week. Nothing herein contained shall be considered to be construed to repeal the provisions of section four of chapter seventy-four of the Public Statutes; except so far as the same relate to the hours of labor during which minors and women may be employed in a week."

The law passed in 1887 concerning the liability of employers to make compensation for personal injuries suffered by their employees, in the section by which a representative of an employee of a railroad who is killed may recover damages in the same way as if the person killed was not an employee, has been amended by adding, "in case such death is not instantaneous, or is preceded by conscious suffering, the legal representative may also recover damages for such death." The total damages awarded, both for death and injuries shall not exceed $5,000.

The sweating system received the attention of the Legislature. A few changes were made in the law already existing; and a resolution was passed addressed to the National Congress, that legislation to prevent the manufacture of clothing in unhealthy places is required. A resolution was also adopted calling the attention of Congress to the importance of a uniform policy in dealing with emigrants from foreign countries, and persons emigrating from State to State, who are dependent on public charity, or have idle, vicious, or criminal habits. Congress is also urged to attend to the question of car couplers.

A resolution was passed allowing a sum not exceeding $1,000 to be expended by the State Board of Registration and Pharmacy, in making such investigations as they may deem proper for the better enforcement of the law in regard to the registration of those occupied in retailing drugs and medicines, and putting up physicians' prescriptions.

As previously stated, the Legislature in Massachusetts did very little of importance to the medical profession. A few existing laws were amended, and some of local importance only were passed.

MEDICAL NOTES.

The Next International Medical Congress. — The last week in September has now been definitely fixed upon as the date for holding the International Medical Congress next year at Rome.

Scarlet Fever in London. — For some weeks there has been an epidemic of scarlet fever in London. Although the number of cases reported has been large, the general death-rate has not been higher than usual. It was estimated two weeks ago that nearly three thousand cases were under treatment.

Lesbian Love and Murder. — A young girl, living in Tennessee, formed Lesbian relations with another girl. The latter slackened in her devotions to perverted sexuality, and accepted attentions from a young man. The young woman of the first part thereupon became jealous, and in a fit of passion killed her girl lover, declaring that she could not live without her love. The trial for murder has appeared in minute detail in several daily papers, not confined to that part of the country. The defence rests upon the question of insanity, and the result is likely to be interesting from a medico-legal point of view. The expert testimony was so unanimous in favor of the existence of insanity, that such a verdict will undoubtedly be given.

The Prevention of Cholera. — The Surgeon-General of the Marine-Hospital Service has issued a circular, for the guidance of officers of the service and custom officials, in which he says that information has been received that cholera prevails in the Caucasus, in eastern European Russia, in Persia, in Calcutta and on the western littoral of the Red Sea; and in view of the threatened further spread of the disease, and because of the danger which attaches to rags, furs, wool, hides, etc., which may have been gathered in the infected districts, and to articles of personal wear therefrom, it is ordered that no vessel having rags, furs, skins, hair, feathers, boxes or baled clothing or bedding, or any similar article liable to convey infection, hailing from any port in the districts aforesaid, and no vessel from any port carrying the above-mentioned merchandise or immigrants from the present infected districts or from districts that shall hereafter be officially declared infected, will be allowed entry to any port in the United States unless provided with either a consular certificate or a certificate from a medical officer of the Marine-Hospital Service, or State or local quarantine officer of the United States, to the effect that the vessel, cargo, personal effects, etc., have been disinfected. The disinfection of the vessel must be in accordance with the most efficient quarantine practice, and will be by one or more of the following methods: Bichloride of mercury, suphurous oxide, steam heat. In addition to the above, thorough cleansing, flushing with sea water, etc. For the disinfection of the articles of merchandise, personal effects, etc., mentioned in the circular, one or more of the following methods will be used, all articles to be unbaled: (1) Boiling in water not less than one hour. (2) Exposure to steam not less than one hour, the steam to be of a temperature not greater than 115 degrees Centigrade (239 degrees Fahrenheit), and unmixed with air. All bedding and clothing must be subjected to method No. 1 or No. 2. (3) Exposure not less than six hours to sulphurous acid gas, made by burning not less than three pounds of roll sulphur to each 1,000 cubic feet of space. (4) Exposure not less than six hours to an atmosphere containing three per cent. of sulphurous acid gas liberated from its liquid state (liquid sulphur dioxide). (5) Solution of carbolic acid of a two per cent. strength. This method (No. 5) may be applied *only* to leather goods, such as trunks, satchels, boots, shoes; to rubber goods, etc., the articles to be saturated with the solution.

BOSTON AND NEW ENGLAND.

NEW LABORATORY OF THE MASSACHUSETTS STATE BOARD OF HEALTH. — In compliance with a resolve passed by the last Legislature, the sergeant-at-arms has leased rooms at 994 Washington Street, Boston, for a laboratory for the State Board of Health.

THE INSANE HOSPITALS OF BOSTON. — The Committee on Public Institutions is expected soon to submit its report upon the site for the proposed new Cottage Hospital for cases of acute mania among the insane of the city. There are 740 of Boston's insane in State institutions, 232 at South Boston and 187 at Austin Farm. The Common Council has already appropriated $200,000 and the Aldermen have referred it to the Committee on Public Institutions. It is desired to get from 100 to 200 acres of land within the city limits for the new institution. When the new Cottage Hospital is completed the South Boston Asylum can be done away with. As soon as the new building at Austin Farm is ready, sixty insane patients will be taken from South Boston, leaving about 170 in that asylum, and forty will be taken from Austin Farm Retreat, leaving 147.

SMALL-POX AT BLOCK ISLAND. — Two cases of small-pox were found last week in one of the hotels at Block Island, off of Newport. The cases were quarantined, and an attempt made to keep the matter quiet; but it became known, and a general exodus of the summer visitors began. The authorities of Newport at first attempted to prevent the fugitives from landing there, but soon rescinded their order. It finally became evident that the panic was unnecessary, but not before a large proportion of the transient summer population had left the island.

Miscellany.

HISTORICAL NOTES ON THE GOLD CURE.

PROF. H. C. BOLTON, in an article on this subject,[1] quotes extensively from several old books and authors. He shows that this metal has been for centuries supposed to possess great therapeutic power. The oldest person, perhaps, who used it in medicine, was Moses, who took the Golden Calf and burned it in fire, ground it into powder, and strewed it upon the water and made the Children of Israel drink of it.[2]

Pliny describes a liniment of gold which possessed various therapeutic uses. The Arabian physicians in the eighth century, believed that gold was a medicine retaining and conserving the body in youth. The alchemists believed that as gold was not capable of being destroyed, it must be powerful to preserve animal tissues. In searching for an Elixir of Life, they believed that gold must enter as an important ingredient into it.

There have been several combinations brought forward at different times as the *aurum potabile*, so long sought after and from which so much was expected. Lamotte's Gold Drops in the middle of the last century, consisted of a solution of ferric chloride in alcohol, and were universally regarded as a tincture of gold.

In the works of Caspar Neumann, a passage occurs which expresses so clearly the present views of many, that it is hard to realize that it was written nearly one hundred and fifty years ago. "Gold has been imagined to be possessed of extraordinary medicinal virtues, and many preparations dignified by the name of this precious metal have been imposed upon the public. But the virtues ascribed to gold, have apparently no other foundation than credulity and superstition, and most of the golden medicines have no gold in them. Even when gold has been employed in the preparation, there is seldom any of it retained in the product. We may say with Ludovici 'It is better to make gold out of medicine, than medicine out of gold.'"

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[1] Popular Science Monthly, August.

[2] Exodus, xxxii, 20.

GUM-LANCING.

DR. H. C. WOOD, in a letter to the *University Medical Magazine*, expresses his hearty concurrence with a recent editorial in the *Dental Cosmos*, in which the editor, Dr. E. C. Kirk, criticises the condemnation of gum-lancing, by Forchheimer, in his book on "Diseases of the Mouth in Children," as a therapeutic measure for the relief of various conditions. Clinically, Dr. Wood is absolutely sure that he has seen convulsions, sick stomach, great restlessness, fever, and various other functional disturbances in young children, immediately cured by the use of the gum-lancing, after failure of various other well-directed measures for relief. Theoretically, he is in accord with Dr. Kirk, in believing that Forchheimer absolutely misses the point of the matter, by his failure to understand that the good achieved is not due to the local blood-letting or to the relief of the inflammation of the gum, but to the removal of the backward pressure upon an extraordinarily sensitive, and, at such times, congested nerve-pulp. As was long ago pointed out by Dr. J. W. White, at the period of eruption the roots of the teeth are yet incomplete. "Instead of the conical termination and minute foramen, which characterize a perfected tooth, the aperture is nearly as large as the root itself, and thus when the sensitive pulp, composed of connective-tissue, blood-vessels, and nerves, is in a condition of irritation because of the morbid activity of the process of dentition — augmented vascular and nervous action — there may be produced a hyperæmia sufficient, possibly, to cause the protrusion of a part of the mass from the incomplete aperture of the root, giving abundant cause for extreme constitutional disturbance."

Dr. Wood has seen a seemingly incurable epilepsy in an adult permanently cured by the removal of a persistent milk or first dentition tooth. Amaurosis and various other conditions in the adult, are well-known to be the result of irritation of the trigeminal nerve by faulty teeth. How much more evil is to be expected from teeth irritation in the child!

Whatever the theory in the matter may be, he is positive that gum-lancing is a most important therapeutic measure. It is essential, however, that it should be thorough, and with the object of dividing the dense tissues that bind down the teeth.

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BRONCHO-PNEUMONIA.

MOSNY,[1] in a paper in the *Rev. Mens. des Mal. de l'Enf.*, for March, on the causation and lesions of pneumonia in young children, considers the disease under two types: One he describes as a lobular pneumonia resulting directly from a bronchitis of the smaller tubes. It is frequently secondary to pertussis or measles. The other is designated as pseudo-lobar pneumonia, and the author believes it to be an acute lobar pneumonia modified by the conditions of childhood. In the true broncho-pneumonia the inflammation extends from the bronchi, where the process primarily begins, to the connective-tissue of the bronchioles and accompanying arterioles and to the alveoli. The alveolar inflammation passes through three stages: first, splenification, marked by proliferation and desquamation of the epithelium; second, red hepatization, in which there is an exudation of fibrin, red blood-corpuscles, and leucocytes; third, gray hepatization, during which there is active exudation of leucocytes which replace the fibrinous exudation. Abscesses may result or resolution may occur while occasionally there is fibroid degeneration of the walls of the bronchi and alveoli. Emphysema and atelectasis are conditions secondary to these changes and result from mechanical causes.

From sixteen cases in which bacteriological investigations were made the conclusion is drawn that secondary broncho-pneumonia is due to one or two germs, and not to the pathogenic germ of the disease during the course of which the pneumonia has developed. In a large proportion of cases the germ is the *streptococcus pyogenes*. In a few instances it is the *pneumococcus lanceolatus* of Fränkel, and when these are found the type of disease is always the pseudo-lobar. These germs are sometimes found in the mouth and throat of children in perfect health. It is possible that infection is sometimes derived from this source when the vitality is reduced by other illness. The author, however, from long experience in the so-called isolating wards of a large hospital, believes that infection more commonly results from lack of cleanliness and from septic surroundings. In these wards where a number of patients suffering from the same disease are grouped together, secondary infections are frequent and the mortality is very high. This may probably be overcome by disinfection and antiseptic precautions.

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THE MARYLAND MEDICAL LAW.

THE following are extracts from the Medical Practice Law passed by the recent Legislature of Maryland:

> There shall be two separate Boards of Medical Examiners for the State of Maryland, one representing the Medical and Chirurgical Faculty of the State of Maryland and one representing the Maryland State Homœpathic Medical Society; each Board shall consist of seven members, and each of said members shall serve for a term of four years, each Board to have exclusive rights to examine, pass upon the qualifications of and license its own applicants, said members of the first or Old-School Board to be appointed by the Medical and Chirurgical Faculty of Maryland; and said second or Homœopathic Board to be composed of seven physicians, appointed by the Maryland State Homœopathic Medical Society; the appointees shall be physicians actually engaged in the practice of medicine and of recognized ability and honor; no member of any college or university and no physician having a pecuniary interest in the trade of pharmacy shall be appointed to serve as a member of either of said Boards.
>
> For the purpose of examining applicants for license, each of said Boards of Medical Examiners shall hold one or more stated or special meetings in each year. Each Board shall keep an official register of all applicants for examinations for a license to practise medicine and surgery in this State, which shall show the name, age and last place of residence of each candidate, the school from which he or she may have graduated, and whether such applicant was rejected or licensed under this Act, but such matters shall not be written in said register or made public until after the examination.
>
> Suitable provision shall be made by each of the examining Boards to prepare a schedule of written examinations upon anatomy, physiology, chemistry, surgery, practice of medicine, materia medica, therapeutics, obstetrics, gynecology, pathology, medical jurisprudence and hygiene, and shall require the same standard of excellence from all can-

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[1] New York Medical Journal.

didates; in the department of therapeutics and practice the questions shall be in harmony with the tenets of the school selected by the candidates, the standard of acquirements therein to be established by each Board for itself: the examination shall be fundamental in character, and such as can be answered in common by all schools of practice; the votes of all the examiners present shall be "yes" or "no," written with their signatures upon the backs of the examination papers of each candidate for the respective branches.

All persons commencing the practice of medicine or surgery, after the passage of this Act, shall make a written application for license to the President of either Board which he may elect, together with satisfactory proof that the applicant is more than twenty-one years of age, is of good moral character, has obtained a competent common-school education, and has either received a diploma conferring upon him the degree of doctor of medicine from some legally incorporated medical college in the United States, or a diploma or license conferring the full right to practice all the branches of medicine and surgery in some foreign country, and has also both studied medicine three years and attended three courses of lectures, in different years, in some legally incorporated medical college or colleges prior to the granting of said diploma or foreign license; provided that two courses of medical lectures, both of which shall be either begun or completed within the same calendar year, shall not satisfy the above requirement; provided that this condition shall not apply to students in their second year in a medical college, nor to physicians who shall be practicing medicine at the time of the passage of this Act. The president of the Board to whom such application was made, if satisfied with the same, shall direct the secretary thereof to issue to said applicant an order for examination.

All examinations shall be conducted in such manner that the name, school of graduation and preparatory training of applicant shall not be made known to the Board of Examiners until his examination papers have been graded; an applicant receiving the majority of the votes of the Board before whom the applicant appears, shall be considered to have passed a satisfactory examination and entitled to the license of the Board.

A fee of ten dollars shall be paid to the Secretary of the Board.

The Board shall refuse to grant a license to any applicant who may be radically deficient in his examinations in any essential branch; provided, that in case of failure, at any such examination, the candidate, after the expiration of one year from his rejection, shall have the privilege of another examination by the Board to which application was first made.

This Act shall not apply to Commissioned Surgeons of the United States Army, Navy or Marine-Hospital Service, to physicians or surgeons in actual consultations from other States, or to persons temporarily practising under the supervision of an actual medical preceptor.

Any person infringing this law shall pay a fine of not less than fifty dollars, nor more than two hundred dollars, for each offence, and shall be debarred from recovering compensation for services rendered as such physician or surgeon.

The provisions of this Act shall not apply to any midwife or person who may render gratuitous services in case of emergency.

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THERAPEUTIC NOTES.

Vaseline as a Lubricator. — Novotny[1] warns against the use of vaseline as a lubricator for sounds and other instruments introduced into the bladder, as he has twice found this substance left behind in the bladder, serving as a nidus about which a mass of detritus had collected, and giving opportunity for the deposit of urinary sediments. In one case the quantity of detritus thus massed together upon a quantity of vaseline weighed ten grammes.

Creasote after Tracheotomy. — Soupault[2] reports forty-five cases of tracheotomy, with forty-six per cent. of recoveries. This large percentage he attributes in great part to the use of creasote, which he believes lessens the chance of broncho-pneumonia. He also hoped that as creasote was eliminated by the lungs, its free administration would be followed by a diminished tendency of the membrane to extend downward. It was administered internally in full doses, and a solution in alcohol and glycerin (1 to 30) was placed on cotton over the tube. The results seemed to prove something in its favor.

Toxic Effects of Chloralamide. — Alford[3] records a case in which unpleasant effects followed the administration of thirty grains of chloralamide dissolved in spirit. Within five minutes there came on a feeling of stupefaction and staggering gait followed in a few more minutes by incoherent speech, delusions, faintness and semi-coma. Within half an hour the patient, a women, fell into a heavy sleep, which lasted for eight hours. On waking she was unrefreshed, and had a severe headache. Just before sleep ensued, and about twenty minutes after taking the drug, there was rather violent purging but no actual vomiting.

Salicylate of Bismuth in Infantile Diarrhœas.[3] — Mikhnevitch, having tried the salicylate of bismuth in fifty cases of diarrhœa in infants under two years of age, reports that, of the number, only two died. The following formula is recommended:

℞	Bismuthi salicylici	gr. xxiv.
	Gummi arabici	ʒ i.
	Sacch. albi . . . . . , .	ʒ iss.
	Terendo adde aquæ dest.	℥ ij.
	Fiat lac, tum adde aquæ dest. . . .	℥ iv. M. D.S.

The bottle to be kept in cold water or ice, and to be shaken well before use. One or two teaspoonfuls to be given from three to six times daily. Each teaspoonful of the mixture contains about one-half a grain of the salicylate, which constitutes a normal dose (three or four times daily) for an infant of from six to eight months old. In cases of offensive diarrhœa the administration should be preceded by a dose of castor oil. The bismuth salt should be given regularly until the diarrhœa has completely subsided. It must be kept in mind, however, that in large doses the remedy is apt to induce perspiration with consecutive weakness (especially in exhausted children), hence a corresponding reduction of the dose may become necessary. In acute cases the remedy is useless, but in all of a week's standing or longer its effects are said to be excellent.

Permanganate of Potassium in Phosphorus Poisoning. — Bokai,[4] recommends a solution of potassium permanganate as an antidote in cases of phosphorus poisoning. The phosphorus is converted into ortho-phosphoric acid by the permanganate, manganese dioxide being also formed. In the stomach the hydrochloric acid of the gastric juice converts the mandioxide into manganese chloride, thereby liberating more oxygen and rendering more certain the transformation of the phosphorus into ortho-phosphoric acid.

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[1] Memorabilien.

[2] Rev. des Mal. de l'Enfance, September, 1891.

[3] British Medical Journal.

[4] Rev. de Thérap.

METEOROLOGICAL RECORD,

For the week ending July 16, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...10	30.07	74	86	62	77	61	69	W.	S.W.	10	9	C.	C.	
M..11	30.03	80	90	69	62	51	58	W.	S.W.	6	6	C.	F.	
T..12	29.92	72	86	69	69	61	65	W.	S.W.	6	12	C.	F.	
W..13	29.88	80	91	70	70	76	73	W.	S.W.	4	10	C.	O.	
T..14	29.88	79	87	72	74	66	70	N.W.	S.E.	8	8	C.	F.	
F..15	29.81	79	87	71	66	76	71	N.E.	S.	2	13	C.	C.	.10
S..16	29.85	72	79	66	82	51	66	S.W.	N.W.	12	6	C.	C.	.15
☞	29.92	77	86	68	71	64	67			7	9			.035

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 16, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,827,396	1336	862	39.76	7.28	32.62	2.14	.56
Chicago	1,250,000	461	221	21.78	8.36	2.20	2.20	6.16
Philadelphia	1,092,168	577	270	32.64	6.63	24.48	4.08	1.36
Brooklyn	955,333	—	—	—	—	—	—	—
St. Louis	477,873	208	98	27.84	3.84	24.00	—	2.40
Boston	469,615	221	101	—	—	—	—	—
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	305,000	110	49	17.10	12.60	15.30	1.80	—
Cleveland	281,353	102	45	12.57	4.95	26.73	2.97	7.92
Pittsburg	255,000	117	—	36.55	9.35	28.90	—	5.10
Milwaukee	231,140	78	59	21.76	16.64	8.96	10.24	—
Washington	230,360	191	105	38.50	10.50	32.50	.50	1.50
Nashville	87,754	35	12	28.60	17.16	22.88	—	2.86
Charleston	56,048	55	24	10.92	23.66	10.92	—	—
Portland	40,000	13	3	—	23.07	—	—	—
Worcester	92,313	34	20	11.10	11.76	35.28	2.94	—
Lowell	82,155	69	49	37.70	7.25	31.90	1.45	2.90
Fall River	82,128	50	38	50.00	2.00	44.00	4.00	—
Cambridge	74,044	34	22	32.34	8.82	32.34	—	—
Lynn	60,809	17	5	11.76	23.52	5.88	—	—
Springfield	47,052	23	15	60.90	8.70	47.85	4.35	8.70
Lawrence	45,910	32	18	43.82	9.38	37.56	—	3.13
New Bedford	44,947	18	9	27.77	11.11	27.77	—	—
Holyoke	40,099	—	—	—	—	—	—	—
Salem	31,495	10	—	10.00	10.00	10.00	—	—
Haverhill	30,015	18	2	22.22	33.33	11.11	—	5.55
Chelsea	29,179	10	5	—	10.00	—	—	—
Fitchburg	27,144	13	8	30.76	7.69	—	—	—
Gloucester	26,866	6	3	—	—	—	—	—
Malden	26,783	4	1	—	25.00	—	—	—
Newton	26,498	1	1	—	50.00	—	—	—
Brockton	20,464	1	3	25.00	—	25.00	—	—
Taunton	26,464	9	3	11.11	11.11	—	11.11	—
Waltham	20,942	7	0	14.28	28.56	14.28	—	—
Pittsfield	18,291	5	2	—	—	—	—	—
Quincy	17,973	2	1	—	50.00	—	—	—
Northampton	15,684	[illegible]	2	—	11.11	—	—	—
Everett	14,515	[illegible]	2	25.00	—	—	—	—
Newburyport	14,061	11	3	9.09	—	—	9.09	—
Amesbury	[illegible]	4	2	50.00	—	50.00	—	—

Deaths reported 3,919, under five years of age 2,030; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,292, consumption 354, acute lung diseases 187, diarrhœal diseases 865, diphtheria and croup 92, typhoid fever 75, whooping-cough 40, measles 33, scarlet fever 27, cerebro-spinal meningitis 25, malarial fever 9, erysipelas 6.

From whooping-cough New York 16, Philadelphia 9, Washington 5, Chicago 4, St. Louis, Boston, Milwaukee, Worcester, Fall River and Fitchburg 1 each. From measles New York 23, Chicago 3, Philadelphia and Pittsburgh 2 each, Cleveland, Milwaukee and Lowell 1 each. From scarlet fever New York and Chicago 8 each, Philadelphia 4, St. Louis and Cleveland 2 each, Boston, Pittsburgh and Lawrence 1 each. From cerebro-spinal meningitis New York 13, Chicago 4, Washington 3, Philadelphia, Cleveland, Worcester. Lynn and Everett 1 each. From malarial fever Cleveland and Nashville 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending July 2d, the death-rate was 17.1. Deaths reported 3,348: acute diseases of the respiratory organs (London) 185, measles 170, diarrhœa 108, whooping-cough 78, diphtheria 55, scarlet fever 46, fever 24, small-pox (London 4, Halifax 1) 5.

The death-rates ranged from 9.4 in Brighton to 22.5 in Preston; Birmingham 16.8, Bradford 14.5, Croydon 17.7, Hull 13.8, Leeds 13.6, Leicester 17.1, Liverpool 19.8, London 16.8, Manchester 21.9, Newcastle-on-Tyne 14.9, Norwich 18.3, Nottingham 15.3, Plymouth 17.1, Sheffield 17.9, Sunderland 22.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 16, 1892, TO JULY 22, 1892.

The leave of absence granted MAJOR C. E. MUNN, surgeon, U. S. A., for seven days, is hereby extended thirteen days.

By direction of the Secretary of War, LIEUT.-COL. CHARLES R. GREENLEAF, assistant medical purveyor, U. S. A., will proceed at the proper time to Montpelier, Vt., and visit the camp of the Vermont National Guard, during the period of its encampment, commencing August 23, 1892.

MAJOR J. K. CORSON, surgeon, U. S. A., granted leave of absence for one month, to take effect on or about August 2, 1892, provided CAPTAIN W. B. BANISTER, assistant surgeon, U. S. A., shall have returned from leave of absence, with permission to apply for an extension of one month.

Leave of absence for one month, with permission to apply for an extension of one month, is granted COL. CHARLES PAGE, assistant surgeon-general, U. S. A.

In addition to his other duties, MAJOR J. V. D. MIDDLETON, surgeon, U. S. A., will take charge of the office, and perform the duties of the medical director, Department of the East, during the absence on leave of Colonel Page, medical director.

MAJOR JOHN O. SKINNER, surgeon, U. S. A., granted leave of absence for four months on account of sickness, with permission to leave the Department of Texas.

RECENT DEATHS.

CHARLES D. SCUDDER, M.D., of New York, died July 19th, aged thirty-seven years. He graduated from the College of Physicians and Surgeons in 1878, and had practised in New York for the past eight years.

DAVID T. P. CHAMBERLIN, M.D. (Bowd., 1872), of Dover, N. H., died July 21st, aged forty-six years. He had practised in Dover since 1878, and had served in the legislature and on the school board.

GEORGE LUNNEY, M.D., M.M.S.S., of Malden, Mass., died in Portland, Me., July 21, 1892.

GEORGE W. VAN VOAST, of Schenectady, N. Y., died July 14th.

BOOKS AND PAMPHLETS RECEIVED.

The Ethics of Opium Habitues. By J. B. Mattison, M.D., Brooklyn, N. Y. Reprint. 1888.

Bellevue Hospital Medical College of the City of New York. Circular of Information, 1892–93.

The Influence of Sea Voyaging upon the Genito-Uterine Functions. By J. A. Irwin, M.D. New York. 1885.

Two Cases of Tubercular Osteo-Myelitis of Tibia. By J. T. Jelks, M.D., of Hot Springs, Ark. Reprint. 1889.

Northwestern University Medical School, Chicago Medical College, Chicago, Ill. Circular of Information, for 1892–93.

Hydrotherapy at Saratoga. A Treatise on Natural Mineral Waters. By J. A. Irwin, M.D. New York: Cassell Publishing Co.

Temperament, Disease and Health. By French Ensor Chadwick, Commander, U. S. N. New York: G. P. Putnam's Sons, 1892.

Essentials of Diagnosis. Saunders' Question Compends, No. 17. By S. Solis-Cohen, M.D., and Augustus A. Eshner, M.D. Philadelphia: W. B. Saunders. 1892.

Hepatic Abscess. Report of a Case, with Remarks upon the Amœba Coli. By William A. Edwards, M.D., and James Sears Waterman, M.D., San Diego, Cal. Reprint. 1892.

Original Articles.

THE TREATMENT OF APPENDICITIS.[1]

BY A. WORCESTER, M.D., WALTHAM, MASS.

The deplorable variance of opinion that exists as to the treatment of appendicitis is undoubtedly largely due to the confusion of the disease itself with its sequelæ. In reporting cases and in discussing the treatment, it is high time that a distinction should be made between these very different pathological conditions. For it by no means follows the fact of causative sequence, so brilliantly taught us by Professor Fitz, that the treatment of appendicitis and of perityphlitic abscesses and general peritonitis is one and the same. The discoveries of the pathologists, however, do impose upon us the obligation to bear in mind the probable sequelæ when considering the treatment of the *fons et origo mali.*

In reporting my cases to-night, I shall make this distinction, and I begin with the cases of perityphlitic abscess. Fortunately, the profession is fairly well agreed as to the treatment of this disease. Few physicians nowadays hesitate to send for a surgeon when either the abscess or the patient himself is plainly pointing skywards. And although the operation is still not seldom merely an ante-mortem examination, nevertheless even this is a distinct advance upon the former practice of evacuating such abscesses only at the autopsy. The mortality in these cases is rapidly diminishing, thanks both to the increasing timidity of surgeons to delay evacuating the abscess, and to the improvement in the manner of operating.

There are two kinds of perityphlitic abscess, one where the abscess is attached to the anterior abdominal wall, the second where it is not so attached.[2] And although the former is vastly the safer condition, and also secondary in point of time, yet it does not seem worth while to wait for its development. For in many cases such attachment can never occur, and after all it is not possible before operating to determine which condition obtains. Moreover, the unattached abscess is just as likely to burst into the abdominal cavity or into some viscus favored by a prior attachment.

And in the cases where the peritoneal cavity must be traversed in order to evacuate the abscess, if sponges or iodoform gauze is first packed around it and the abdominal walls firmly pressed down by the assistant's hands while evacuating and washing out the abscess cavity, then there is a good chance of not infecting the peritoneal cavity. And even if this disaster occurs it is astonishing how tolerant the peritoneum then is of pus which, were the abdominal walls intact, would occasion its frightful inflammation.

The main danger is not of infection of the peritoneal cavity but of insufficient drainage. Drainage tubes are almost worthless in these cases. For thin fluids they do very well, but for thick, foul pus they must be supplemented by plenty of aseptic gauze carried well down alongside the tubes into the abscess cavity.

A second danger is that of infecting the abdominal walls. This can be obviated by *not* using sutures. Indeed, it is extraordinary how pernicious is the force of the old-time fear of opening the belly. Many a patient has been sacrificed after an otherwise good operation by the close suturing of the abdominal wound.

Instead of sutures, if there is need of drawing the edges of the wound together, lacings should be used, running them from belaying pins fastened by adhesive plaster to the skin at some distance from the edges of the wound.

I must pass over the after-treatment of these cases, for important as it is it is exactly the same as in all cases of laparotomy where the main danger is of general peritonitis. I have therefore made little of it in the following reports, giving greatest prominence to the history of the cases, and the conditions at the time of operating. But I want to emphasize the great usefulness of the saline treatment, both by mouth and by rectum.

Case I. *Perityphlitic Abscess, attached to abdominal walls; Operation; Recovery.*

A. G., a strong, laboring man, twenty-one years old, after strain caused by heavy lifting, was seized with pain in umbilical region, May 31, 1891. Morphia was given. Two days afterwards the pain was no less; the abdominal walls were rigid; there was slight tympanites and tenderness to pressure. Vomiting bile. Temperature 101.2°, pulse 94.

June 3d. Fever and pain less. Bowels moved under stimulus of salts.

June 4th. Very comfortable, but dulness on percussion in right iliac region. Temperature 101°.

June 5th. Tumor now apparent.

Operation by Dr. H. A. Wood. Incision over tumor in right linea semilunaris. On opening the peritoneum, foul pus escaped. The abscess cavity extended from head of colon well up into the flank. It was thoroughly washed out with boiled water, and a rubber drainage-tube carried into it. For ten days there was free discharge of offensive pus from the wound, and there was considerable fever, due probably to a slight broncho-pneumonia. His convalescence was thenceforth rapid. Three weeks after the operation he was walking about.

Case II. *Perityphlitic Abscess, attached to abdominal walls; Operation; Recovery.*

I. S., watchmaker, thirty-six years old, had had three previous and similar attacks.

July 27, 1890. He felt an uneasiness in abdomen and nausea all day, general abdominal pain and vomiting that evening. The next day his attending physician found him still suffering and vomiting. The belly was slightly distended and everywhere somewhat tender to pressure. Temperature 100.8°.

July 29th. He was better of the pain, but not of the soreness.

July 30th. Patient having been removed to the hospital, came under my care. Temperature, morning, 99.2°; evening, 100.° There was then slight distention of the belly, moderate tenderness and dulness in right iliac fossa and lumbar region.

July 31st. Condition same.

August 1st. Still comfortable, but the dulness and resistance to pressure in right iliac region and the general distension increased.

August 2d. During night for the first time suffering pain in above noted region. Temperature 99.6°. But after a very comfortable day, his temperature at

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 6, 1892.

[2] I purposely omit consideration of the later stages, as example, where the abdominal wall itself is invaded.

5 p. m., was 99°, pulse 90. In spite of his very favorable condition, I decided to operate. The abdominal wall was incised for two inches in a line parallel to Poupart's ligament; one inch removed. The muscles were œdematous, the peritoneum was tough and thickened. On opening it, foul pus escaped. The gangrenous tip of the appendix presented, but as the main portion of the appendix was firmly adherent to the wall of the abscess cavity, it was not deemed prudent to attempt its removal. After washing out the abscess cavity, a rubber drainage-tube was left in it.

Recovery from anæsthesia without even nausea. For several days the discharge from wound was very foul, containing fæcal concretions. On the fifth day after the operation the sloughing appendix was discharged from the wound. The offensive discharge continued for two weeks. Then became inoffensive and gradually diminished.

Discharged from the hospital August 30th, able to walk about. Perfect recovery.

Case III. *Perityphlitic Abscess, attached to abdominal wall; Operation; Recovery.*

W. J. K., a school-boy ten years old, walked into my office the evening of March 25, 1892. He complained of pain in right abdomen, and he could not stand up straight. In the right iliac region there was a hard tumor the size of a small fist. The history of the case was rather indefinite, but the trouble was certainly of three weeks' standing. He was at once taken to the hospital and operated upon that night.

A short incision was made over the tumor, parallel to Poupart's ligament. The peritoneum was very thick and tough; on cutting through it, several ounces of thick pus escaped. The abscess cavity was strictly defined; on its iliac side was a sloughing mass resembling the appendix, but it could not be easily removed. The cavity was washed out with boiled water and packed with iodoform gauze.

His recovery has been rapid and steady, in spite of an inexplicable epididymitis.

Case IV. *Perityphlitic Abscess, attached to abdominal wall; Operation; Recovery.*

M. K., a slender school girl, fifteen years old, for three years previously had been subject to occasional agonizing attacks of abdominal pain in umbilical region. During the last year the attacks had been more frequent, at intervals of a few weeks at most. For the week previous to the sickness here described she had been very miserable, hardly able to drag herself about.

On December 25, 1890, she was seized with intense pain in lower abdomen. She was menstruating. There was no fever. Hot fomentations were applied and morphine given by a physician summoned in my absence. The next day the pain was localized in the right side, where there was also tenderness. The temperature was 101°. Unsuccessful efforts were made to move the bowels by rochelle salts and enemata.

December 27th. Pain less, but besides the tenderness in right iliac fossa, there was dulness next the ilium. She had to be catheterized. Temperature 102°, pulse 110.

December 28th. Tumor now discoverable in right iliac fossa. At 11 a. m., temperature 102.8°, pulse 115. At 4.30 p. m. temperature 103.8, pulse 109. Frequent cramp in right leg. Otherwise little pain. Passed urine naturally.

December 29th. After a comfortable night, she had a fairly comfortable day. Her appetite came back; under influence of four rochelle powders and enemata her bowels were well cleared. Temperature morning 101.8°; evening 102.8°.

I first saw her on the fifth day, December 30. Her temperature at 7.30 a. m. was 102.4°. She was still menstruating. She was apparently in very comfortable condition, sleeping a good deal. There was a well-marked tumor low down in right iliac fossa, exquisitely tender to pressure. She was immediately operated upon. The incision, two and one-half inches long, parallel to Poupart's ligament, one and one-half inches above, opened directly into abscess. Foul pus washed out, rubber drainage-tube inserted. Recovered well from anæsthesia. There was a copious discharge of foul pus for a week, but after several little fæcal masses were washed out, the discharge became less, and inoffensive. Drainage-tube removed on the 18th day; wound healed and patient walking about at end of fifth week. Recovery apparently perfect. But during the following year there have been two small abscesses in same place, both opened as soon as discovered, and neither one disabling her for more than a few days.

Case V. *Perityphlitic Abscess, unattached; Operation; Recovery.*

C. C. D., schoolmaster, thirty-five years old, a very strong man, was taken sick October 19, 1891. He had previously suffered from occasional attacks of abdominal pain. This time he thought his vomiting and distress due to his having eaten stewed barberries the day before. Dr. G. E. Titcomb, of Concord, found him the afternoon of October 22d somewhat under the influence of morphia, but suffering pain in abdomen. He was vomiting occasionally. Micturition was difficult. Temperature 100.2°, pulse 85. Abdomen tender in right iliac region.

The next day the area of sensitiveness to pressure was less, but there was distinct hardness in same region. Vomiting continued. Temperature 99.2°, pulse 75. Operation urged, but question postponed.

I was summoned at 5.30 p. m., October 24th, by Dr. Titcomb, to whose kindness I am indebted for the preceding history and for his equal share in caring for the patient subsequently.

I found the patient's temperature 99.5°, pulse 88. There was a distinct tumor, size of a large fist, in the right iliac region. It was sharply defined and exquisitely tender. There was also slight general abdominal distention and tenderness. An incision three inches long was at once made in the right linea semilunaris.

The sub-peritoneal tissues were very vascular. On incising the peritoneum several ounces of foul pus escaped. There was no distinct abscess cavity, but a mass of necrotic tissue, which as it could not be easily got out, was left *in situ*. Five rubber drainage-tubes were inserted in different directions, and iodoform gauze then packed well down between the tubes into the iliac fossa, thus forming a cesspool for the collection of the drainage. This scheme worked well, and I hope I shall never forget to employ it in a similar case.

The next day his temperature was 100.2°, pulse 92. He was given by mouth one ounce of sulphate of magnesia, and by rectum one ounce of glycerine, half an ounce of spirits of terebinth, two ounces of sulphate of magnesia, and two ounces of water. This was repeated in one hour, and followed by large discharges of gas and fæces.

His recovery was thenceforward steady, but not very rapid. He was, however, able to resume his profession after two months.

Case VI. *Perityphlitic Abscess, unattached; Operation; Recovery.*

P. A. R., a school-boy, eight years old, brought to hospital September 5, 1890. Two weeks previously vomited bile all day. After that he complained constantly of pain in right lumbar region and in front of thigh. He stooped and walked lame. He was for some time feverish. His temperature the day before entrance was 100.2° in the morning, in the evening 102.2°. There was dulness, tenderness, and a sense of resistance to pressure in right lumbar region.

September 6. No change in condition, and no urgency of symptoms. Nevertheless, there being no doubt as to diagnosis, he was operated upon. Vertical incision two inches long above crest of ilium, just over point of greatest resistance to pressure. A mass the size of a hen's egg presented. Sponges were packed around it and the abdominal wall pressed down upon the sponges so that when the mass was pried open by my finger the very foul pus did not flow into abdominal cavity. Washed out. Two rubber drainage-tubes inserted. Recovered from anæsthesia well. Free pus discharge for some time, and stitch-hole abscesses. Went home in two weeks. Recovery perfect.

Case VII. *Perityphlitic Abscess, unattached; Operation; Recovery.*

L. M., a strong healthy farmer, seventy-six years old, the evening of March 27, 1892, was seized with a chill, and colic pain in right side. The next day after a cathartic, his bowels moved twice. The pain continued. At 1 p. m., March 29, Dr. G. E. Titcomb, of Concord, found him still suffering. His temperature was 101°, pulse 72. There was tenderness in right iliac region. At 5 p. m., March 30th, temperature 100.8°, pulse 84. At 11 p. m. I saw him in consultation with Dr. Titcomb. His temperature was then 99.4°, pulse 80. The next afternoon temperature 98.4°, pulse 68. The pain had decidedly diminished. But in the right iliac fossa there was a lump very sensitive to pressure. He could rest only while lying flat on his back. His bowels were moving well. His stomach was in perfect condition. There was no question that he had a perityphlitic abscess.

For two days he remained in about the same condition. On April 3d, the seventh day of his sickness, his temperature was 99.4°, pulse 76. The tumor, although less tender to pressure, was a trifle more prominent. Operation was advised and agreed upon.

Incision two and one-half inches in right linea semilunaris directly over the tumor, which was below the McBurney point. Turbid bloody fluid escaped on opening the peritoneal cavity. The peritoneal surface of the small intestine which presented was highly injected. The tumor was found to be a matted mass at the brim of the pelvis. In examining with the finger I unfortunately burst into it, before I could surround it with packing, not preventing the escape of foul pus into the abdominal cavity. The abscess cavity and afterwards the abdominal cavity were then thoroughly washed out with boiled water. The abscess cavity was packed with iodoform gauze around a rubber drainage-tube.

He recovered from the ether well. There has since then been no trouble whatever. Foul pus is discharging from the wound, and although early to say so, his convalescence seems assured.[3]

So much for the subject of perityphlitic abscess. I now pass to the consideration of appendicitis proper.

The disease is not uncommon in this part of the world. It is easily diagnosticated. As its name implies, it is an inflammation of a perfectly worthless organ, which is very prone to become gangrenous in Nature's efforts to rid the body of it. Unfortunately there are terrible dangers attending this natural process. In the first place, as the appendix perforates or sloughs off from the cæcum, there is a sacrifice of the gut's integrity: its foul contents can then leak out into the very depths of the abdomiual cavity. Or, again, by extension of the gangrenous process, vital organs are liable to to be invaded; the peritoneum itself being especially liable to this contamination.

If, in the pus resulting from this gangrene, or escaping from the appendix, there is present only the staphylococcus, then the course of the disease and of its sequelæ may not prove unmanageable. But if, on the other hand, as is just as likely to be the case, the streptococcus pyogenes aureus is present, then the case is fulminant, and in the opinion of most authorities is hopeless; it is certainly so if left to Nature's care, or in the hands of a physician bold enough to temporize.

The proper treatment of appendicitis is perfectly plain. The organ itself must be excised at the outset, before it perforates or any complication arises. This can be easily and safely done. There are then no adhesions to blockade the search for the appendix. And when found, it can easily be brought to view and into easy reach. It is a simple matter to amputate it and to invert the stump by suturing together its peritoneal surfaces. That is the whole of it. The patient will be soon perfectly well and will never have another attack of appendicitis.

The responsibility for any unfavorable termination, provided he is summoned at the outset, rests upon the medical attendant.

In these cases the physician's duty is glaringly plain: it is to summon a surgeon. The surgeon's duty is equally plain: it is to use the knife as soon as ever he is assured of the correctness of the diagnosis. And when surgeons recognize their duty, physicians will doubtless be more ready than they are now to recognize theirs.

Case VIII. *Appendicitis: General Purulent Peritonitis: Operation: Recovery.*

D. M., a strong tinsmith, twenty-four years old, had some pain in the belly on the evening of September 7, 1890. The next morning the pain was worse. Took a cathartic, and had several dejections. He was up and about all day, and in the evening of September 8th came to Dr. Wood's office. He complained of constant pain in the hypogastric region. No tenderness on pressure. Temperature 99.5°, pulse 100. At 4 a. m., September 9th, Dr. Wood found the man complaining of ineffectual desire to empty his bladder, but by catheter only two drachms of urine were obtained. During the night one and one-fifth grains of morphine were given by the mouth. At 11 a. m., the temperature was 101.4°, pulse 96. Pain less; but tenderness and resistance to pressure in hypogastrium. No pain or tenderness in the right iliac fossa. At 4 P. M., temperature 101.4°, pulse 102. Pain in middle and extending up left side. Resistance of abdominal walls much greater. Great tenderness to pressure, especially in median line.

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[3] He has now (July 1st) entirely recovered.

He was then removed to the hospital. At 8 P. M., (twenty-four hours after his visit to Dr. Wood's office, and forty-eight hours after his first pain), his temperature was 102°, pulse 106. Belly walls rigid and distended. Severer pain, extending especially upwards to the left. No dulness on percussion. By rectum, the pelvic floor was found to be exquisitely tender, but not bulging or fluctuating.

Operation by Dr. H. A. Wood. Incision three inches, well down in median line. Considerable sero-purulent fluid escaped from peritoneum. Appendix found dipping down into the pelvis, adherent to its posterior wall. A second opening was then made in the right abdominal wall, two inches long, parallel to Poupart's ligament, through which the appendix was removed with considerable difficulty. It was four and one-half inches long, with the outer three-quarters gangrenous, but not perforated. It was amputated half an inch from cæcum, above a catgut ligature. Considerable thick pus was washed out of pelvis, and the whole abdomen thoroughly flushed with boiled water. A rubber drainage-tube was carried down into pelvis through the side wound.

Patient recovered well from operation. His temperature the next day was 99.2°, and afterwards normal. His convalescence was uninterrupted.

Case IX. *Appendicitis; General Purulent Peritonitis: Operation; Death.*

W. A. B., a lawyer, thirty-five years old. Seen in consultation with Dr. George A. Oviatt, of Sudbury, to whose kindness I am indebted for the history of the case previous to my visit.

The patient had been a very robust and healthy man. On the night of August 25, 1890, had a slight chill and some pain in umbilical region. The next day pain more severe, and located in right iliac region.

He was first seen by Dr. Oviatt August 27th, at noon. His countenance was pale and anxious, temperature 100°, pulse 96. Some tenderness over lower abdomen, especially in right iliac region. No tumor. He was given a compound cathartic pill. That night he was seized with dreadful pain, tearing in character, in the right abdomen. He walked the floor in his agony.

The next morning his countenance was drawn; forehead moist; pulse 110 and weaker; temperature 102.5°. The abdomen was more tender, more distended. Frequent eructations of gas. Operation was then advised. At 4.30 P. M., his pulse was small and weak, temperature 96°. He was in a profuse, cold sweat. He vomited every few minutes a dark-brown liquid, the odor of which was only slightly fæcal. Operation assented to. Meanwhile, brandy enemata were given every half-hour.

I saw the patient at 10 o'clock that night. His pulse could not be counted at the wrist; his arms and legs were cold; but, though suffering agony, his mind was supernaturally clear. I told him he was dying. He insisted upon knowing just what was the trouble. He begged for an operation. I finally consented to open the distended abdomen and flush it with hot water. This gave him relief. For a while his pulse was better. He died three hours after. On incising the abdominal wall, I found just what would be expected, — a sloughing appendix, and stinking pus free in the abdominal cavity.

Case X. *Appendicitis; Operation; Recovery.*

L. S., a school-boy, six years old, for previous two years had had occasional "bilious spells," characterized by vomiting and fever, and lasting for several days. These attacks have been of increasing frequency, two having occurred within the six weeks previous to the attack here recorded.

In the forenoon of August 10, 1890, he complained bitterly of pain in the right side of the abdomen. He vomited occasionally through the day and following night. He was feverish; slept little; refused food.

I first saw him at 8 P. M., August 11th. He was then occasionally crying with pain, which he referred definitely to the right iliac region. The abdomen was rigid, but not tender on pressure except in the right iliac region, where there was also dulness on percussion. Temperature 102°, pulse 120. Operation was urged, but not assented to until noon the next day, fifty hours from time of seizure. His condition then was about the same; his fever, indeed, somewhat less. Temperature 101°, pulse 110.

An incision was then made, two and one-half inches long parallel to the crest of the ilium, one and one-half inches removed. The peritoneum was adherent to cæcum and colon. After dissecting through adhesions with my finger, I found the appendix lying under the cæcum and firmly adherent thereto. It was gangrenous, judging from the feel of it, and contained several concretions. As only its tip could be loosened from the bed of adhesions, it was left *in situ*, with a perforated rubber-tube alongside of it.

After a comfortable night his temperature the next day was 99°, and quite normal after the second day. Considerable sero-sanguinous discharge from wound. There was no pus found at the time of the operation, nor until the third day thereafter, when a small amount of highly offensive pus was discharged. For several days afterwards this discharge was very free, and on the sixth day after the operation, a fæcal concretion, the size of a large nut, came away. During these days of the foul purulent discharge, the boy was perfectly comfortable, and had a fine appetite. In three weeks he was well, and has since continued so.

Case XI. *Appendicitis: General Purulent Peritonitis: Operation: Recovery.*

F. L., salesman, twenty-one years old, had had many previous attacks of colicky pain accompanied by vomiting and diarrhœa, but suffered a more severe attack the night of January 30, 1892.

At 4 A. M., January 31st, Dr. Wood found him suffering acute pain in the umbilical region. His temperature was 98°. One-third of a grain of sulphate of morphia was given hypodermically. At 1 P. M., the pain was relieved, but there was slight tenderness to the right of the umbilicus. In the evening the pain had returned. Temperature 99.5°, pulse 95. Morphia again given — one grain in the course of the night. At 9 A. M., February 1st, difficult and painful micturition. Increased pain and tenderness located along the border of the right rectus. No dulness nor tumor.

Increasing rigidity and distention of abdomen. Temperature 98°, pulse 108.

Removed to hospital at noon. At 4 P. M. (forty-four hours from seizure), temperature 101.6°, pulse 120. Distention increased. Pain and tenderness more distinctly localized in right iliac fossa.

Operation by Dr. H. A. Wood. Incision in right linea semilunaris, of two inches. Purulent fluid escaped from peritoneal cavity. Slight adhesions between coils of intestines. The appendix, two inches long, sloughing and perforated near its base, was carefully brought to the surface and amputated above a catgut ligature. Abdominal cavity thoroughly washed out with boiled water Glass drainage-tube laid to bottom of pelvis.

The patient stood the operation well, and made an uneventful recovery, returning to his home in three weeks.

Case XII. *Appendicitis; Excision of the Appendix; Recovery.*

G. A. R., a watch-factory girl, twenty-one years old, had been very well till a year ago, when she had an attack of severe abdominal pain lasting several days. Two months after, and again in four months, she had similar attacks. Since the last attack she has not been able to bend her body without pain.

On January 6, 1891, she was as well as usual till 4.30 P. M., when she was seized with a sharp pain in the belly. But she kept at her work-bench till evening, and then went on a long sleigh-ride. At 3 o'clock the next morning the pain increased. In the afternoon she had a chill, and suffered severe abdominal pain. Dr. W. S. Hoyt was summoned. He found tenderness in the right iliac region. Temperature 99.5°, pulse 100. At 5 A. M., January 7th, she was suffering intensely, in spite of one grain of morphine given during the night. Temperature 100.5°, pulse 118.

I first saw the patient at 10.30 A. M. Her temperature was then 100.6°, pulse 112. Face flushed and anxious. Complaining bitterly of pain in right abdomen. The abdomen was somewhat rigid and tender to pressure, more marked on the right side. No dulness. Nothing abnormal found per vaginam or per rectum. She was moved to the hospital.

Operation at 4 P. M., forty-eight hours from initial symptoms. When fully under ether, the abdominal walls were just as rigid as before, and it was possible to find only an indefinite resistance in the right iliac region. Incision three inches, in right linea semilunaris. On cutting through the toughened peritoneum, a small amount of turbid serum escaped. The cæcum presented. Towards the median line all was free and normal, but on the outer side of the cæcum were delicate adhesions which easily gave way to the examining finger, allowing the easy discovery of the appendix, lying under and to the outside of the cæcum, firmly attached thereto, and bathed in foul pus. By rotating the cæcum the appendix was brought up out of the abdomen. The mesentery of the appendix hav ing been ligatured and cut free, the distal half of the appendix was amputated, the stump inverted and its peritoneal surface brought together with Lembert sutures. Abdomen washed out with boiled water. A rubber drainage-tube left in iliac fossa. Wound sutured with silk-worm gut.

Her recovery was interrupted by sloughing walls of wound, by prolonged nausea, and the necessary catheterizing, and, worst of all, by a phlebitis in the left leg; so that it was a full month before she was up and about. Six weeks after the operation she was discharged from the hospital fully recovered. She has since then been perfectly well.

Dr. W. F. Whitney, who kindly examined the removed appendix, reported its condition as follows:

"A portion of the appendix cæci, five and a half centimetres long, with a perforation with ragged edges, two and a half centimetres from tip. No concretion found. Microscopic examination showed mucous membrane ulcerated and extensive round-cell infiltration through the entire thickness to the peritoneal surface near the perforation. This infiltration gradually diminished to the point of removal; but even there there was thickening and hæmorrhage."

In making this report, it is proper to state that besides these cases, I have seen in consultation several others where no operation was performed. But, excepting one case seen in consultation with Drs. Adams and Wilkin of Framingham, where the patient was dying of general peritonitis, I have myself never dared to assume the responsibility of treating the disease otherwise than as herein recommended.

I am well aware that my experience is small in comparison with that of many others. I am also well aware that these reports do not exactly resemble the ideal operation; but, in connection with the reports previously made by my colleague, Dr. E. R. Cutler, and myself, I trust that sufficient foundation is established for our claim that the only proper treatment of appendicitis is the immediate excision of the appendix.

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REMARKS ON THE SURGICAL TREATMENT OF APPENDICITIS.[1]

BY MAURICE H. RICHARDSON, M.D.

The remarks which I wish to make upon the treatment of appendicitis are based upon my personal experience in the following cases, which have come under my care at the hospital or to which I have been called in private practice for the purpose of deciding whether or not operative interference was necessary. In every case, the question of operation has been raised.

I have arranged my cases as follows to show very briefly the nature of each. That many of them were cases of perforative appendicitis, was shown either by the operation or by the autopsy. Others undoubtedly had the same origin, though recovery without operation or death without autopsy left the diagnosis without absolute proof. I think there is little doubt that the cause of the trouble, in most of the milder cases accompanied by abscess, was in an inflammation of the appendix. In some of them, however, the source was quite uncertain. Of such cases, as well as of the very mild ones which recovered without serious symptoms, I would say that they throw very little light upon the main question of early interference. They may even be productive of harm unless we emphasize the fact that at no time are their symptoms such as to make the case urgent, or to raise the question of early laparotomy.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 6, 1892.

I. CHRONIC CASES: RECOVERY WITHOUT OPERATION.

1. W. P. K., aged fifty, Boston. Attack in 1887. Indigestion, colic, tenderness and marked tumor. Said he had had it many times before. Advised watching. Recovery. No recurrence in 1892.

2. Dr. O., aged forty-two. 1889. Thirteenth attack. With each attack a large bunch in region of appendix, tender and slightly painful. After last attack tumor slowly subsided. Operation not advised. Remains well.

3. J. J. C., aged twenty-nine, Massachusets General Hospital. July 30, 1890. Family and personal history good. Sixteen months ago sharp pains with nausea and vomiting, followed by constipation. Something broke in region of liver, followed by coughing and expectoration of dark-colored fetid matter. Recovery from that. Since then several similar attacks. Well-developed but emaciated. Temperature 100°, pulse 120. Conditions improved. Advised to wait and report later.

4. Dr. G. E. L., aged thirty-seven, Lowell. Dr. Bass. Three months ago taken with sudden pain in right abdomen, vomiting and chilly sensations. Tenderness and occasional pain in right iliac fossa now. No operation advised. Recovery.

II. CHRONIC APPENDICITIS: DEATH WITHOUT OPERATION: AUTOPSY.

1. W. H., aged twenty-one, Saxton's River, Vt. Dr. Hill. March 15, 1892. First taken with severe pain in right iliac region early in the winter. Recovered, but still tender. Recurrence of pain in March. No physical signs. Tuberculous disease of hand also. Operation seemed inadvisable. Died in July. Appendix inflamed, an inch in diameter. Old abscess cavity found behind cæcum, with peritoneal tuberculosis. Tuberculosis of lungs.

III. APPENDICITIS, CHRONIC, WITH ABSCESS: OPERATION: RECOVERY.

1. Dr. G. C. P., Ashland. Dr. Bigelow, Framingham. November 18, 1890. Uneasiness in right side six or eight months ago, which disappeared. Two weeks ago it re-appeared. Tender over appendix; some vomiting. Tumor size of small lemon, freely movable, tender, hard. December 20th, abscess opened and drained. Rapid recovery.

2. Bridget K., aged thirty-six, Massachusetts General Hospital. Dr. O'Donnell, Newtonville. February 14, 1891. In October, 1890, jaundice. One week ago chill and severe pain. From ribs to iliac crest tender, dull, resistant. Operation: four ounces odorless pus and blood. Appendix not found. Recovery. Origin of abscess doubtful.

3. Frank H., aged about forty, Massachusetts General Hospital. Dr. Dudley, Abington. August 12, 1891. Began to have steady pain in right lumbar region last winter, which passed away after a time. May 1st, general malaise and severe pain; chill. Weak and emaciated. Mass size of orange in right lumbar region. Operation: small quantity of pus and shreddy material. Recovery. Origin doubtful.

4. Georgina M., aged eighteen, East Cambridge. Dr. Cahill. July 8, 1891. Vomiting, severe pain, right leg drawn up, tympanites, constipation and chills. Induration in right iliac fossa. Operation: small amount odorless pus. Good recovery.

5. E. E. R., aged nine, Roxbury. Drs. J. P. Oliver and Fitz. Recovered from the first attack; had a recurrence and abscess. Operation: pus evacuated. Origin undoubtedly appendicular. Recovery. March 25, 1892.

6. Ira Y. K., aged 60, Athol. Dr. Oliver. April 11, 1892. Not well for two years. About three months before, taken with pain in right iliac region. Later, bunch appeared, supposed to be malignant. Tumor appeared behind ilium; opened; fetid pus. Cavity extended to brim of pelvis. Probably arose from appendix. Slow recovery. Now well.

IV. ACUTE CASES: RECOVERY WITHOUT OPERATION.

1. L. L., previously reported in *Boston Medical and Surgical Journal*. Age about forty-five. Symptoms coming on suddenly. Cake in right iliac fossa. Remains well. Athol. Dr. Oliver.[2]

2. Young man with acute pain in right iliac fossa. Symptoms not very severe.[2] Recovery.

3. W. C., August 11, 1888. Sudden, sharp pain in abdomen on 7th; some fever. On 10th, vomiting. Pulse 78, temperature 99°. Abdomen soft. Tenderness over appendix. No distinct cake. Symptoms gradually disappeared, and patient was discharged August 25th, well. Massachusetts General Hospital.

4. Mabel E. I., April 15, 1888. Taken sick two weeks ago. Chilly. Pain all over abdomen. Abdomen tympanitic. No special tumor and no marked resistance. Advised watching. Perfect recovery. Swampscott. Dr. Colman, of Lynn.

5. W. J., Massachusetts General Hospital, August 10, 1889. Eleven weeks ago fell from bicycle, receiving blow in inguinal region. Five weeks ago pain and cramp. Rectal examination showed soft tumor, size of fist. Advised against operation. Improved. Discharged October 10th, well.

6. Mary H., Quincy. Dr. Donovan. September 14, 1889. September 8th, chill and pain. Subject to bilious attacks. Has angular curvature of the spine. Hard, painful swelling in right iliac fossa. Recovered, and has never had any more trouble.

7. Child, Cambridge. Patient of Dr. Stevens. Aged ten. Sudden attack of pain and vomiting; chill. In bed two weeks. Temperature 103°, pulse 116. Abdomen distended and tympanitic, excepting right iliac region, where there is dulness and resistance. Symptoms gradually improved. Recovery.

8. Boy, ten years of age, Boston. Dr. F. H. Williams. Was taken while in the country with acute pain in the abdomen, followed by tenderness in the region of the appendix. Made a good recovery without operation.

9. Mrs. C. W. H., Boston, about thirty-five years old. Dr. Strong. Acute pain in abdomen, followed by localized symptoms in the region of the appendix. Advised waiting. She made a good recovery.

10. C. M. K., aged thirty-two, Rockland, Me. Dr. Hitchcock. September 18, 1889. Good health up to May 30, 1888. On that day chilly sensations, tenderness, fever. Kidneys badly affected. Tumor. Recovery from that. Present attack began two weeks ago. Diarrhœa and pain. Severe chill. No signs in abdomen except tenderness. Operation not advised. Recovery.

11. F. S., aged thirty, New Bedford. Dr. Swift. October 25, 1889. Pain in "middle of stomach" a year ago. Got over that. Always well. Two days ago sudden, severe pain below epigastrium on the right. Chills. Slight nausea. General appearance good. Pulse 90. Slight tenderness; slight dulness in lower quadrant. Improvement of symptoms. Recovery. Remains well.

12. Mrs. B., aged forty-three, Charlestown. Drs. Forster and Towles. December 6, 1889. Twelve children. Four months ago pleurisy. Pain in right side ten days ago. Tumor size of orange in inguinal region. Temperature 101°, pulse 100. Chill, intense pain. Recovery without operation.

13. Mrs. H. W., age about thirty, Boston. Dr. J. J. Minot. January 4, 1890. Began with distress in upper part of bowels. Lameness and soreness with wind. Pain worked down into right iliac fossa. Tenderness and sense of resistance. Pulse 72 to 80, temperature normal. No vomiting. Recovery.

14. W. R., age six, Charlestown. Dr. Blood. July 14, 1890. Pain near anterior superior process of ilium. Nausea and vomiting. Dulness and marked resistance in right iliac fossa. Temperature 101.2°, pulse 116. No marked tympanites. Circumscribed peritonitis. Advised watching. Recovery.

15. F. P., age sixteen, Allston. Dr. O. H. Marion. August 4, 1890. Two weeks ago taken with sharp pains across stomach; vomiting. No tympanites. Temperature 102°, pulse 100. Circumscribed peritonitis right abdomen,

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[2] See Boston Medical and Surgical Journal, Jan. 26, 1888, p. 88.

little above umbilicus. In this place increased resistance and dulness. Advised watching. Recovery.

16. J. D. M., age fifteen, Massachusetts General Hospital. August 9, 1890. No previous attack. Seized with sharp pain in right inguinal region twelve days ago. Vomiting. Pulse 102, temperature, 101.8°. Hard, resistant mass, flat on percussion, above crest of ilium, about size of two fists. Poultices and liquid diet. Recovery.

17. Miss S., East Somerville. Dr. M. A. Morris. November 12, 1890. Similar attack twelve months ago, and another three months ago. November 1st, pain came on gradually. Vomiting. Tumor size of pigeon's egg. Temperature 100°, pulse 88. Advised watching. Made a good recovery.

18. M. McL., age thirty-five, Boston. November 13, 1890. Taken with sudden pain in right iliac fossa. Vomiting; no chill. Tenderness in region of appendix. Referred to Massachusetts General Hospital for nursing and observation. Good recovery.

19. H. A. R., age thirty-seven, Lynn. Dr. Marshall. November 26, 1890. Four weeks before taken with pain, fever, vomiting. Legs drawn up. Chills, no tumor. Pulse 108 to 120. Ten or twelve days later pus broke into intestine. After this, better. Pneumonia. Abscess filled and broke again. Bunch in side disappeared when abscess broke. Good recovery.

20. J. R. H., age fifty-three, colored, Boston. Dr. J. B. Ayer. September 17, 1891. First attack three years ago, severe cramp. Since then several attacks. This attack came on suddenly. 16th, pain and vomiting. 17th, chill. Then began to improve and was out in carriage September 23d. Perfect recovery.

21. C. M., age twenty-two, Cambridge. Patient of Dr. Hildreth. December 5, 1891. Acute abdominal symptoms with tenderness and pain in right iliac fossa. Recovery without operation. St. Margaret's.

22. H. M., age about twelve, Roxbury. Dr. Withington. January 11, 1892. Acute symptoms pointing to right iliac fossa. Recovery without operation.

23. W. W. P., student, Cambridge. Dr. Hildreth. February 6, 1892. Two days ago general *malaise*, pain in middle of abdomen, tympanites, resistance, tenderness. No vomiting. Looks very well indeed. Pulse 80, temperature 98.4°. Recovery without operation.

24. Mrs. J. R., age thirty-nine, Charlestown. Dr. Blood. February 29, 1892. Taken with chill. Pain below and to the right of umbilicus; nausea. Abdomen tympanitic everywhere. Doubtful dulness in right. Pulse 116, temperature 99.5°. Advised watching. Recovery.

25. A. A. F., age twenty-nine, Providence. Dr. Fuller, Boston; Dr. Abbott, Providence. May 19, 1892. Dulness in right iliac fossa. Improving. Did not seem necessary to do anything. Recovered.

26. H. W., age fifty-three, East Cambridge. May 20, 1892. Acute pain in lower abdomen. Tenderness over appendix. High fever and constitutional disturbance. Distension. Sent to Massachusetts General Hospital, where he recovered slowly, without operation. Dr. Finnegan.

27. Mr. D., age eighteen, Reading. Drs. Dow and Fitz. Pain and tenderness in right lower quadrant. Constitutional disturbance. No marked physical signs except tenderness. Advised delay. Rapid and permanent recovery.

V. ACUTE CASES: OPERATION: RECOVERY.

1. Male, M. G. H. Mild. Abscess. Operation: recovery.[3]

2. Male, M. G. H. Mild. Abscess. Operation: recovery.[3]

3. William C., Massachusetts General Hospital. July 6, 1888. Loss of appetite and weakness for eight weeks. Two weeks ago severe pain coming on suddenly. Fairly nourished; abdomen not distended; slight prominence in right lumbar region. Operation: one pint thick, odorless pus. Recovery rapid and uneventful. Origin doubtful.

4. Jeremiah S., aged fifty-eight, Massachusetts General Hospital. October 30, 1888. For two years more or less pain in right groin. Within three weeks general malaise; fever at night. Mass size of two fists, hard, semi-fluid, and tender on pressure. Operation: four ounces pus with fæcal odor. Recovery.

5. Young lady, with pain, tenderness and tumor. Drs. Marion and Fitz. Brighton. Abscess containing a very large quantity of foul pus. Uneventful recovery.

6. Mr. H., aged about eighteen. Drs. Goss and Fitz. Roxbury. June, 1889. Usual symptoms of acute inflammation of the appendix, with dulness, but no tumor. Sent into the Massachusetts General Hospital. Was operated on by Dr. Warren, who removed an enormous amount of pus from the abdominal cavity. Several large pockets. Recovered, and has been well ever since.

7. Master J., about twelve, Lexington. Dr. Tilton. Acute appendicitis: dulness and tumor. Advised waiting. A day or two later an operation was performed and pus evacuated by Dr. Cutler, of Waltham.

8. Charles S., painter, Athol, aged thirty-five. Patient of Dr. Oliver. Symptoms acute, with large abscess; opened above Poupart's ligament. Made a rapid recovery.

9. Walter S. R., aged seventeen, Massachusetts General Hospital. May 4, 1889. Excision knee. During convalescence developed appendicitis. June 2d, sharp, cutting pain in ileo-cæcal region; tenderness; vomiting; temperature and pulse up; distinct cake. June 14th, operation: escape of large amount of thick, very foul pus; several pockets found; appendix not found. July 1st, pneumonia; 28th, discharged, well.

10. Charles A., aged thirty-four, Malden. Drs. Odlin and Fitz. February 2, 1890. After previous attacks, had a sudden attack two weeks ago, resulting in an abscess in the region of the appendix. Operation: evacuation of fæcal pus. Recovery.

11. Michael J. L., medical student, aged eighteen, Cambridgeport. Drs. McCarthy and Fitz. March 2, 1890. Eight days ago slight pain in abdomen, which became localized in right iliac region. Constitutional disturbance severe. Tumor, with tenderness. Operation: foul abscess cavity evacuated and irrigated; appendix not found. Recovery.

12. William F., aged fourteen, Salesville, R. I. Drs. Nickerson and Fitz. December 20, 1890, fell on the ice and "knocked the wind out of me"; 22d, pain in stomach, pain increasing; 26th, chill and prostration; pulse 100, temperature 104°; marked tenderness and dulness of right side; extreme prostration. 31st, operation. Discharged well on March 4, 1891.

13. George M., aged thirty-two, Swampscot. Dr. Stevens, of Lynn. May 18, 1891. Had attack of colic one year ago, also two months ago. May 12th, pain in region of appendix and vomiting; not any very severe pain; abdomen tense; general appearance good; pulse 90, temperature about normal. Operation: everything glued together in right iliac fossa; general peritoneal cavity opened; small amount offensive pus; drainage-tube. Perfect recovery.

14. Jarvis K., aged eleven, Cambridge. Dr. McIntyre. July 4, 1891. Bilious attacks all his life. Taken July 1st with pain in stomach, vomiting; knees drawn up; temperature 102°, pulse 135; face darkly suffused. July 4th, operation: tissues œdematous, bowel adherent; half a pint of fæcal and offensive pus. Perfect recovery. Second operation by Dr. Cabot. Recovery.

15. Leander P., aged four, Fairhaven. September 21, 1891. Dr. W. N. Swift. Strong and healthy child. Taken with pain in stomach and vomiting; temperature 102°, pulse 140; general appearance bad: abdomen slightly distended and very tender in right iliac fossa; no dulness. Operation: gangrenous and perforated appendix removed; localized peritonitis deep among intestines. Recovery.

16. Alice T. L., aged fourteen, Charlestown. Drs. Cutter and Fitz. October 1, 1891. Three days ago pain and vomiting; general appearance good; temperature 100°, pulse 128; both legs drawn up. Operation: discharge of thin, watery fluid, with fetid odor; appendix, inflamed, gangrenous and perforated, was ligated and removed. Recovery.

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[3] *Vide* Boston Med. and Surg. Jour., loc. cit.

17. Mrs. H. S. P., aged about thirty, Auburndale. Dr. F. E. Porter. November 18, 1891. November 13th, colic and indigestion, vomiting, delirium; pulse 125, temperature 101.5°; pain in right iliac fossa; tympanites; no distension; great prominence in rectum; tumor punctured through rectum by Dr. Porter; drainage-tube. Perfect recovery in about three weeks.[4]

18. James W. B., aged twenty-six, South Boston. Dr. Fogg. December 11, 1891. December 11th began to feel uncomfortable — distress in bowels; next day severe cramp; constantly vomiting; pulse 104; no chill; improved, then suddenly grew worse; dulness in right iliac fossa; large tender tumor pressing upon rectum just back of bladder; general condition very bad; rectal trocar introduced into tumor; immediate discharge of fetid pus; canula fastened in mass; during night vomiting ceased and two and a half quarts fetid pus escaped through canula. Recovery. Appendix removed in June, 1892, by Dr. Beach during remission. Recovery.[4]

19. Thomas J. D., aged eighteen, Charlestown. Dr. Blood. May 16, 1892, strained himself lifting a stone. Some pain during week. Friday, symptoms severe. Temperature, 101.5°. Face dusky, red. Abdomen distended and tympanitic, very tender. Large mass felt by rectum. Operation; pus in abdomen thick and very foul. Appendix perforated and wrapped up in gangrenous mesentery. Adhesions down in pelvis, but whole cavity invaded. Supposed to be dying that night. Recovery.

20. Arthur J. L., aged twenty-four, Holbrook. Dr. Kingsbury. June 28, 1892. Pain in right iliac fossa a week ago. Severe constitutional disturbance. Localized peritonitis. Fetid pus evacuated. Appendix not removed. Recovery.

21. Patrick H., aged forty-four, East Boston. Dr. O'Keefe. July 6, 1892. Pain in bowels ten days ago. chills, fever, etc. Localized peritonitis. Evacuation of pus with fæcal odor. Appendix not found. Recovery.

VI. ACUTE CASES: OPERATION: DEATH.

1. Oscar G., Somerville. Drs. Aldrich and Morris. May 10, 1889. Two years ago, attack of abdominal pain, chill and tenderness. Second attack, April 29th. Sharp pain, right iliac region. Restless. Temperature 101°, pulse 88. Tenth day I was called and found him almost moribund. Immediate operation. Abscess in intestines. Drained through healthy bowels. Died in a few hours.

2. G. W. S., aged twenty-nine, Cambridge. Drs. Hildreth and Fitz. Massachusetts General Hospital. Friday, December 28, 1889. Instructor in Mathematics, Harvard University. Last Monday night, nausea, vomiting, acute pain in left hypochondrium. Vomitus gradually stercoraceous. General condition good. Abdomen tympanitic throughout. Resistance in region of pain. Diagnosis, acute intestinal obstruction. Operation: Eight feet small intestine overhauled, a portion very dark in color. No cause discovered. Wound closed. Patient died at four A. M. Autopsy showed gangrenous and perforated appendix.

3. Alexander F., student. Massachusetts General Hospital. December 11, 1889. No movement for fifteen days. Three days ago, sharp pain, free vomiting. Delirious on entrance. Temperature 102.8°, pulse 132, full but not strong. Abdomen tympanitic, tender, with large flat cake. Operation: One ounce thin, red, ichorous pus. Violent delirium continued after operation until death. Autopsy showed gangrenous appendix.

4. Thomas W., aged twenty-one, clerk, Woburn. Dr. Graves. Pain in right lower quadrant; abscess, which was opened. Did well for a week and then died with a recurrence, apparently, on the other side. General peritonitis.

5. H. H., aged twelve. February 27, 1891. Pain twelve days before in abdomen. Localized pain in region of cæcum. Nausea and vomiting five or six days later. Great improvement of symptoms on sixth day. On the eleventh day, sudden aggravation of symptoms; twelfth day, abdomen distended and tympanitic. Condition very serious. Operation urgent. I advised immediate operation; performed by attending surgeon. Large quantities of pus found and evacuated. Patient died that night.

6. Charles R., aged about twenty-four, Swampscott. Dr. Hunt. May 26, 1891. Appendicitis with spreading peritonitis. Taken Saturday with severe pain in right iliac region; tenderness. Abdomen tympanitic. Pulse 120, temperature 103°. Restless; vomiting. Operation: large abscess, with general peritonitis. Dark-colored, fæcal and very offensive matter. After operation pulse went down to 108, but patient restless and anxious. Bowels distended. Very little discharge from tube. Death. Autopsy; perforated and gangrenous appendix. General peritonitis.

7. George B. O., aged thirty, attendant at McLean Asylum. August 21, 1891. Four days ago complained of pain in right iliac fossa. Increased and abdomen became tender. Nausea, vomiting, thirst. Dull over region of appendix, tender, resistant. Operation: escape of dark-brown pus with fæcal odor. Fluid apparently free in abdominal cavity. Peri cæcal tissues gangrenous. Appendix perforated and gangrenous. Died at 9 P. M.

8. John J. H., aged twenty, medical student, Saugus. Dr. C. W. Galloupe. Temperature 100.5°, pulse 100. Pain and tenderness, vomiting and fever. No chill. Operation October 23, 1891. Abscess back of cæcum. Found something that felt like appendix but could not get it out on account of his bad condition. Increased vomiting. Died at 10 P. M. General peritonitis.

9. Corlis G., aged thirteen, Newburyport. Drs. Young and Howe. May 10, 1892. Pain and vomiting four days before. Temperature 101°, pulse 120. Subject to bilious attacks. Improved and then suddenly grew worse. Operation urgent. Large abscess down in pelvis. Appendix found, but everywhere adherent. Not removed. Died before morning. General peritonitis.

10. James M., aged twelve. Came into hospital latter part of June, 1892, with pain in right iliac fossa, nausea and vomiting. Operated on by Dr. Beach, who removed a gangrenous appendix. The boy did very well until the first week in July, when he developed, in the left iliac fossa, another tumor and abscess, which I opened. A week later he was taken with sudden, violent pains in the abdomen, and collapse. The family insisted on taking him home, where he probably died.

11. C. R. G., aged thirty-four. Massachusetts General Hospital. Dr. Finnegan. July 9, 1892. On July 7th was taken with pain in the epigastrium and right abdomen, followed by nausea and vomiting. Distention. Urgent case. Operation. Found much foul pus in the abdominal cavity and also yellowish fluid containing many flakes. The appendix, swollen and gangrenous, was removed. Irrigation. Died two days later. General peritonitis.

12. Thomas F. K. Entered the Massachusetts General Hospital on Tuesday, July 12, 1892. Dr. Fogg. On the preceding Saturday began to have pain in the right iliac fossa, followed by general abdominal distention and pain. Bowels moved by enemata. General tympanites. No marked dulness or resistance. Patient in poor condition, but it was thought best to operate. Very quick operation, which showed gangrenous appendix. Abdomen filled with serum, flakes, etc. Died in four hours. General peritonitis.

13. J. W. P., aged twenty-eight, Topsfield. Dr. Allen. July 23, 1892. Severe pain in lower abdomen on Wednesday. Violent constitutional disturbance — nausea, vomiting, distention, constipation — on Saturday. Operation Saturday afternoon. Long appendix, gangrenous and perforated, and containing large fæcal concretion. Large quantity of fæcal matter evacuated. Appendix ligated. Cavity irrigated. Death in three hours. General peritonitis.

VI. ACUTE: OPERATION HOPELESS: DEATH.

1. Mr. G. L. D., 1879, received a blow in right iliac fossa. Three weeks later pain in right iliac fossa. Death in ten

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[4] [illegible] Boston Medical and Surgical Journal, March 17, 1892.

days. Autopsy showed general peritonitis; appendix not observed. Probably appendicitis.

2. Mr. H. K., age about fifty. Vomiting, constipation, distension. Death on third day without operation. Autopsy showed gangrenous appendix and general peritonitis.[5]

3. Chinaman, about thirty-five years of age, with constipation, distension, feculent vomiting, pain. Died without operation in the course of a few hours. Probably appendicitis. Dr. Murphy.

4. Male, about twenty years of age. Had swallowed large numbers of water-melon seeds. Taken with pain and symptoms of intestinal obstruction. Aspirated several times. Patient died, probably from perforation of the appendix.

5. Mrs. P., aged seventy, Boston, 1888. Symptoms referable to liver and stomach. Appendicitis not suspected. Death at end of week. Appendix gangrenous and perforated, containing a gall-stone.

6. Edward M., aged twenty-six, Melrose Highlands. Drs. Jack and Fitz. February 19, 1888. Typhoid fever in September. Last Saturday taken with colic. No fever, no tumor. Dulness in right flank. Pulse 140. Patient moribund. No operation justifiable. Died in about an hour. Autopsy showed general peritonitis, with perforation of appendix.

7. John P. H., aged twenty-one, Melrose. March 28, 1890. Six days before, taken with vomiting and pain. Extreme tenderness. General peritonitis developed, and he became collapsed in twenty-four hours. Abdomen distended, tender over appendix. Pulse 156, temperature 97°, respiration 36. Died in a few hours.

8. F. B. M., aged twenty-seven, Lynn. Dr. Stevens, of Lynn. July 3, 1890. Pain for two days; vomiting. General condition very bad. Restless. Pulse 176, feeble and thready. Tenderness over appendix. No operation justifiable. Died that day. Autopsy showed appendix perforated and general peritonitis.

9. Henry P., aged thirteen, Massachusetts General Hospital. October 19, 1890. Pain in abdomen and fever for two weeks. Five days ago, sharp pain. Diarrhœa; constant vomiting. Abdomen distended, reddened, tender, tympanitic. Operation not justifiable. Patient died in one hour.

SUMMARY.

Acute cases : Recovery without operation	27
Chronic : Recovery without operation	4
Chronic : Death without operation	1
Chronic : Recovery after operation	6
Acute : Operation — recovery	21
Acute : Operation — death	13
Acute : No operation advisable — death	9
	81

Total recovery without operation	32
Total recovery with operation	27
Deaths with operation	13
Deaths without operation	9
	81

It will be noticed, that several cases have been added since the meeting at which these remarks were made. Most of them have been accompanied by a rapidly spreading peritonitis, with a speedy death.

The first and most important observation to be made upon these cases is the frightful mortality. Out of 81 cases 24 were fatal (29 per cent).

Of 34 cases operated upon, 13 died (38 per cent).

Of 43 acute cases where operation should have been done at some period, 22 died (a little less than 50 per cent).

Of 70 acute cases, mild, severe, and fulminating, 22 died (31 per cent).

If we exclude from the list of acute cases recovering without operation those in which the symptoms were mild and interference not seriously considered, we shall have left only 16 in which there would now be any suggestion of operating. This would leave a total of 59 acute operable cases with a mortality of 22 (37 per cent). In other words, during the past four years, at the lowest calculation, the mortality in acute appendicitis, as I have seen it in this community, is 31 per cent., and excluding the mildest cases, more than 38 per cent.

No one can seriously maintain that there would have been any such mortality if in the 70 acute cases the appendix had been removed immediately after the first onset. Even in the 34 cases that came to operation, with 13 deaths, there would have been no such mortality, and probably most of the nine hopeless cases would have been saved. I believe that it is a serious operation to open the abdominal cavity, and not without danger to life, but that the mortality is extremely small in simple explorations. Had the rule been followed in every case reported above — that the appendix be sought, ligated and removed — we should have done no more than we tried to do in 34 cases — than ought to have been done in 43 cases, and we should have subjected the 27 acute cases which recovered without operation to the slight, though always present dangers of an exploration. I have no doubt that the total mortality would have been enormously lessened, but it does not seem to me necessary to apply any rule of indiscriminate operating. There are many cases where the most enthusiastic surgeon cannot seriously advise the removal of the appendix. Such are the mild attacks of pain, with slight constitutional disturbance, which are so common and which never require surgical aid except in recurrent attacks which have become unbearable. If there is any rule to be laid down in this connection it is that in appendicitis the surgeon should have the opportunity to see and decide at once. There is an idea in this community that the third day is the time for operating. The third day is frequently the day of death, and the favorable opportunity has been lost forever. Even in serious cases it is my experience that chill is seldom observed. The absence of this symptom, therefore, is no reason for waiting, and its existence is of little consequence. If the attending physician does not send at once for the surgeon upon the recognition of those symptoms which denote a perforation of the intestinal canal it is obvious that safety can lie only in the formation of adhesions and a partial peritonitis. In most of the cases which are here recorded the favorable issue has been due to such adhesion-formation, and the fatal ones have been those in which Nature has failed to isolate the destructive processes set up by the escape of septic fluid.

The recognition of this condition and the distinction between a localized and a general peritonitis is always of the greatest importance; for whatever may be our views as to the proper treatment during the first hours of a fæcal extravasation, it is a matter of the greatest importance to decide, when called on the third day or later, whether to leave Nature alone in establishing her defence by adhesions or to interfere and possibly break down the barriers which may be successfully shutting off the fatal poison. I have no doubt that such interference at times causes much harm, and that a localized peritonitis may have been converted into a general inflammation by ill-advised exploration or too forcible explorations undertaken at this time. Unfortunately there is no rule by which we may be guided, except by experience, and I am unable to say why in one case I operate and in another advocate delay. In the cases detailed above I have never regretted operating, and but once or twice have been sorry that I delayed. In the delayed cases recovery followed, but it was clearly an error of judgment.

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[5] See Boston Medical and Surgical Journal, March 17, 1892.

It should be stated here that the operations upon the acute cases, with perhaps one or two exceptions, were undertaken immediately after examination.

Since the vast importance of this subject was first emphasized by Fitz before the Association of American Physicians, the conclusions reached by him have in the main been justified by our experience in this community. In the consideration of the mild cases there is very little to be said. If it were not for the fact that these may at any time become fulminating ones, the questions which have arisen would be very easily solved. There is no hard and fast rule by which all these cases may be judged, no course of symptoms by which we may be able with certainty to foretell the result. If we have a case beginning with a slight malaise, moderate constitutional disturbance, and without physical signs in the region of the appendix, and if we are able to say that such a case is in no danger of perforation, then we may safely leave it to the course of time and to Nature. Unfortunately we cannot judge of the prognosis in any case with certainty. One which begins mildly may at any time, without warning, assume the aspect of a violent peritonitis. The first question, therefore, to consider is whether a given case is to be one of general peritonitis or not. In my experience mild cases rarely become fulminating ones; yet several times this has occurred. The symptoms by which we may recognize this accident are to be found in constitutional disturbance, sudden rise of temperature, acute pain, general distension, with peristaltic paralysis and vomiting. This train of symptoms would indicate that perforation has taken place and that the general peritoneal cavity is being invaded. In such cases, the patient is placed at once in the utmost jeopardy, and his life depends upon the immediate recognition of this pathological condition and the most prompt operative interference. In my opinion nothing is more clear in this connection than that exploration must be early to be of any avail.

Clinically, the symptoms caused by acute inflammations of the appendix arrange themselves into three classes. In the first are the cases of localized peritonitis without abscess. The second comprises those cases the course of which may be mild or quite severe, resulting in the formation of abscess, either at the usual seat of the appendix or in some of the unusual positions in which that organ may be found. The third variety, and by far the most important one, is that in which the symptoms of perforation are the first ones which are noticed. The second or middle class, the more common class of operative cases, though these are not as numerous as the mild or "medical" ones, is that in which, after more or less pain and constitutional disturbance, we find prominence and localized tenderness with dulness and other signs of abdominal tumor. Such cases always mean circumscribed peritonitis and abscess, and the only safe course is to open them as early as they are recognized. In the pathology of this condition we find that the appendix is the centre of a circumscribed peritonitis from which the general abdominal cavity has been shut off by adhesions more or less firm. In my experience these adhesions are generally strong enough to withstand the continued formation of matter, although there is always some danger of rupture into the peritoneal cavity.

Perforation into some important viscus is the natural result of leaving such cases too long. The anatomical arrangement of this part of the body would make it more likely that perforation should take place into some soft viscus like the intestine or the bladder than that the strong abdominal walls should be pierced. The history of the cases left to themselves would show that perforation of the intestine or bladder does take place and that breaking externally is a very rare sequel. While many recover after this effort of Nature yet many continue a lingering illness and finally die of exhaustion.

Where the knife offers the complete and ready solution it does, there is no need of considering further the proper method of treatment. The early recognition of a circumscribed tumor with the existence of constitutional infection even slight, makes drainage of the abscess cavity imperative. Many of my operative cases have been of this kind. The constitutional symptoms have been of all orders of severity, from those in which there has been very little fever, slight acceleration of the pulse and moderate malaise, to others in which the symptoms have been of great severity. In all of them an operation has been imperative. Though some of them have died yet in no case has there been any reason whatever to regret the operation. In most if not all the fatal cases I have been called too late, and in one or two cases there have been complications not clearly understood. If any rule can be laid down in the treatment of appendicitis it certainly may be in the consideration of a circumscribed peritonitis or abscess of appendicular origin — early and thorough incision. Where the symptoms are severe and the patient feeble it is best to explore as little as possible. In those cases where the abscess is pointing, free incision is all that is necessary. In cases where there is a circumscribed peritonitis in the centre of a mass of small intestines, where it is necessary to go through the healthy abdominal cavity for purposes of drainage, we have a complication of a very serious nature. It is this form of appendicitis which, though not as hopeless as that in which there is a spreading peritonitis, requires judgment and experience in its treatment. The only rule in such cases is to explore early when there is neither cake nor tumor. One is seldom able to feel any resistance or any evidence of pus. Therefore the surgeon must be guided entirely by the history and the constitutional symptoms.

In cases of spreading peritonitis from a perforation of the appendix, where the focus of inflammation is not isolated by peritoneal adhesions, and where the symptoms point to an extravasation of the intestinal contents, immediate laparotomy is demanded. The more I consider this subject and the greater my experience the more I am convinced that such early exploration is imperative. Occasionally a case will begin violently, with every sign of perforation and extravasation and the symptoms will as quickly subside. Such cases occurring once in a while give us a false sense of security. I believe I have one such case in my list, where the onset was very grave and the recovery rapid and brilliant without operation. But for one such case ending favorably I have twenty or more that have ended fatally, most of which, I am firmly convinced, would have been saved by immediate laparotomy.

All cases which begin violently with sudden acute pain, with severe constitutional disturbance, distension and vomiting, with local tenderness, demand immediate operative investigation for the following reasons:

(1) It is impossible to say that the case is not going to be one of uncontrollable general septic peritonitis within a few hours.

(2) The condition of perforation admits of delay no more than perforations of the stomach, intestines or bladder, or the rupture of an extra-uterine pregnancy, or any other abdominal emergency.

(3) The mortality would undoubtedly be less in a hundred cases than by any method of selection.

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APPENDICITIS; SUMMARY OF CASES.[1]

BY J. W. ELLIOT, M.D.

In the year ending March 25, 1892, I have had eight cases of appendicitis, with six operations. All have recovered.

In the last two years I have been called as a surgeon to decide the question of operation in 21 cases, all but two occurring in private practice; 19 recovered and two died, a mortality of about 10 per cent. As the two deaths have already been reported, I will simply say that one of them was operated upon on the fourth day when the appendix was found to have entirely sloughed out of the cæcum, leaving a hole large enough to admit the finger. In the other case I was called too late, and found the patient far gone in general purulent peritonitis.

Of the 21 cases, 12 were operated on; of these 10 recovered and two died, a mortality of about 16 per cent., including desperate cases. The appendix was removed six times, with the two deaths referred to above. General purulent peritonitis, as evinced by free pus in the abdominal cavity, existed in four cases, of which only one died. In all the cases of purulent peritonitis the general peritoneal cavity was washed out and a drainage-tube placed in the pelvis, as well as one in the appendix region. The general peritoneal cavity was opened eight times, with the same two deaths. The earliest operations were done forty and forty-five hours after the first attack of pain.

Nine cases were not operated on, and all recovered. The highest temperatures of the non-operative cases varied from 103° to 100°. There was a definite tumor in the iliac fossa in only one of these cases, and indistinct resistance in one other. There was intense pain and tenderness in the same region in seven cases.

All the cases operated on showed well-marked local signs. In four the abdomen was swollen, tense and tympanitic. In two the abdomen was rigid and rather retracted, with a tumor in the right iliac fossa. In five there were distinct tumors, with little or no general abdominal swelling. The average highest temperature of the operated cases was slightly under the average highest temperature of the non-operated cases, which shows that the temperature does not tell us which are the most serious cases.

From my experience with these cases and many others, I have come to base my opinion and prognosis largely on the local signs. For if the appendix is inflamed or perforated, either there is an exudation around it which can be felt sooner or later, usually very soon, or there is a general swelling and tympanitic condition of the abdomen which indicates a beginning general peritonitis. The one possibility of error from this point of view is that there are a certain number of very acute septic cases in which a general infection takes place before the local symptoms begin. Therefore, if one is waiting for local symptoms, this acute septic condition must be kept in mind and acted on before the local symptoms appear.

To approach this subject from the other end, and say which cases ought not to be operated on. Excluding the very acute septic cases, the symptoms of which are ragged pulse, bad expression, stupor, delirium, chills, etc., one can with moderate safety wait for some tangible local symptom. In other words, in the absence of acute septicæmia, I do not operate until there are local signs (an abdomen distended, tympanitic or rigid, or resistance in the right iliac fossa). But when there are definite local signs I almost always operate at once no matter what the pulse or temperature may be. I understand perfectly that a cake in the right iliac fossa may go away and does go away in a certain number of cases, but it seems to me safer to operate, as the danger of the operation is small while the danger of rupture, septic poisoning and spreading gangrene is always present as long as the tumor remains.

From this point of view an accurate and early observation of the local signs becomes of great importance. I hardly need go over the details of these observations, but will simply mention a few points. One must distinguish fæcal accumulations which are very common in these cases. Local rigidity of muscles must also be distinguished from a definite tumor. One must learn that large abscesses may exist where there is no dulness whatever. I consider palpation by far the most valuable method of diagnosis. With practice one can feel intestines glued together and dilated, one can palpate an elastic mass deep under the intestines where it would not give a dull percussion note, etc. Ether helps greatly in cases of doubt. The early recognition of a slightly swollen and tympanitic condition of the abdomen is perhaps the most important point to be observed.

In very doubtful cases the local and constitutional signs must be balanced against each other. As I have said before in another paper,[2] with moderate local symptoms and severe constitutional symptoms I should go slowly, whereas with well-marked local symptoms and rather slight constitutional symptoms I should operate at once.

I think that the operation requires greater good judgment and skill than any known operation in surgery. While the local abscess cavity should not be broken into the general peritoneal cavity, one must not overlook pus in the pelvis. These two difficulties are of great importance in appendicitis. Many patients have been killed by breaking up a local abscess and many others have been killed because the surgeon had not recognized that besides the local abscess there was more pus deep in the pelvis. The skilled finger learns to estimate the strength of the walls of the abscess and to find the direction in which the pus burrows, while the constitutional disturbance helps to decide the probability of more pus in the pelvis or loin.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 6, 1892.

[2] Boston and Medical Surgical Journal, May 21, 1891. This article contains a report of the first thirteen cases referred to in this paper, also a discussion of the more complex conditions occurring in appendicitis.

It is not to be supposed that the above argument covers all the conditions arising in appendicitis or indicates an invariable rule for operating, but it is the underlying principle which has greatest weight with the writer in all cases.

The following cases operated on this year will serve to illustrate the points of the discussion.

Case XIV. *A Circumscribed Abscess between the bladder and small intestines, not adherent to the abdominal wall ; Operation on the sixth day ; Recovery.*

The patient, a man thirty years old, was taken with a pain in the abdomen on May 31st but kept about all the next day.

June 2d, he had more pain and diarrhœa, with a chill and vomiting.

June 3d, the bowels moved several times after a dose of oil. Opium pills were taken.

June 5th, Dr. S. E. Wyman, of Cambridge, found him with bowels obstructed, having griping pains with nausea and vomiting and difficult micturition. Temperature 100.6°, pulse 99.

June 6th, I saw the patient in consultation with Dr. Wyman. Temperature 101°, pulse 108. The patient said that he felt well, and had a good appetite, but had a tender spot in the right side of the abdomen. The abdomen was moderately swollen and tympanitic, the left side being soft while the right was hard and resistant. There was a tender lump three fingers broad running from the middle of Poupart's ligament towards the umbilicus. The rectum was ballooned open with a hard roof.

The operation was done at once. The abdomen being opened over the tumor, three inches inside the crest of the ilium, free ascitic fluid ran out. On pushing the finger into the tumor, a tumblerful of stinking pus was evacuated. The finger went into a long, deep pus cavity, running down into the pelvis between the bladder and intestines. The cavity seemed to be made of firm adhesions, for which reason the appendix was not separated. A small bit of inflamed omentum protruded, and was removed. The abscess cavity was washed out with hot water and filled with two drainage-tubes and iodoform gauze.

The tubes discharged a quantity of pus and two pieces of hardened fæces. Convalescence was slow, and it was found difficult to keep the tubes in place. The patient finally made perfect recovery.

Case XV. *Purulent Peritonitis; Excision of the Appendix and Drainage of the General Abdominal Cavity forty hours after the first pain ; Recovery.*

The patient, a boy of six, had pain in the abdomen on the evening of June 11th. He had had two movements of the bowels on that day.

June 12th, he had pain and vomiting all day. Temperature normal.

June 13th, there was no vomiting, and there was less pain. Temperature 101°. I saw him at four o'clock in the afternoon in consultation with Drs. Sullivan and Prior of Malden. The child looked sick and had a pulse of 130. The abdomen was flat and rigid, and very tender on the right side. Palpation was impossible on account of fear and nervousness. Ether was therefore given for diagnosis. Under ether the abdomen remained rigid but a lump the size of a small purse could be felt just inside the anterior superior spine of the ilium. I opened the abdomen at once, and found thick greenish pus around the appendix. The omentum and bowels were covered in patches with green sloughs. The appendix was large and very red. It was excised and the inner coats found to be gangrenous. There was a quantity of thin purulent fluid in the pelvis and in the right loin. The abdominal cavity was washed out with water; a glass drainage-tube was placed in the pelvis and a rubber-tube in the loin, with iodoform gauze. Under Dr. Prior's care, the patient made a prompt and uneventful recovery.

Case XVII. *Pus in the Appendix Region with beginning General Purulent Peritonitis ; Operation forty-five hours after the first pain ; Recovery.*

The patient, a school-girl of eighteen, was seen on November 21, 1891, in consultation with Dr. G. A. Bancroft, of Wellesley. She had been confined to her bed for two weeks in August with pain and tenderness in the right iliac fossa and had never regained her full vigor.

On November 19th, she was at school as usual. She had two movements of the bowels, and in the evening was attacked with an intense pain in the right side, accompanied by nausea, vomiting and a chill. At twelve o'clock that night Dr. Bancroft found her very restless and in great pain, with anxious expression and legs flexed. The abdomen was slightly tympanitic in general, but more so in the right iliac fossa. There was rigidity of the abdominal wall and extreme tenderness in the right iliac fossa. Temperature 101.2°, pulse 100. Opium was given freely.

November 20th. Temperature 101.4° and pulse 112 in the morning. Tenderness increasing. A dose of salts was given, but no movement followed. In the evening the patient felt better, and there was less tenderness, but there was more rigidity and a slight dulness on percussion in the right iliac fossa. Temperature 99.5°, pulse 86. An enema was given without result.

November 21st. Temperature 102.2°, pulse 120. Pain more severe. The abdominal wall was noticeably swollen on the right side. I first saw the patient at three P. M. The abdomen was generally tympanitic, and there was well-marked dulness and resistance in right iliac fossa. I operated at once. Making the usual incision, one inch inside the anterior superior spine of the ilium, came upon pus apparently localized, but not walled off from the general peritoneal cavity. Several ounces of thin pus were found in the pelvis. Gangrenous patches of false membrane were seen on the intestines. The whole abdominal cavity was washed out with warm water. A long glass drainage-tube was placed in the pelvis, and a rubber-tube with iodoform gauze in the region of the appendix. The appendix was not seen.

Recovery was uneventful. The glass tube was removed on the second day and the bowels moved at the end of a week.

Case XX. *Circumscribed Abscess; Operated on the third day, with the patient in extremis ; Recovery.*

The patient, a young girl of eighteen, entered the medical ward of the Massachusetts General Hospital on January 9, 1892. Ten days previous she had had cramps in the lower abdomen, and especially in the right iliac region, followed by diarrhœa and vomiting. The next day she was as well as ever.

January 7th, she had severe, sharp pain in the right iliac region. Dull pain continued in the same region with increasing tenderness. Not even gas had passed the bowels since.

January 9th. A catheter had been required for two days. She was very anæmic with a systolic heart murmur. Temperature 104.2°, pulse 130. The abdomen was moderately distended and tympanitic. There was an indurated mass in the right iliac region, dull on percussion and quite tender.

January 10th. Patient had slept all night; had but little pain, and was quiet all day, but the mass in the right side was perceptibly larger and more tender. In the evening the patient appeared stupid. The pulse became rapid and weak; temperature rose to 105°.

I was sent for and operated immediately. The patient seemed too feeble to stand even a slight operation. The mass in the right side was incised as quickly as possible, and several ounces of foul, stringy pus washed out. A finger in the incision came on a furry cavity down behind the cæcum. The appendix could be felt in this cavity. The opening was filled with two drainage-tubes and iodoform gauze. The patient was almost pulseless at the end of the operation, but with stimulants slowly rallied.

January 12th. Decided improvement since the operation. Abdominal swelling disappearing.

January 21st. General condition much improved. No discharge. Drainage-tubes removed.

January 30th. Patient quite well. Only a granulating wound left.

I cannot close this report of recoveries in cases formerly so terribly fatal without saying that it is the direct outgrowth of Dr. Fitz's fine work on this subject in 1886.

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THE NECESSITY OF A REVISION OF THE CLASSIFICATION AND NOMENCLATURE EMPLOYED IN THE VITAL STATISTICS OF MASSACHUSETTS.[1]

BY SAMUEL W. ABBOTT, M.D., OF WAKEFIELD.

In the following paper I do not propose to treat exhaustively of the subjects of the medical nomenclature and classification of diseases, but rather to introduce the subject in a suggestive manner with the view of asking the question whether any changes are necessary, and if so, what changes, in the classification and nomenclature now employed in the registration of deaths in this State.

What are the primary objects of the classification and nomenclature of diseases? An English writer has clearly said, "a good classification aids and simplifies the registration of diseases, helps toward a more easy comparison and knowledge of them, and toward the storing of experience respecting them, and facilitates the discovering of general principles from the collected, grouped and compared phenomena."[2]

In addition, medical nomenclature and terminology furnish the means for separating and distinguishing diseases and causes of death. Thorough registration must depend to a considerable degree for its efficiency upon the perfection of these means. The classification of diseases or causes of death differs little, if any, in its objects, from the great systems of classification employed in the different departments of biology. One of the greatest of modern teachers, Professor Agassiz, says, in commenting upon the object and utility of classification, "Have we, perhaps, thus far, been only the unconscious interpreters of a divine conception, in our attempts to expound Nature? And when in our pride of philosophy, we thought that we were inventing systems of science, and classifying creation by the force of our reason, have we followed only, and reproduced in our imperfect expressions, the plan whose foundations were laid in the dawn of creation, and the development of which we are laboriously studying; — thinking, as we put together and arrange our fragmentary knowledge, that we are anew introducing order into chaos? Is this order the result of the exertions of human skill and ingenuity, or is it inherent in the objects themselves, so that the intelligent student of natural history is led unconsciously by the study of the animal kingdom itself, to these conclusions, the great divisions under which he arranges animals being but the headings to the chapters of the great book he is reading?"

The intelligent student of medicine, and by the term student I would include the whole profession (for we are students as long as we live, and the science of medicine has anything to teach us), the true student of medicine is in the same position as the student of nature.

An ex-president of this Society, in his annual address, stated his belief that "Disease is a part of the Plan of Creation," and if we accept this proposition, which modern researches as to the cause of disease seem still more strongly to confirm, it becomes our duty to learn as clearly as possible what the plan is, and what is its natural order of arrangement.

A uniform and conventional classification of diseases is desirable, in order that the medical profession everywhere, in all nations and lands, may the more intelligently and harmoniously unite in the study of the diseases of mankind. It is neither necessary, nor is it possible that such classification should be immutable, since the progressive character of medical science is such as to require changes from time to time. When such changes are made, however, they should be agreed upon as the conventional opinion of the profession.

Two centuries ago the classification and nomenclature of disease was widely different from that of to-day. Who can tell you how far that of to-day differs from that which will become the admitted classification of two centuries hence? This want of uniformity interferes with the interpretation of medical statistics, especially when such statistics cover a long period of time. So far as the larger groups or divisions are concerned, there is no way of avoiding this disturbing cause.

The classification of the seventeenth century can scarcely be called a classification. In the mortality statistics of the city of London, compiled by Captain John Graunt of the Royal Society, and embracing the period from 1629 to 1660, no classification is attempted, and while the nomenclature includes many terms which are still in common use, there are many others which contribute quite largely to the mortality-lists, which have no place in modern nomenclature. The following are a few of these terms: Impostume, Chrisoms,

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[1] Read before the Massachusetts Medical Society, June 8, 1892, and recommended for publication by the Society.

[2] Elements of Vital Statistics. Arthur Newsholme, M.D., London, 1889.

Jaw faln, Calenture, Planet, Flox, Livergrown, Woolf, Rising of the Lights. Some of these were indicative of a superstitious origin, others were merely the names of symptoms and not of diseases.

In the next century, the eighteenth, Cullen attempted to bring order out of confusion by proposing four general divisions or classes of disease. This was a decided advance beyond the confused methods of his predecessors, and his four classes of (1) The Pyrexiæ, (2) Neuroses, (3) Cachexiæ, and (4) Locales, served to a considerable degree as a basis for the modern nosology of the present century, that of the Royal College of Physicians, now in common use among English speaking physicians.

"It has been said that it is of slight consequence how we arrange our knowledge, provided we do actually know what we think we know; and further that we should rest contented with the isolated fragments we can gather together, if we are careful to sift and verify them. It is obvious, however, that we cannot know any one thing accurately until we know it in its relation to others."[3] And herein lies the basis of that important branch of medical science known as diagnosis.

The tendency of the different sciences to overlap, and to trench upon each other's boundaries, increases with the progress of human knowledge, and there is scarcely any science which is not constantly borrowing from some other science. For example, the relation of zoölogy to geology, through the intermediate science of paleontology, may be quoted. Again, engineering has joined hands with chemistry on the one hand, and with physics on the other. Especially is this true with medicine, or the science of the human body in health and disease, which finds one handmaid in chemistry, another in botany, and allies itself with law in the department of medical jurisprudence. In recent years it has called to its aid the science of bacteriology to assist in the study of almost the whole group of infectious diseases.

The international importance of a conventional system of medical nomenclature and classification becomes yearly more apparent, and the subject forces itself to the front in the great scientific bodies which convene at regular periods throughout the civilized world. The International Medical Congress, the International Congress of Hygiene, and the International Statistical Congress have all deemed the subject worthy of consideration. It is in these bodies that the foremost men of science of different nations often come in contact, and opportunities are offered for comparing and unifying existing methods of work.

The following governments and authorities now have the most complete and thorough system of registration of vital statistics:

Great Britain, the collection of whose vital statistics is made by the Register General.

Germany, by the Royal Health Office.

Italy, under the direction of the Department of Agriculture, Industry and Commerce. Professor Bodio.

France. Published by the Consulting Committee of Public Hygiene.

Austria. The Royal Central Statistical Commission.

Hungary. The Weekly Bulletins of International Statistics. Prof. Josef Körösi.

Belgium. The *résumé* of demography and medical statistics by Dr. E. Janssens.

Sweden. Government Medical Statistics.

Switzerland. Monthly and yearly bulletins of the Statistical Bureau of the Confederate Cantons.

To these should be added the mortality reports of the ninth, tenth and eleven censuses of the United States (the latter being now in course of publication), and the registration reports of such of the older States as have established a system of registration.

Defects of our present system of registration. During the past ten years or more, several earnest attempts have been made, in which members of this Society have occasionally taken a prominent part, to secure in Massachusetts a Medical Practice Act, which would secure, both to the profession and to the people at large, such advantages as are enjoyed in other States having similar Acts in force. No greater argument could be found for the enactment of such a statute than that which may be found in a careful perusal of the certificates of deaths which are annually returned to the State authorities. Herein is also a standing argument for better medical education.

How may this defect be remedied? In the first place, the nomenclature and classification should be made to conform to the progress of medical science. Secondly, more thorough medical education should be constantly encouraged. Thirdly, the administration of the collection of vital statistics should be improved. The first authority to receive and collect the individual certificates of death from undertakers and physicians is the registrar in cities and the clerk in towns. A decided improvement has been effected in recent years by adding the authority of the local Board of Health, so that the registrar or clerk becomes the supervisor or collector of certificates of death, while the Board of Health issues permits for burial. But unfortunately, in at least one hundred and fifty towns in the State, no Board of Health exists, except the *ex-officio* Board, the Selectmen, a Board which is never elected in consequence of its expert knowledge of vital statistics. In some of the southern countries of Europe local inspectors are appointed (leichenbeschauer), whose duty it is to inspect or visit every household where a death has occurred and see that the certificates of death are properly returned. An army of such officials would hardly be in keeping with our own form of government, but a decided improvement might be made by requiring that all certificates of death in small towns should be submitted to some district medical authority at stated intervals, such authority to have power to return all deficient or erroneous certificates for revision to the original signers. Several thousand such letters of inquiry are annually issued in England for the purpose of correcting the returns. In addition to these improvements, the entire work of registration should be placed under efficient medical supervision.

Let us now examine briefly the system of classification in general use in Massachusetts, which was copied almost identically in 1885 from that adopted in England, and is nearly the same as that advised by Dr. Farr, well known as the foremost English authority in his day.

The general divisions adopted are five in number: (1) Zymotic Diseases, (2) Constitutional Diseases, (3) Local Diseases, (4) Developmental Diseases, (5) Violent Deaths.

In this connection these should all be considered as groups of causes of deaths, and not as diseases.

For example, the entire fifth group is composed, not of so many names of distinct forms of disease, but of different modes of death by external causes, or in other words, by violent means.

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[3] Prof. W. Knight: Essay on Classification of the Sciences.

In the class of Deaths from Developmental Causes, *old age*, for example, a most common term in death certificates, cannot be called a cause of death, much less a disease. It is simply a period of life, and the use of the term in certificates is simply a confession of our inability to give an exact statement of the true cause.

Let us now examine the list more closely.

The first question I have to propose, is whether the term *zymotic* as a general name of the first class or division may not be supplanted by some term which is better adapted to the progress of medical science.

Does the term *miasmatic* properly describe the diseases of the first group of Class I?

Does not Typhus Fever belong in the primary list?

Anthrax, fifty years ago, was a synonym for Carbuncle. Is it so considered at the present day?

Should not such terms as Metria and Nephria, now obsolete, be dropped from this list?

Should not the term Intermittent Fever be introduced into the primary list? (Ague scarcely covers the exact meaning.)

In Class II of the list now in use (Constitutional Diseases) may be found the most destructive of all diseases, in our climate and in our State (Tuberculosis). It was placed in this class according to the belief of the profession of fifty years ago. Does not modern observation, and a more intimate knowledge of its history, require that it should be placed in the First Class with other infectious diseases?

Under Class III, (Order 1), nervous diseases, we find at the head of the list the very indefinite term Cephalitis. Just what is meant by this term, it would be difficult to tell. It appears to be employed at present as a convenient omnibus into which are packed all deaths from diseases of the brain, which cannot be otherwise classified. More than six thousand persons (or over two per cent. of all deaths) are said to have died of cephalitis in Massachusetts in the five years ending with 1890.

In the same list of nervous diseases no place is given to deaths from diseases of the spinal cord, except those which may be included in the meaningless, "etc." at the end of the list.

In the division of diseases of the organs of circulation, Class III, the deaths attributed to heart diseases appear to have increased from a total of 352 in 1850, to 3,417 in 1890, and when these numbers are compared with the living population at those periods, we find that the actual increase amounts to nearly five-fold.

Two causes may be stated for this apparent excessive increase. One is the tendency in later years to more accurate diagnosis, on the part of educated and intelligent medical men. Many deaths were certified in the earlier years of registration, as deaths from dropsy, a term now very much less used, the disease being stated instead of the symptom. Another cause exists undoubtedly in the fact that in the past ten years the term "heart failure" has taken so strong a hold as to be employed in many certificates where no disease of the heart existed, either functional or organic. Some heroic remedy is needed for the cure of this evil.

These are but a small portion of the defects to which I have called your attention. Others exist in the employment of mere symptoms in place of the names of diseases, as in the terms paralysis, convulsions, dropsy, and also in the use of such indefinite terms as hemorrhage, tumors, etc. On the other hand it must be acknowledged that very great improvement has taken place in this direction in the past fifty years of registration. The ratio of deaths certified as having taken place from unknown or indefinite and ill-defined causes has diminished from 5.7 per cent. in 1868 to 1.2 per cent. in 1890.

The mortality attributed to diseases of the kidneys in Massachusetts in 1850 was only 18, while in 1890 it had increased to 1,273. It is not to be understood that this enormous increase of more than sixty fold, and more than thirty fold when compared with the population, is an actual increase, but is due to better medical education, and especially to a more correct diagnosis. The same is true of diphtheria, a term which has no place whatever in the registration returns until 1858. We are not, therefore, to understand that diphtheria (a disease which is very carefully described both by Hippocrates and Aretæus) appeared for the first time in Massachusetts in 1858.

The registration of the causes of deaths in any community, whether it be a city or a nation, furnishes the basis for sanitary work, since it is by means of the comparison of the registration returns of different countries and different cities that we are enabled to judge of the comparative prevalence in them of those diseases which are, in some degree at least, within the control of mankind, and hence are preventable. A thorough and efficient registration offers to us the opportunity of studying the effect of many conditions upon the health of the people, such as the conditions of sex, different age periods, density of population, occupation, civilization, intemperance, locality, seasons of the year, and other physical agencies. Hence it is, that the machinery of registration, the nomenclature and classification, should be in harmony with the progress of medical science.

Note. — After the reading of this paper, it was voted, that a committee of three be appointed by the President, to report at the next annual meeting upon the question whether any changes are necessary in the classification and nomenclature employed in the Vital Statistics of Massachusetts; the same committee to report what changes should be made, if any.

Drs. S. W. Abbott, C. F. Folsom, and F. W. Draper were appointed to constitute this committee.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Concluded from No. 4, page 90.)

BADLY UNITED FRACTURES IN THE UPPER THIRD OF THE FEMUR.

Lorenz has described his method of treating these deformities.[64] It consists of refracture (manually in recent cases, in others by linear osteotomy), abducting under extension the peripheral fragment till it was brought into line with the proximal. It was there fixed in the position by plaster-of-Paris till united. The leg can then be brought into its normal position. In old cases trophic shortening of surrounding parts, which prevent the abduction of the peripheral fragment, is overcome by section of the resisting muscles and fasciæ (generally the abductor tendons) by open incision; if not sufficient, the tense tendons in the popliteal space; then the tensor vaginæ femoris, rectus and sartorius, just below the anterior superior iliac spine. If, after union of the fragments in the abducted position and restoration of the limb to its normal median position, the insertion of the abductor muscles into the trochanter major were cut by the open method, the writer claims good results.

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[64] Wien. Med. Woch., 1891, xli, 1, 2.

FRACTURE IN THE UPPER THIRD OF THE FEMUR, EXCLUSIVE OF THE NECK.

In a paper of considerable interest, Oscar H. Allis,[65] considers the above subject, and draws the following conclusions:

After fracture of the shaft, the fragments are bound together by a hinge.

The hinge will be short if the vulnerating force was only sufficient to break the bone.

If the hinge is short, overlapping can only occur to a very limited degree. In all such cases the "shortening" will be due to angular displacement.

If the vulnerating force is greater than necessary to merely fracture the bone, the unexpended force will tear the hinge freely.

When the hinge is loose, overlapping, with or without angular deformity, is possible.

The shorter the hinge the greater will be the control of the upper fragment through the agency of the lower.

Traction on the lower fragment under all circumstances is incapable of restoring the long axes of the broken bone.

If the hinge is short, traction will draw down the upper fragment, but cannot efface the anterior angular tendency.

If the hinge is long, traction will exert but little influence upon the upper fragment.

Traction in the oblique direction has no advantage over horizontal extension.

The so-called "weakness" after fracture of the femur, is not due to deficient bone-repair.

"Weakness" is greatest when due to angular deformity with rotation of fragments.

Angular deformity, with rotation of fragments, compels both hip and knee to assume abnormal relations to the trunk.

Shortening, due to overlapping, without angular deformity or rotation of fragments, is no barrier to heavy, manual labor.

Treatment directed to the lower fragment is the probable agency in causing rotation in the lower fragment.

No surface treatment can insure a useful limb.

Osteotomy has corrected many a faulty union after months of waste time.

The conversion of a sealed (simple) fracture into an exposed (compound) one offers the only possible means for accurate diagnosis, and the only possible method of rational treatment.

Patients and surgeons who stop short of this procedure must compromise with best results.

ON THE RESULTS OF TREATMENT OF SIMPLE FRACTURE OF THE SHAFT OF THE FEMUR.

A committee of the American Surgical Association, agreeable to a vote of that Association, have made a report on "What should be considered as a satisfactory result [other than perfect union] in the treatment of a simple fracture of the shaft of the femur?"[66]

Thirty-four members of the Association replied to a circular that was addressed to them, and have come to the following conclusions:

A satisfactory result has been obtained in the treatment of fracture of the shaft of the femur when —

(1) Firm bony union exists.

(2) The long axis of the lower fragment is either directly continuous with that of the upper fragment or the axes are on nearly parallel lines, thus preventing angular deformity.

(3) The anterior surface of the lower fragment maintains nearly its normal relation to the plane of the upper fragment, thus preventing undue deviation of the foot from its normal position.

(4) The length of the limb is either exactly equal to that of its fellow, or the degree of shortening falls within the limits found to exist in 90 per cent. of healthy limbs, namely, from one-eighth of an inch to one inch.

(5) Lameness, if present, is not due to more than one inch of shortening.

(6) The conditions attending the treatment prevent other results than those obtained.

OLD DISLOCATIONS OF SHOULDER: TREATMENT.

Kocher[67] has published an interesting article on this subject, of which Browning has made a valuable review.[68]

Its important points are as follows: That neglected dislocations of this articulation are more frequent than of any other joint — statistically, one-half of such injuries. Mobility of shoulder due to motion of shoulder girdle may cause one to think that reduction has occured. Most old cases are subcoracoid, some subscapular. The elbow can often be approximated to the side since with time the tense parts (the capsule ligaments which prevent this in most cases) become stretched. In the luxiones inveteratæ the difference in length of the arms is greater. In complications, that is, fracture of tubercle or edge of glenoid, the stiffness increases with time.

From post-mortem and operative observation Kocher concludes that the impediments to reduction are more frequently due to changes in the articular socket than to adhesions in the new position. This would render these cases analogous to congenital dislocations of the hip, as far as treatment by manipulation is concerned. He advises free incision, division of the capsule, and restoration of the socket, except where complications are contraindicated. Resection results are not considered a success. Hence Kocher would resect only where there was no improvement after gymnastics, etc., or even impaired mobility, and where there was pressure on vessels or nerves. He claims to have reduced 25 of 28 older dislocations by his method of rotation, five being of more than four months' duration.

In regard to this method the following points are of value: The movements should be slow, and at times forcible. The abducted elbow is pressed against the trunk to finally push the head against the anterior edge of the socket. To gain a surer hold for rotation it is best to carry the elbow back even towards the median line posteriorly. Rotate outward very slowly, till the forearm is directed straight out (laterally). If this does not cause the deltoid to be distinctly forced up by the head, assist its (head) outward movements by traction with a compress under the arm. It is also of advantage to wait a moment after rotation is finished, as gradual relaxation by tension allows increased rotation outward. Third, push elbow forward across chest, also very slowly, as high as possible. Then gradually relax rotation, and finally rotate inward by placing hand (affected arm) on well shoulder. These old cases require more force than recent ones on account of adhesion to be ruptured. Kocher still considers the existence of the Y ligament (analogous to the Bigelow ligament of the hip) the cause of fixation in these dislocations. He emphasizes the statement that it is not irregular adhesions between the head or scapular which impedes reduction, but chiefly the adhesions about the old capsular tear between the border of the socket and the anatomical neck. He has three times fractured the humerus in reducing these cases; twice the head, once the shaft. Sixteen cases without an anæsthetic; 28 cases reduced by manipulation; 81 by operation.

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[65] Medical News, November 21, 1891.

[66] Medical News, September 26, 1891, p. 345.

[67] Deutsch Zeit. f. Chir., 1890, Bd. xxx, Hft. 4, 5.

[68] Annals of Surgery, 1891, vol. xiii, 123.

THE OPERATIVE TREATMENT OF OLD DISLOCATIONS OF THE SHOULDER.

F. Smital Graz,[69] contributes a valuable article on this subject. His experience is derived from the observation of fifteen cases — axilla, five cases; subcoracoid, ten cases. He operated twice. The remainder were reduced by "extension and elevation." The cases varied in duration from two weeks to five months. He concludes that operation is indicated where manipulation has failed. It is especially indicated in young patients, or where there is pressure on the axillary nervous plexus, — and where no serious degeneration reaction is present. Also, if there is vascular obstruction from compression. The operation is either arthrotomy or resection of the head of the humerus. He finds, on investigation, that arthrotomy gives 33 per cent. of successful results, mostly success only moderate; resection 62 per cent., good results. Hence, if a good functional result is desired, resection is the most satisfactory operation in old cases. Arthrotomy gives the best results in the more recent cases. Details of operative technique are given in the original article.

STERILE CAT-GUT.

E. Bratz contributes the following facts with reference to sterilizing gut:[70] That fat, of which gut contains about 15 per cent., must be removed before any antiseptic agent can exert a free influence on the material. That sterilization is best accomplished by dry heat, Reverdin method (three hours' exposure to 140° C.). It can then be kept in alcohol. He proposes also to prepare gut by soaking in ether for one to two days, — and these preserved in absolute alcohol after soaking for twenty-four hours in one-tenth per cent. aqueous sublimate solution, which is a modification of Brunner's method.

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[69] Wien. Med. Woch., 1890, bd. xl, 52; 1891, xll, 1, 2.

[70] Beitrag z. Klin. Chir., bd. vii.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

REGULAR meeting Wednesday, April 6, 1892, DR. A. T. CABOT in the chair.

DR. ALFRED WORCESTER read a paper on

THE TREATMENT OF APPENDICITIS.[1]

DR. J. W. ELLIOT presented

A SUMMARY OF CASES OF APPENDICITIS.[2]

DR. M. H. RICHARDSON reported on the

SURGICAL TREATMENT OF APPENDICITIS.[3]

DR. R. H. FITZ: I have but little to say upon this subject since the ground has been gone over thoroughly, and it is evident that although there are certain differences of opinion in point of theory, there is not much in point of practice, between the views of Dr. Worcester and those of the other gentlemen. Dr. Worcester's concluding remark, however, it seemed to me, goes too far. Of his judgment and excellent results in the cases upon which he operated, there can be no question; and I think it would be safe to say that most of the cases he has reported are such as would have been treated by Dr. Elliot or by Dr. Richardson in very much the same way. It seems to me, however, in virtue even of Dr. Worcester's experience, I should hardly feel justified in taking the ground that the moment the diagnosis of appendicitis is made the appendix should be removed. Although the operation at this time may prove very successful, yet in a large number of cases it is unnecessary. The experience of Drs. Elliot and Richardson and my own, covers a large number of cases, and is very distinctly to the point that nearly one-half of the cases of appendicitis get well without surgical treatment, and with such a percentage as this I think physicians in general would be very loath to follow the view which Dr. Worcester has presented at the close of his paper, that all those cases should have been operated upon. One should discriminate very carefully between the cases which are to be operated upon and the cases which are to be treated medically. As regards those reported by Dr. Worcester and the other gentlemen, I think we should all agree that they are such as would be operated on by surgeons in the habit of dealing with this class of cases.

It is important for us all to bear in mind that the course of an attack of appendicitis at any given time is not to be prognosticated with such a degree of certainty as to enable the surgeon or physician always to say that an operation should be done at once. On the contrary, it is very common for me to say that an operation may be necessary, at any moment, but it is advisable to wait twelve or twenty-four hours, for in the course of this time the aspect of the case may so change that there can be no question as to the wisdom of undertaking or of indefinitely postponing the operation. The surgeon should see cases of appendicitis very early but he should not feel that he is called upon to operate when he sees the patient for the first time; rather that he is asked to watch it with the physician since his judgment is likely to prove better than that of the latter as to the best time for operating. At the same time it seems to me it is not wise, in virtue of the fact that so many cases recover without operation and quite as quickly as if an operation had been done, that every case of appendicitis should be operated upon as soon as the diagnosis has been made.

Dr. Worcester is to be congratulated on the success of his operations; but, as we have seen from the experience of the other gentlemen, it does not follow because a case is operated upon, even when there is a circumscribed abscess, that the patient is to recover. I have lately seen two patients presenting very similar conditions, one was not operated on and died in twenty-four hours, while the other was operated upon but also died in twenty-four hours. One cannot, therefore, feel sure that the operation is bound to be a success, even in the cases of circumscribed abscess about the appendix and over the anterior abdominal wall where success seems most likely to result.

DR. GAY: There are two points in connection with this subject on which we want more light, and that will require more time than we have yet had. I do not see how any one can recommend an operation in every case of appendicitis, when so many recover without an operation, unless they are going to have repeated recurrences; if they do, then it would seem to carry out the idea that they had better be operated upon during their first attack as a rule. Of course it requires more time than we have yet had to know how frequently relapses are going to take place in these cases of appendicitis. I have had the usual experience of the other gentlemen, that a certain number do get well and remain well for three or four years. That is the length of time that my experience covers. Unless the future proves that these cases are pretty sure to have recurring attacks, then it seems to me we can still stick to the opinion advanced by Dr. Fitz, that all cases do not necessarily require operation.

Another point which is very important and which I believe was hinted at in Dr. Richardson's remarks, and that is, that about the thirty-seventh or thirty-eighth case was the first one in which he removed the appendix. I think I remember hearing Dr. Richardson say that he had operated on a good many cases and had never seen the appendix. Now that is a very important point. If in operating upon these cases all we need to do is to open the abscess cavity and wash out and drain, that is a comparatively simple affair. On the other hand, if you have not only got to open that cavity but hunt around, break up adhesions and dig out the appendix, then it becomes quite another matter. The first operation anybody can do; the second requires a good deal of skill, judgment and care not to do harm in the manipulations. I think I have done harm in taking out the appendix in two cases, that is, I think I made the hole in the bowel larger than it would have been if I had let the appendix alone. If these cases are going to get along as well by opening and draining, as by cutting off the appendix the operation will be much simplified. I think that this is the point we must decide. If there is a foreign body present it would seem that unless the foreign body comes out either by slow disintegration or by removal, we are not going to get rid of the trouble, and obtain permanent relief.

DR. F. B. HARRINGTON: There are forms of appendicitis in which there are severe pain and vomiting and there is no septic process and no danger to life.

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[1] See page 101 of the Journal.
[2] See page 111 of the Journal.
[3] See page 105 of the Journal.

We all recognize the violence of certain forms of abdominal colic (gastric and intestinal) and know that the symptoms are transitory and that the pathological changes are slight.

The removal of the appendix for chronic appendicitis has taught us that there may be great distress, with slight pathological change in the organ. I should suppose Dr. Worcester's position, would force him to the conclusion that it is better to remove the appendix as a precautionary measure, whether it be inflamed or not.

Dr. E. W. Cushing: I have had occasion to give a good deal of thought to appendicitis, having had an attack myself once, and having had a number of cases early in my practice where what seemed like simple cases in the beginning went on to death. There were three cases, each of them an only son and involving the loss of very valuable lives; in neither was observation of the temperature or the pulse of the slightest value. There was no serious symptom which Dr. Richardson mentions as coming on and indicating the approaching gravity. One of the patients in particular got up and walked around the room, and seemed to feel very much better, and the temperature went down only a short time before he died. At the autopsy it was found that the abdomen had pus in it. The second one Dr. Ellis saw with me in consultation, and thought the case was mild and might do very well, and the next day the patient died. All three cases occurred in the time when operation was not common; but they made a deep impression on me, and I certainly think that Dr. Worcester's view of the case is entitled to more consideration than it has received here to-night. Here we have a disease in which they say that the majority get well without operation, I think it is better to say, here we have a disease in which nearly half die with expectant treatment, and we never can tell beforehand which one is going to die. A similar question has been fought over with a good deal of bitterness, namely, the removal of pus when in the Fallopian tube. Undoubtedly a great many cases of pus in the Fallopian tube do get better, and some get well; but in the long run and in proper hands, it is shown that it is safer to evacuate that pus by removing the tube. Now, *a fortiori*, operation is more necessary with appendicitis because the pus tube does not open into the abdomen as surely as does the bowel, and it is not so likely at a moment's notice to flood the abdominal cavity with foul matter.

The point has not been brought up to-night sufficiently of what becomes of cases of appendicitis which are supposed to get well. They get well enough to go out of the hospital. I have within less than a year seen two cases which after supposed recovery came into my hands in a very bad condition. In one the pus had worked down behind the rectum and established communication with the bowels; it could be seen where it had been shut off by adhesions, forming masses of inspissated pus, and there was pus even in the clavicular articulation. Another case was that of a young girl who had had repeated attacks of undetermined nature. The appendix was found gone, and there was one perforation between the cæcum and small intestine, another which led to a sac down behind the peritoneum, also communicating with the rectum, and in that way the girl had been running down, so that although the pus was evacuated she did not recover. Now I am inclined to think that of the majority of cases which, as it is claimed, recover by expectant treatment, accurate investigation will show that a good many have recurrent attacks, a good many others obtain imperfect recovery and finally succumb to symptoms not attributed to the appendix as they should be, dying from what are supposed to be other causes. Therefore, it seems to me that Dr. Worcester is justified in the position which he takes, that if these cases can be diagnosticated, if it can be shown that there is pus there, that that pus should be evacuated; that if it can be found early where you have a large appendix becoming gangrenous, it is in skilful hands safer to remove it than to wait and hope and wish that that may prove one of the majority that recovers under expectant treatment.

Dr. Harrington: There can be no question about the cases in which pus is found or is known to exist. We certainly do not remove every tube that is painful. It is going beyond reason to say that every painful appendix must be removed.

Dr. A. T. Cabot: I should agree that all cases of appendicitis, where the diagnosis is made of pus existing, ought to be operated on, but I should not agree with Dr. Worcester that every case of appendicitis should be operated upon as soon as the diagnosis is made. Here is a case in illustration of my meaning:

Within ten days a young man, who had a mild attack of appendicitis two years ago, was suddenly taken with a sharp pain in the right lower segment of the abdomen. He was dining out at the time, was obliged to leave the dinner-table and go home. I saw him two hours afterwards. He had sharp pain and tenderness in the right inguinal region, with a temperature of 101° and pulse about 88. He had already taken twenty-five drops of laudanum, and as the pain continued severe, I gave one-fourth of a grain of morphia subcutaneously. That controlled the pain. He had a fairly good night. The following morning the pain was entirely gone, but there was tenderness over the site of the appendix. His recovery from this time was uneventful. He had a very mild attack of what I should call catarrhal appendicitis, in which there was no ulceration, no gangrene, and in which it seemed to me that an operation would not be justifiable. He made a perfect recovery, and was well in about four days. That is an extreme case of the mild type. Now, if we are going to make the diagnosis of appendicitis whenever the appendix is the seat of pain and inflammation, we ought to make a diagnosis of appendicitis in that case; and I think Dr. Worcester would hesitate in operating on such a case.

From that mild type upwards, we have a gradation of cases which require the greatest judgment to decide when they should be interfered with and when not. I think I should agree with Dr. Worcester, modifying his statement in this way: Whenever I should positively make a diagnosis of sloughing appendicitis or appendicitis with pus, I think that the operation is wise. Let me make one exception to that, and that is that sometimes the surgeon is called rather late, as the lump is rapidly disappearing, the abscess, if it existed, is evidently emptying itself successfully and completely through the bowel. In those cases we know that many of them get perfectly well without operation, and in such a case as that with the lump rapidly subsiding and symptoms improving, I should prefer to leave the abscess with only one opening towards the bowel rather than complicate by two openings, one into the bowel and one outward,

I had a very interesting case last summer, illustrating the way in which an abscess sometimes fluctuates in size when it is opening into the bowel. I was called to see a case with Dr. O. T. Howe in Lawrence, and found that the patient, whom Dr. Howe had left in a somewhat serious condition, had become much more comfortable through the day; and the tumor, which he had examined carefully before leaving the patient, had diminished decidedly in size. I advised waiting twenty-four hours, and as a matter-of-fact we waited forty-eight hours. The abscess refilled at the end of that time and I opened it. This abscess contained two concretions, one of which escaped at the time of the operation, and one subsequently. The patient made a good, though slow recovery.

There is one last point in the technique, and that is in regard to the treatment of the stump. I have always treated the stump, when I have amputated the appendix, in the way Dr. Worcester spoke of. I always thought it was the best way and the necessary way — that is, ligating it and turning the end over. The peritoneum, except in a very sloughing case, can generally be snipped off some little distance above where the amputation is done, and that cuff of peritoneum turned in over the end. The other day in New York, I asked Dr. McBurney what his method was, and he tells me he ligates with catgut and makes no effort to turn anything in, but leaves it as he cuts it. He has never had any reason to regret that course. I was interested, because this is, in some cases at least, rather a difficult or tedious part of the operation, and if it can with propriety be dispensed with, it seems to me that everything which shortens the operation, unless at the expense of some later danger, is of advantage to the patient.

Dr. Richardson: I think, as I stated a year or two ago, when Dr. Worcester read upon this subject, that we are really quite in accord in our views. though we may differ somewhat in our expression of them. As I understood him then, he excluded those cases which he termed medical ones. Now, I daresay that he would call these cases medical ones in which I have advised no operation and which have recovered.

I have used iodoform gauze very extensively in packing the wound, both in appendicitis, gall-bladder surgery, and in resection of the intestine, but I believe it is better to use sterilized gauze. I do not like iodoform. Like most other antiseptic, I think it does harm, and that it is much better to substitute an aseptic material. No one has referred to the danger of hernia after these operations. This complication should be considered in appendix operations as in operations for other causes.

I do not think we can tell how septic pus is from its odor. A foul discharge from an appendix abscess gets its odor from the intestinal contents. It does not follow that any very active germ is present.

In some cases I believe we may do harm by going in early and stirring up things, which if left to themselves would be firmly shut off.

Dr. Elliot: I have always tied the stump with silk, and have never had a fæcal fistula. I don't think stitching is necessary at all. I also never had a hernia follow appendicitis. I think the matter of doing harm at the operation rests entirely with the operator, and that is wherein the operation is difficult, wherein it takes great skill to do the operation. I don't think we ought to leave pus encapsulated because we are afraid of doing harm. The pus in my experience always does what you don't want it to. It is much better to operate early and carefully avoid doing any harm, which I think is perfectly possible.

Dr. Worcester: I wish very much that in the discussion the distinction could have been kept between cases of appendicitis and cases of perityphlitic abscess. I want to insist that it is impossible to come to any agreement about the proper treatment of appendicitis if we keep considering what we shall do in the last stages of perityphlitic abscess. Instead of its being a difficult or a dangerous operation, as has constantly been set forth by those who have spoken, the amputation of the appendix is not an operation that requires great skill. When Dr. Richardson last spring said that out of fifty cases of this disease he never had seen the appendix, I wanted to say he never had seen a case of appendicitis. He had seen only the dangerous sequelæ of appendicitis. Now, four years ago, we were reporting from Waltham cases of amputation of the appendix before there was pus in the abdominal cavity; and Dr. Whitney exhibited the appendices we sent in, and reported on them that while they were not perforated they certainly soon would have been so. Some of the gentlemen here to-night said they always found pus present, and you, Mr. Chairman, said you would operate in cases where pus was present. Now, if gangrenous appendices have been taken out where there was no pus present in the abdominal cavity, is not that better surgery than to have waited for the pus formation? In such a case it is easy to separate the delicate adhesions and to find the appendix. I submit that this is a very different operation from that of going into the abdominal cavity after a perityphlitic abscess. I agree with Dr. Richardson that often that may kill the patient. It is, however, a better thing to do than to wait in the hope that the foul pus will be absorbed or discharge itself safely through the rectum or in any other way. It is because, in half the cases of appendicitis, this dangerous condition of perityphlitic abscess is likely to occur, and because where it occurs in a certain proportion (perhaps half) the perityphlitic abscess does not attach itself to the anterior abdominal wall where its evacuation is easy and safe; it is because of this danger that I maintain it is the right treatment of the disease to amputate the appendix before this takes place. Certainly, it is the right treatment until the pathologist and clinician can tell us in what cases this disastrous result is to take place, and in what cases we are sure it will not take place.

As regards the waiting, I appreciate entirely the force of Dr. Fitz's remarks, and I want to say now that it seems ungrateful for me to criticise what Dr. Richardson and Dr. Elliot and Dr. Fitz say about appendicitis when I owe my life to their care of my own case. But with regard to that point of the surgeon's waiting with the physician, I believe with all my strength that many a case is sacrificed simply by that waiting. When a physician has made the diagnosis of appendicitis how he can then go home and sleep on it I cannot understand, because case after case is reported where inside of the first few hours general purulent peritonitis has taken place, and in some of the cases I have reported to-night, within forty-eight hours after the original seizure there was general purulent peritonitis and a gangrenous appendix free in the abdominal cavity. Not twelve hours' delay, not an hour's delay was admissible in such a case; and nobody ever knows what cases, no matter how mild they are, are going to be very severe in a few hours' time, and yet it is at the beginning that there is no danger from the operation.

With regard to the medical cases I spoke of before, I have been asked if I operated every time there was a belly-ache. I do not. I think sometimes people do have a little pain in the right side and yet do not require operation. In your case, Mr. Chairman, I think I should operate. I should not wonder if your patient would have another attack. If he had been operated on then he would not have another. I never have seen a case of appendicitis that I have not operated upon, where I have had my way, with the exception of one during the last two years where I considered the patient dying. In cases where the temperature was normal and the pulse 70 and very little tenderness in the right iliac fossa, but with the history of a subsiding attack, I have operated and have found foul pus, and I believe that it is in just those cases, that seem to be doing well, where the surgeon feels safe to temporize, that the great danger lies, and I certainly believe if the case is lost it is the fault of the medical attendant. I do not believe that the inflammation of a little worthless organ ought to be allowed to cause death. It seems, perhaps, presumptuous after a few cases to hold such an opinion as that, but, Mr. Chairman, it is now five or six years that we have been taking out diseased appendices, and it seems now as if either we must be color-blind or as if some others must be so, when a criticism is made such as Dr. Harrington's, that he does not see why I am not logically driven to an excision of the appendix before its inflammation.

We are not discussing possible improvements of the human body; we are discussing the treatment of inflammation of the appendix. If physicians will just keep in mind that they have no responsibility whatever in cases of appendicitis beyond that of immediately summoning a surgeon, and if surgeons will grow too timid to wait, there will be less fatality from the disease in the future, and less mistaken criticism of the early operation in that it is bold. I operate at first because I am so timid. I have had appendicitis myself, I have seen patients die of it, and now I am so afraid of it that I operate early and I cannot understand the boldness of the man who waits.

Recent Literature.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, assisted by Walter Chrystie, M.D., formerly Instructor in Physical Diagnosis in the University of Pennsylvania. Vol. II. With Illustrations. Philadelphia: Lea Brothers & Co. 1892.

This volume treats of syphilis, fevers, diseases of the respiratory, circulatory, hæmatopoietic and digestive systems.

Dr. Robert W. Taylor, Clinical Professor of Venereal Diseases in the College of Physicians and Surgeons, New York, presents the treatment of "Syphilis" in a very able and valuable article covering more than one hundred and fifty pages. He holds that the abortive treatment of this disease is unadvisable and useless. Under the systematic treatment, he considers the time for beginning treatment, the expectant, the continuous and the interrupted treatment of syphilis. The general methodical treatment is then discussed; also the various channels through which drugs may be introduced into the system, such as the mouth, the skin, by fumigations and by hypodermic injections. The latter method is described in much detail. The use of baths of several kinds follows. The care of the local manifestations is then taken up and the article closes with the indications for the treatment of the hereditary form of this disease.

"Scarlet Fever, Measles, Rötheln and Varicella" are ably discussed by Dr. J. Lewis Smith.

Professor William M. Welch begins his excellent article on "Small-Pox" with a consideration of prophylaxis, and makes a strong plea for isolation and vaccination.

Dr. Frederick P. Henry in his article on "Typhoid Fever" considers first its prevention and the conveyance of the infection by water and milk. The suggestions he makes in regard to the dietetic treatment, especially the use of water and of milk in this disease, will prove valuable to many physicians. The cold bath treatment and the use of antipyretic drugs are briefly considered. To intestinal antisepsis more space is given. The treatment of complications and the management of the convalescent stage concludes this excellent article.

The short article on "Typhus Fever" by Dr. Manuel Dominguez is not up to the standard of the other articles in this volume.

An article upon which it is pleasing to bestow praise is that by George Dock, M.D., on "Malarial Diseases and Dengue."

Dr. Jerome Cochran in his article on "Yellow Fever" discusses the Havana treatment of the disease, quoting verbatim to a considerable extent from Havana physicians. He then takes up the American treatment, and follows this by a consideration of the typical, mild and malignant form of the disease.

"Cerebro-Spinal Fever," an article of seven pages, by J. C. Wilson, M.D., contains the accepted treatment of this disease.

Dr. Ralph W. Seiss writes a brief and practical article "Diseases of the Nasal Chambers." This is followed by an article on "Diseases of the Pharynx and Larynx by Charles E. Sajous, M.D., and the general practitioner will find useful suggestions to guide him in the conservative treatment of these diseases.

In regard to the treatment of diphtheria, the most dreaded of all the infectious diseases, Dr. J. Chalmers Cameron, the writer of the next article, "Diphtheria and True Croup," thinks that the physician should have convictions and the courage to act upon them. He believes that the disease is a local one, due to the presence and action of bacilli, characterized by a deposit, accompanied by constitutional disturbances, and followed by nervous symptoms due to the absorption of a virulent chemical agent, which is produced by the local development of the bacilli. He thinks the proper treatment is the local destruction of the bacilli and that at the same time the general strength should be supported. Under laryngeal diphtheria both intubation and tracheotomy are considered. Dr. Cameron believes in the identity of true croup and diphtheria.

"Asthma, acute and chronic, Bronchitis and Whooping Cough," by Dr. James T. Whitaker is a good, but not very full, article. "Pulmonary Emphysema, Atelectasis, Abscess and Gangrene" by Dr. M. Howard Turrell, "Croupous and Catarrhal Pneumonia" by Dr. Edwin E. Graham, and "Diseases of the Pleura" by Dr. Rudolph Matas are also good articles. In describing the operation thoracentesis, Dr. Matas speaks of the syphon method with disapproval. It is unfortunate that one of the safest and simplest instruments for performing this operation should be dismissed in so summary a fashion.

"Acute and Chronic Diseases of the Heart" by W. H. Thomson, M.D., is an instructive article. No one could have presented the subject of the "Nervous Diseases of the Heart" better than has been done by Dr. T. Lauder Brunton. "Diseases of the Blood-Vessels" and "Diseases of the Blood," are well given by Dr. Frederick C. Shattuck, in two articles covering thirty-five pages.

The difficult subject of the treatment of "Diseases of the Liver, Gall-Bladder, Hepatic Ducts and Spleen" is represented in a practical and useful manner by Dr. J. H. Musser.

"Diseases of the Thymus and Thyroid Glands and Exophthalmic Goitre" is by Richard C. Norris, M.D. These diseases do not give much opportunity to the therapeutist, but Dr. Norris has written what needs to be said on the subjects.

"Diseases of the Mouth and Salivary Glands, including Mumps" are well outlined by Dr. O. D. Blackader. "Acute and Chronic Gastric Catarrh, Gastric Atrophy, Gastric Ulcer, Gastric Cancer and Gastric Dilatation" form the subjects of an excellent article by Dr. D. D. Stewart. The acute forms of these diseases are briefly considered, the chronic forms more at length. Dr. Stewart begins with general considerations, including the methods of examination of the gastric secretions.

Dr. Frederick Packard in his article on "Cholera Morbus, Cholera, Cholera Infantum and Dysentery" makes many excellent suggestions, but there are omissions that are too important to be overlooked. Under cholera infantum, too little is said in regard to the preparation of food. Under dysentery, among local means, no mention is made of the use of opium.

Dr. Edward Martin in his article on "Obstruction of the Intestines" insists upon operation in cases due to strangulation, volvulus, congenital malformations or to a foreign body; in cases of invagination he permits a few hours' delay to give time to try the effect of one deep-forced injection, but for intestinal paralysis the knife and hot saline flushing should be used as the last resort.

"Peritonitis, Appendicitis, and Perityphlitic Abscess" by Dr. Roswell Park is an excellent article, but the opium treatment of Graves for peritonitis deserves from its importance a little more detail than the author has given.

The concluding article by Dr. Charles B. Kelsey on "Diseases of the Rectum and Anus" is an admirable one. The method of treating hæmorrhoids by injections of carbolic acid, which has aroused so much interest, is condemned by Dr. Kelsey, as he thinks the advantages of the plan are more than counterbalanced by its risks.

This second volume of "Practical Therapeutics" is worthy of the confidence of practitioners, and will prove of daily service to its possessor.

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INFLUENZA IN NEW SOUTH WALES.

The chief medical inspector of New South Wales, Dr. J. Ashburton Thompson, has presented an elaborate report of the epidemic of influenza in New South Wales during 1891. The first invasion had occurred in 1890 in March, and the epidemic as seen in that year had already been reported upon by the same author. The reappearance of the disease found everything ready for making a careful study of its method of spread, its period of incubation, and similar subjects. It soon became evident that old theories advanced in previous epidemics were not only imperfect and insufficient, but as a general rule, entirely wrong.

The province of New South Wales is an especially favorable region for this work. It is a portion of a continent connected with the rest of the world only by sea. It contains a population sufficiently numerous, and yet not so large as to be a source of embarrassment. This population is distributed between one large city, Sydney, and several smaller cities and towns, connected by a simple system of railroads and other roads. It was soon shown that the spread of influenza was by slow degrees, both over the metropolitan district and over the country as a whole; and that it was in every respect accordant with what was known to be the habit of communicable diseases.

In studying the spread of influenza, the following questions were taken as a basis: "Is not human intercourse necessary to transport the contagion of this disease? Is not some stage intermediate between man and man necessary to its spread in epidemic form? Is the condition, which for convenience has been called aerial, of more consequence in the production of epidemics of influenza than it is in the production of other diseases which at times do, and at other times do not, assume an epidemic form?" Even before the reappearance of the epidemic, it had been pretty well established that the first of these questions could be answered unhesitatingly in the affirmative, and the third in the negative, not in New South Wales alone but in general. As to the second question there was good reason to think that it was ill-founded, a conclusion which was strengthened by the investigation of the later epidemic. Any person who chooses still to rely on the hypothesis of aerial dissemination is placed by Dr. Thompson in the following dilemma: either the infection must be equally diffused through the atmosphere or unequally. In the case of equal distribution the weakest in every part of the country should begin to suffer at the same time, but this does not happen. If it is unequally distributed through the air, there should be a certain regularity in the position of the towns affected at the same time. Neither of these methods of distribution are borne out by statistics. The position of the towns and the different times of their invasion point distinctly to a dissemination along lines of human intercourse. The observed behavior of influenza is precisely what would be expected of a disease that is communicable from person to person. The manner in which this infection is transmitted from person to person is the special subject considered in this report, the data for which were furnished from about 32,000 cases reported by 148 contributors. A rough estimation places the number of persons who sought medical advice at about one-eleventh of the total population.

The general susceptibility to the disease is not sufficient alone to explain the rapidity with which it spreads. This feature is due largely to the short incubation period, which is now generally taken to average two days. Liability to attack seems not to have been modified either by sex or age, or occupation or environment, or to any great extent by a previous attack. Susceptibility to it is very general, the reason of which seems to be that the conditions which contribute to protection from other infectious diseases have but little influence over it, and accordingly it actually attacks a large proportion of invaded populations; yet in the present example a majority escaped — though small, it was probably a majority. The question of how so many escaped the infection is not so easily answered. It is probable that personal communication with the sick or with their excretions is necessary; of these the saliva, and the faucial and bronchial mucus are probably the ones by which it is carried in the large proportion of cases. Although the bacillus of influenza has been shown to exist in greatest numbers in the secretions of the bronchi, it is probable that bronchial invasion is not necessary to make a patient liable to spread the disease. The mucous membrane of the mouth and pharynx are probably extensive breeding-grounds, and the secretions therefrom are being perpetually thrown into the atmosphere with the saliva, not only during coughing, but also while speaking.

Influenza seems to have analogies with diphtheria, and to be dependent as a constitutional disease primarily upon absorption of bacterial products lying on the more superficial membranes. As regards communicability, it may be said that the disease spreads from the sick to the healthy direct; and it spreads by such communication only, the secretions of the mouth and lungs furnishing the means of communication. Against a disease which spreads by direct communication, isolation of the sick is often useful, but although it is abundantly clear that epidemics of influenza begin by few and isolated cases it is by no means certain that any system of isolation such as is carried out in small-pox and scarlet fever, would be practicable in dealing with it. Under these circumstances the best resource is to make the essential characteristics of influenza as widely known as possible, in order to encourage the practice of such domestic isolation as ordinary dwelling houses will permit; and in order that persons shall understand that they are under a moral obligation not to spread disease, as they are to avoid injuring their neighbors in any other way, and abstain from resorting to public places, from paying visits and the like. Especial attention should be paid to the infectious character possessed by the secretions of the mouth.

The author suggests that, as in all probability the digestive tract is also invaded by the bacillus, disinfection of the primæ viæ should receive its share of attention. He has collected and put into tabular form much material intended to show the period of invasion, method of spread, and similar questions.

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SUMMER INDIGESTION AND PTOMAINE POISONING.

The Salisbury Beach Sickness.

Toxic alkaloids as the cause of many cases of accidental poisoning have come into prominence of late years, and not a hot season passes but instances of "ptomaine poisoning" are reported.

One of the most remarkable examples of the kind is recorded in the *Lancet*, September 20, 1890. On Wednesday, September 10th, one hundred and twenty men ate of a supper consisting of boiled beef, ham and tea, and the next morning more than one hundred men were suffering from symptoms of irritant poisoning, which commenced with severe vomiting and diarrhœa, great pain and tenderness in the epigastric and hypogastric regions, with loss of power in the lower limbs. There was general tremor, and the patellar reflexes were exaggerated. The prostration and collapse were alarming. The attending physician, Dr. Eland Stewart, attributed the poisoning to the beef, and believed it to be a case of ptomaine poisoning, a careful chemical examination having been made, and all mineral and the common vegetable poisons having been found absent.

Another instance is recorded in the *Lancet*, August 1, 1891, where a whole family was poisoned and one member died from eating canned salmon; all were seized with violent pains in the stomach, vomiting and diarrhœa. The stomach of the boy that died was found to be in a highly inflamed condition, "but no trace of animal or mineral poison could be detected in any of the viscera. The solder around the tin was examined, and found to be in perfect condition; and also a specimen of the salmon left in the can was found to be perfectly fresh." The reporter considers that all the symptoms pointed to irritant poisoning, but "in the absence of any metallic poison being detected the only explanation that can be offered is poisoning from the presence of ptomaines."

Poisoning by milk products has long been known; in Michigan, in 1883 and 1884, there were nearly three hundred cases of cheese poisoning, and from pieces of the cheese Vaughan separated a substance which he called tyrotoxicon. Many outbreaks following the use of milk are on record, and poisoning by the use of ice-cream is not rare. Cases of poisoning have also followed the eating of sausage, pork-pie, stale beef, veal and mutton, the symptoms being those of severe gastro-intestinal irritation. Ballard's description of the Wellbeck cases (as quoted by Vaughan and Osler), strikingly resembles the clinical picture of cholera morbus.

As to the special toxines concerned in poisoning by spoiled meats there is still much obscurity. The researches of Selmi and Brieger indicate a cadaveric evolution in which there is a gradation in the basic products, and in which, along with many harmless animal alkaloids, some of intense virulence appear. While neuredin, cadaverin, putrescin and saprin are physiologically almost harmless, cholin, trimethylamin and mydalein are violently toxic, but these do not ordinarily develop in the cadaver till at the end of from one to three weeks.

There is still more obscurity about the formation of toxic alkaloids of vegetable origin; if such exist, they are certainly slower of development, and only appear under peculiar circumstances. Green peas and beans, new potatoes, boiled cabbages, etc., have occasionally produced symptoms strikingly like those of cholera morbus, but no poisonous alkaloids have yet been found in these substances.

Much remains to be discovered relative to the kinds of ptomaines that may develop in both animal and vegetable substances out of the body, as well as of the toxines that may form in food after its ingestion. Doubtless the possibilities of ptomaine formation are very great, and under unusual conditions of insalubrity (hot, damp weather, sewerage emanations, etc.), the work of decomposition may go on with extraordinary rapidity, and under microbe influence, toxalbumins of great power may form in food that to the eye and taste is still wholesome. There is ever accumulative evidence to show that this is so. At the same time, every investigator of the subject is confronted by the fact that meats that have undergone partial decomposition are not necessarily unwholesome or toxic, for some savage tribes, as the Patagonians and Fiji islanders, habitually eat putrid meat that is swarming with bacteria, while game that is high (*faisandé*) is much relished by the typical English gourmand. From our present standpoint of enlightenment, as to the development of toxines during processes of putrefaction, we cannot well understand such facts as the above. It must, however, be borne in mind that robust, healthy stomachs are very tolerant of foods which under circumstances of enfeeblement of the digestive tract would cause sickness, that the digestive fluids are more or less microbicide, and that the liver when in a healthy state is capable of stowing away or destroying considerable quantities of poisonous substances.

With reference to poisoning by food that is of relatively innocuous character, there can be no question; such cases are of common experience. Some portion of the ingesta becomes an irritant poison. A fit of indigestion ensues; often the offending substance is speedily expelled by vomiting. The matter of idiosyncrasy need not here detain us; it is known that certain articles of diet, such as cheese, and shell-fish, are toxic to some persons.

Generally the state of the alimentary canal at the time is responsible for these morbid accidents. The most common and best known of the indigestions is that where in absence or deficiency of gastric juice and other digestive fluids, the alimentary bolus becomes a gastro-intestinal irritant, provoking vomiting, purging, and a catarrhal condition of the digestive tube.

A second stage in the process of acute indigestion is constituted by the fact of abnormal fermentations and decompositions in the alimentary canal; the food substances under the influence of bacteria unrestrained by the antiseptic digestive fluids, break up into organic acids and alkaloidal products of a lower order which are in part absorbed and produce constitutional disturbance. This stage borders very closely on that of ptomaine formation. There is good reason to regard cholera nostras and the gastro-intestinal catarrh of infants as kinds of ptomaine poisoning, due to multiple causes, of which weakening of the alimentary canal and consequent poverty of digestive fluids, the ingestion of food of an indigestible character, the putrefactive decomposition of the latter under the influence of microbes, and the formation of toxines are the principal factors.

That a considerable number of persons may be simultaneously taken sick after a large meal owing to the influence of causes such as have been above mentioned cannot be a matter of serious doubt. Similar conditions of faulty hygiene produce in individuals with similar organic susceptibility, results essentially the same.

The cases of supposed poisoning at Salisbury Beach, near Newburyport, Mass., which occurred during the week ending July 23d, are supposed to have been of this character; that is, cholera nostras. Out of a total of seventy persons who dined at the Cable House on the 20th, about fifteen were taken more or less violently sick within a few hours; some recovered after free vomiting, some after a dose of salts, five remained very sick for more than a week, and five died within forty-eight hours. The symptoms, we are informed, differed in no essential feature from those of cholera nostras of a severe type; those sickest had cramps — a few had general convulsions — all had a hot stage followed by algidity, and nearly all were for a time delirious. The obstinate vomiting suggested arsenical poisoning, and this early theory has not yet been entirely abandoned. A port-mortem examination was made in the case of one who died: there was found a moderate amount of gastro-enteric inflammation, but no more than would accompany any acute bowel affection of the summer time. The liver was congested and the gall-bladder distended as in cholera nostras. The stomach with its contents has been sent to a chemical expert for examination.

The real mystery connected with this local epidemic the details of which have occupied so much space in the daily papers, is the simultaneous sickness of so many individuals. It was found impossible to incriminate any one dish of the bill of fare of that day. Some laid their sickness to the blue fish, but about thirty persons ate of the blue fish with impunity, and some that were the sickest did not touch that dish. The baked veal, the fricasseed chicken, the fried cod, the haddock, the clams, the steamed pudding, the ice cream were one after the other ruled out, and for a time the blame seemed to be laid on the string-beans, of which all the sufferers were said to have eaten. Subsequent investigations have apparently shown that the beans were free from Paris Green or other recognizable poisonous ingredient.

The water used at the hotel was unquestionably foul, being obtained from a well on the premises into which sewerage may have found its way; at least there was found a notable impregnation of organic matter.

The general opinion, as advanced by physicians who have had opportunities for studying the facts, is that the sufferers were persons who had eaten rather immoderately of a number of more or less indigestible dishes, that the hot weather (the heat was excessive) the bad air and bad water of the place, co-operated in bringing about the necessary predisposition in the guests, and that the Salisbury sickness was a local and limited epidemic of cholera nostras. The whole affair is, however, still being investigated, and it is too soon to form any definite opinion on the subject.

MEDICAL NOTES.

The Cigarette Epidemic. — Our national legislators still find time occasionally to attend to the public health. A report severely condemning cigarettes has been made to the senate by the Committee on Epidemic Diseases. The committee does not believe that the federal government can do much about it, except perhaps to forbid their importation and prevent their manufacture in the District of Columbia.

Immigration during the first half of the current year has shown an increase over the same time last year of the least desirable elements. The Polish, the Austrian and the Russian contingents, which together form more than 20 per cent. of the incoming tide, have increased about 25 per cent. over last year. Altogether 353,961 immigrants were reported, against 325,307 for the first half of 1891. The Italian fell off about 15 per cent., and a notable diminution in volume from all parts of the United Kingdom is also reported.

Sanitary Condition of St. Augustine. — During the past winter a report of the presence of typhoid fever among the visitors at St. Augustine, Florida, kept many people away from that city. In a letter published in the *Medical News*, Dr. John S. Billings, as the result of a careful investigation of the sanitary condition of three of the principal hotels of that city, is satisfied that not a single one of the cases of fever which occurred in these hotels in 1892, was caused by water-supply or the drainage of the buildings. The milk-supply, the ice and the fresh vegetables have also been scrutinized and no cause for the disease found. There were no cases of typhoid fever among the residents of St. Augustine during the past year, and the general sanitary condition of the town is excellent. Between December 15th and April 25th about twenty-five cases occurred among 25,000 people who visited the town. The history of these cases is still being investigated, but Dr. Billings believes that although the source of the disease is doubtful, that they had no common source, but were each contracted at a different time and at a different place; and he feels safe in assuring those who wish to spend next winter at St. Augustine that they may do so with perfect confidence, and that they would probably be no more liable to be exposed to the contagion of typhoid fever than if they remained at home.

A Luxurious Hospital for Dogs. — A hospital for dogs is being built in West Philadelphia that promises to be a model of excellence in hospital construction. The building is to cover an area of 65 by 50 feet, and to consist of two stories with a basement cellar containing kitchen, etc. On the first floor the clinic-room opens directly into the non-contagious ward, while two isolating wards for distemper and mange patients lie on either side, so arranged that access can only be effected from the open space outside of the building. There will be special bath-rooms connected with the wards, and the arrangements for heating, plumbing and ventilating the hospital have received especial care from the Department of Hygiene of the University.

Ametropia in Horses. — In London, according to the *Journal of the American Medical Association*, it has become a recognized branch of the optical business to supply spectacles for horses whose eyes are the seat of some error of refraction. It is claimed as a well-authenticated observation that myopia is a prominent cause of the vice of shying, and the value of a good steed may be considerably enhanced by a cheap pair of concave glasses. But it is said that the principal use thus far made of horse spectacles is to make high-steppers of those animals whose walk in life is to be that of the hack or coach horse. While yet young the steed is given a pair of convex lenses set in stiff leather caps, entirely enclosing the orbit. The horse is misled thereby and sees the ground much higher than it really is; this has an effect upon his steppage that makes his motion admired and fashionable for cab and coupé purposes.

TREATMENT OF WOUNDS ON THE BATTLEFIELD. — At the last meeting of the German Surgical Congress at Berlin, the working of the army ambulance corps occupied a prominent place in the discussions. Langenbuch presented a paper advocating the early closure of wounds by ambulance bearers, on the ground that prompt attention would result in bringing the wounded into hospital with a portion at least of their injuries in an aseptic condition, and therefore healing by first intention would be attained to a greater extent. An opposite view was expressed by Esmarch, Trendelenburg, König, and Thiersch. They did not think that the materials used by the Red Cross men would be aseptic to say nothing of the state of cleanliness of their hands. Thiersch concluded by saying, "We will keep the wound open and close the discussion."

QUACKERY IN AFRICA. — An agent in South Western Africa, has written an account to Berlin of the present condition of quackery in that region. A year ago a foreigner went through the country carrying on his back a bag filled with plasters, wafers, and different concoctions, which he made out of anything that came at hand, and replenished as they became exhausted. He advertised himself as much as possible and received a most enthusiastic welcome from the natives. He remained only two or three weeks in one place and took payment in cattle which he drove with him from place to place. When he reappeared upon the coast he had a herd of about a thousand cattle. The German agent writes that the natives, after he had left the country, found out that they had been swindled, and that it would not now be safe for any dealer in medicines to travel through the district.

BOSTON.

NEW BUILDING OF THE BOSTON CITY HOSPITAL. — It is now probable that the new contagious wards of the hospital will be built upon land now used by the city forester as a nursery, on the western side of East Chester Park. These lands contain over ninety thousand square feet, and are directly across the street from the hospital land. It is also proposed to build a new surgical wing on East Chester Park.

THE MORTALITY IN BOSTON. — The excessively hot weather of the past week has raised the death-rate to 39. The total number of deaths reported was 352, as against 276 during the corresponding week last year. The number of children under one year was 119, under five years 179, and persons over sixty 64. The deaths re-ported as due to cholera infantum numbered 109, and the number due directly to the heat 18.

STERILIZED MILK FOR THE POOR OF BOSTON. — The sum of five hundred dollars a month during the hot season has been given by two persons, to distribute sterilized milk from the Walker-Gordon Laboratory among the poor of the city in cases of gastro-intestinal diseases of infants. The distribution is to be made through the physicians of the Boston Dispensary and the agents of the Society for the Prevention of Cruelty to Children. More contributions for this object are needed.

NEW YORK.

A CASE OF SMALL-POX. — Owing to the obscure and very unusual character of the disease, a case of small-pox was admitted to the New York Hospital in June, and remained in the wards for ten days before the true nature of the attack was discovered. The patient was a negro, and came from the Adirondacks, and as a result of this case six other cases of small-pox have since developed in the hospital.

TYPHOID FEVER AND BATHING. — In several cases of typhoid fever among young lads recently treated at Bellevue Hospital, it has been ascertained that the disease was probably contracted by the patients while bathing in the Hudson near the outlets of some of the city sewers.

TYPHUS FEVER. — When the steamer *Rugia*, which arrived from Hamburg on July 23d, with over 300 steerage passengers, was boarded at Quarantine, it was found that one of the passengers, a Russian Hebrew, was ill with typhus fever. He was removed to the hospital at North Brothers' Island as promptly as possible, with his wife and family of four children, who had been exposed to the disease. All the baggage was fumigated, and the *Rugia* was detained at the Quarantine station for observation.

CONVICTION OF AN ABORTIONIST. — A notorious abortionist by the name of McGonegal who in 1890 was convicted of manslaughter in the first degree and sentenced to fourteen years' imprisonment, but who by an unfortunate miscarriage of justice was released on bail, under a stay of proceedings, and permitted to resume his nefarious calling, has now been arrested on a similar charge in connection with the death of a woman in Long Island city.

DEATH AT 107 YEARS OF AGE. — William Sullivan, who was probably the oldest individual in the State of New York, died at Fairport, July 27th, at the age of 107. He always enjoyed extremely good health, and his death is said to have been caused by the extreme heat of the past week. He was born in Newark, N. J., December 2, 1785. He was married three times, and by his first wife had ten children, of whom seven are still living.

MORTALITY DUE TO HEAT. — Owing to the extreme heat, the most severe since 1876, the number of deaths reported during the week ending July 30th, amounted to 1,434, which represents an annual death-rate of 40.83 per thousand of the estimated population, and is 439 above the average for the corresponding week during the past five years. This is the heaviest mortality ever recorded in New York, with the exception of the week ending July 9, 1872, when it reached 1,592. The number of deaths reported on the last day of the week was 286, and this is the largest mortality ever recorded in a single day with the exception of July 3, 1872, when it amounted to 351. The number of deaths during the week which were due directly to the effects of heat, was 90.

Miscellany.

THE SUCCESSFUL TRANSFORMATION OF SMALL-POX INTO COW-POX.

Dr. Thomas W. Hime, of Bradford, England, gives in a recent issue of the *British Medical Journal* an account of experiments which tend to show that a calf can be inoculated with fresh variolous lymph and, without exhibiting any reaction at the point of inoculation, undergo a fever and a discrete eruption, fairly typical of variola in man of a mild grade. Furthermore, that man and beast alike inoculated with lymph from the quasi-variolous calf develop vaccinia and not small-pox. Three other calves and one man in succession were inoculated, and all exhibited a typical vaccinia. Several people, seven in all, were vaccinated from the first calf which exhibited vaccine signs, and all underwent the characteristic appearances of vaccination.

It was formerly held, especially in France, that the two diseases were not interchangeable. Hime attributes his success to the fact that in the experiment he used a calf instead of an adult heifer as others had done.

ANTHROPOLOGY AT THE WORLD'S FAIR.

Prof. F. W. Putnam of Cambridge, Mass., is superintendent of a large exhibit of anthropology at the coming World's Fair in Chicago. The department will occupy the northern half of the gallery of the main building, and also a strip of land along the lagoon, where groups of native American people will be quartered in their natural habitations.[1]

There will be a representative exhibit of the remains of pre-historic man in America, and large models of the most noteworthy of their works, such as the Serpent Mound and Fort Ancient. Central America will be well represented. Along with this there will be an exhibition of primitive industries, customs, and the like. The section of physical anthropology will illustrate modern methods of recording bodily characteristics, and will show charts recording the results of many thousand measurements. A large body of workers are now engaged in measuring native Americans in all parts of the land. Measurements of children are also being gathered for the study of the development of physical characteristics. With this department there is also connected the department of history, so that the exhibit of primitive man and his works is followed by that of the men whom Columbus met, and thus prepares the way for the exhibit of the historical changes in America during the last four centuries.

There will be in operation throughout the six months of the exposition a psychological laboratory in which simple tests will be made of the senses, sense-judgments, rapidity movements, and simple mental processes, memory, and so on; the data thus accumulated will be statistically utilized to obtain normal standards. There will be also exhibited apparatus employed in psychological research, results obtained, as illustrated by charts, diagrams, photographs, etc.; and as complete a representation of psychological activity as the facilities will admit. The department is in charge of Prof. Joseph Jastrow, of the University of Wisconsin, and is a part of the general department of which Prof. F. W. Putnam is chief.

THE ELECTRICAL RESISTANCE OF THE URINE.

A short paper with this title has recently appeared in the *Lancet*, by Dr. Dawson Tucker.

The object of the inquiry was to ascertain the electrical resistances of various kinds of urine, both in states of health and of disease. The measurements were made by means of a Wheatstone's bridge with alternating currents and a telephone according to Kohlrausch's method and at a temperature of 65° F.

It would appear from the observations — some 500 in number — that the specific resistance of a normal urine amounts on the average to about 45 ohms, and that it varies as a rule more or less inversely with the specific gravity. When the specific gravity is high and when the urine holds in solution much salts, its electrical resistance is low, and *vice versâ* where the specific gravity is low, the resistance is high. The amount of urea has but little to do with the resistance in ordinary urines. A number of experiments were made with artificial urines and from these it is clearly apparent that the electrical resistance depends almost wholly upon the salts, and that it is only when these are quite absent, or very much diminished that the influence of the urea makes itself felt. The resistance is a measure of the salts, particularly of the chloride of sodium. Some interesting and useful results come from the employment of this method. There are in certain diseased conditions exceptions to the rule laid down that "the resistance varies inversely with the specific gravity"; amongst these are croupous pneumonia and diabetes mellitus. The increased resistance in the former is due to the diminution in the chlorides, and in the latter to the great relative diminution in all the salts, while the specific gravity is raised above the normal by the sugar, but the very presence also of the sugar, if in large quantities, tends to slightly raise the resistance.

In acute and chronic Bright's disease, in certain respiratory affections, in pernicious and other anæmias, etc., the resistance is high; in neurotic individuals of active mental capacity, and in certain other conditions, the resistance is low. The method may be used in both diagnosis and prognosis, and has appeared to be a barometer not merely of the efficiency of a patient's kidneys, but also of his general condition. The lower the electrical resistance the healthier, *cæteris paribus*, will be the condition of the kidneys; and where a patient is improving the resistance will diminish from day to day and *vice versâ*. The tables show a very high resistance in one patient with sub-acute Bright's disease, slowly falling to the normal point during convalescence: also, the electrical resistance of the urine in a patient with pernicious anæmia.

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[1] Popular Science Monthly, August.

METEOROLOGICAL RECORD,

For the week ending July 23, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...17	30.09	65	76	54	55	50	52	W.	S.W.	12	10	C.	C.	
M..18	30.09	70	81	60	49	47	48	W.	S.W.	12	10	C.	C.	
T..19	30.04	73	83	63	60	63	62	S.W.	S.W.	11	15	O.	O.	
W.20	29.95	76	83	69	72	40	56	W.	N.	10	10	C.	C.	
T..21	30.10	66	75	58	49	57	53	N.W.	S.	8	15	C.	C.	
F..22	29.98	76	88	63	55	61	58	W.	S.W.	14	18	C.	O.	
S..23	29.91	78	86	69	65	57	61	W.	S.E.	11	4	C.	C.	
☞	30.02	72	82	62	58	54	56			11	12			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 23, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	1081	647	40.59	7.20	30.24	4.32	1.26
Chicago . . .	1,250,000	707	357	14.14	7.14	.98	1.26	9.24
Philadelphia .	1,092,168	546	390	34.30	7.20	27.36	3.42	.72
Brooklyn . .	955,333	654	424	43.50	4.95	36.30	3.15	.45
St. Louis . . .	477,873	194	100	29.07	7.65	24.48	.51	—
Boston . . .	469,645	281	155	38.16	11.52	36.00	1.44	.36
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	131	47	19.00	12.16	15.20	2.28	1.52
Cleveland . .	281,353	122	71	36.90	4.92	27.88	1.64	6.56
Pittsburg . .	255,000	132	68	35.72	6.84	24.32	2.28	4.56
Milwaukee . .	231,440	—	—	—	—	—	—	—
Washington .	230,360	159	81	35.91	9.45	31.50	1.89	2.52
Nashville . .	87,754	40	15	35.00	7.50	30.00	—	5.00
Charleston . .	56,048	—	—	—	—	—	—	—
Portland . . .	40,000	11	3	18.18	—	18.18	—	—
Worcester . .	92,313	55	38	47.32	2.64	43.68	1.82	—
Lowell . . .	82,455	45	26	39.96	8.88	37.74	2.22	—
Fall River . .	82,128	56	36	58.74	—	51.62	1.78	—
Cambridge . .	74,644	37	22	59.40	5.40	51.30	2.70	—
Lynn	60,809	15	7	52.28	13.33	46.62	—	6.66
Springfield . .	47,052	18	9	44.44	5.55	38.88	—	—
Lawrence . .	45,910	26	17	46.20	3.85	38.50	—	3.85
New Bedford .	44,947	24	20	58.24	4.16	58.24	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Salem	31,495	6	2	33.33	—	16.66	—	16.66
Haverhill . .	30,065	7	2	—	14.28	—	—	—
Chelsea . . .	29,479	14	7	14.28	7.14	14.28	—	—
Fitchburg . .	27,444	11	8	54.54	9.09	54.54	—	—
Gloucester . .	26,805	5	3	20.00	20.00	20.00	—	—
Malden . . .	26,783	3	1	—	66.66	—	—	—
Newton . . .	26,498	12	4	33.33	8.33	33.33	—	—
Brockton . .	26,464	1	1	—	—	—	—	—
Taunton . . .	26,464	8	3	12.50	25.00	—	—	—
Waltham . .	20,942	4	0	—	—	—	—	—
Pittsfield . .	18,294	2	0	—	—	—	—	—
Quincy . . .	17,930	11	6	36.36	18.18	27.27	9.09	—
Northampton .	15,684	2	0	—	—	—	—	—
Everett . . .	14,745	6	4	66.66	—	23.33	—	—
Newburyport .	14,031	4	2	25.00	—	25.00	—	—
Amesbury . .	13,561	3	2	66.66	—	66.66	—	—

Deaths reported 4,438: under five years of age 2,587; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,542, consumption 324, acute lung diseases 221, diarrhœal diseases 1,185, diphtheria and croup 119, typhoid fever 113, measles 36, whooping-cough 31, scarlet fever 26, cerebro-spinal meningitis 15, malarial fever 13, erysipelas 5, small-pox 4.

From measles New York 21, Brooklyn 9, Chicago 3, Philadelphia 2, Springfield 1. From whooping-cough New York 11, Brooklyn 6, Philadelphia and Pittsburgh 4 each, Chicago 3, St. Louis, Worcester and Fall River 1 each. From scarlet fever New York 7, Chicago, Brooklyn and St. Louis 4 each, Philadelphia 3, Pittsburgh 2, Fall River and Cambridge 1 each. From cerebro-spinal meningitis Chicago 7, New York 4, Everett 2, Brooklyn and Boston 1 each. From malarial fever New York and Brooklyn 4 each, St. Louis 3, Cleveland and Fall River 1 each. From small-pox New York 4.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending July 9th, the death-rate was 17.1. Deaths reported 3,347: acute diseases of the respiratory organs (London) 170, diarrhœa 161, measles 134, whooping-cough 83, scarlet fever 49, diphtheria 47, fever 28, small-pox (London) 1.

The death-rates ranged from 10.2 in Norwich to 23.2 in Sunderland; Birmingham 17.4, Bradford 15.2, Hull 19.4, Leeds 16.2, Leicester 13.6, Liverpool 22.1, London 17.2, Manchester 21.1, Newcastle-on-Tyne 14.4, Nottingham 17.2, Sheffield 16.8, West Ham 16.8.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending July 16th, the death-rate was 17.9. Deaths reported 3,491: acute diseases of the respiratory organs (London) 168, diarrhœa 260, measles 131, whooping-cough 80, diphtheria 60, scarlet fever 44, fever 23.

The death-rates ranged from 9.8 in Croydon to 22.6 in West Ham, Birmingham 18.1, Bradford 17.1, Brighton 10.7, Hull 13.5, Leeds 13.9, Leicester 19.7, Liverpool 21.5, London 18.9, Manchester 17.6, Newcastle-on-Tyne 17.4, Sheffield 16.8, Sunderland 17.7, Swansea 17.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 23, 1892, TO JULY 29, 1892.

Captain William O. Owen, Jr., assistant surgeon, U. S. A., leave of absence extended fourteen days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 30, 1892.

P. A. Lovering, surgeon, ordered to the Marine Rendezvous, Boston, Mass.

SOCIETY NOTICE.

American Dermatological Association.— The sixteenth annual meeting will be held in New London, Conn., September 13, 14 and 15, 1892.

E. B. Bronson, M.D., New York, *President.*
G. T. Jackson, M.D., New York, *Secretary and Treasurer.*

RECENT DEATHS.

Gilman Kimball, M.D., M.M.S.S., died in Lowell, July 27th, aged eighty-seven years. He began the study of medicine in Dartmouth, 1823, and later spent two years in the office of Dr. Edward Reynolds, in Boston. He practised for a time in Chicopee, and later studied for some time in Paris. He received the degree of M.D. from Berkshire Medical College in 1837, from the University of Vermont in 1840, and from Yale in 1856. He was brigade surgeon during the rebellion under Gen. Butler, and was for twenty-six years surgeon of the Lowell Hospital.

Hugh Doherty, M D., M.M.S.S., died in South Boston, July 31st, aged forty-nine years. He served in the war as a medical cadet, and at the close entered the Harvard Medical School, from which he graduated in 1867. He spent some time in Dublin, and since his return has practised in South Boston.

Hermann Nasse, Professor of Physiology at the University of Marbury, died in the early days of July, aged eighty-nine years.

Frederick LeGros Clark, F.R.S., F.R.C.S., died July 19th, aged eighty-one years. For many years he was surgeon at St. Thomas's Hospital, London, and lecturer there on Surgery and Anatomy. He was the author of a work on Anatomy and Physiology of the Nervous System.

BOOKS AND PAMPHLETS RECEIVED.

De La Greffe Dentaire par Restitution. Par J. Ferrier. Reprint. Paris, 1892.

Twenty-Fourth Annual Announcement of the Kansas City Medical College, Session of 1892–93.

University of Michigan. Department of Medicine and Surgery. Annual Announcement. 1892–93.

Fourteenth Annual Announcement of the St. Louis College of Physicians and Surgeons, Session 1892–93.

Original Articles.

THE DIAGNOSIS AND SYMPTOMS OF ACUTE INTESTINAL OBSTRUCTION.[1]

BY FREDERICK C. SHATTUCK, M.D.
Jackson Professor of Clinical Medicine in Harvard University, Physician to the Massachusetts General Hospital, etc.

Modern surgery, which does not hesitate to explore the intimate structure of nearly every organ except the heart, has awakened fresh therapeutic interest in subjects which, but a few years ago, seemed from their very nature incapable of further material advance. The possibilities thus opened render it important constantly to review our knowledge, and to strive to perfect accuracy of diagnosis, not only for itself but for the help it affords to intelligent interference. As long as the risks of the knife were about as great as those of the condition which it might remedy, the stimulus to accuracy, but above all to promptness of diagnosis, was far less than it is to-day.

Acute intestinal obstruction is a condition which is highly illustrative of the above remarks, and, in what follows, the attempt will be made briefly and broadly to indicate the present status of our knowledge as regards acute stoppage of the bowel, its nature and seat.

The first question which naturally presents itself is the early determination of the existence or non-existence of acute intestinal obstruction in the case in hand. This question is also first in importance. Its solution is generally less difficult than are those of seat and nature, and has a more important bearing on the management of the case. The leading symptoms are abdominal pain, usually sudden and severe, with the more or less rapid sequence of nausea, persistent vomiting, perhaps soon becoming fæcal, distention of the belly, and collapse. The failure of the bowels to move is a less distinctive *early* symptom of the condition than the term obstruction or stoppage of the bowel would seem to imply, and for the following reasons: First, the development of the symptoms may be so rapid in one whose intestinal functions have been previously perfectly performed that non-defecation may be of little or no value as a sign during the all-important early period when efforts to move the bowels should be strictly limited to enemata; or, secondly, the contents of the gut below the obstruction may be evacuated spontaneously or artificially; or, finally, the obstruction may be of such a nature as not completely to occlude the lumen of the tube, thus allowing the passage of contents the nature of which may be suggestive. While, therefore, the failure of the bowels to pass fæces or gas is an important, it can hardly be ranked as one of the leading early symptoms.

We must next consider those affections or conditions other than acute obstruction which have similar or nearly identical symptoms, and which must thus be excluded in reaching a diagnosis.

Identical symptoms are presented by any of the forms of external strangulated hernia. To an audience of surgeons it is not necessary to dilate upon this head. And yet I have a vivid recollection of a case in the medical ward of the Massachusetts Hospital in pre-antiseptic days. Well-marked symptoms of intestinal obstruction were present and a surgical opinion was sought as to the existence of hernia. The surgeon found no hernia, and expressed the opinion that no hernia could have existed with such normal rings. The autopsy showed that a portion of the calibre of the intestine had been caught in the right ring long enough to result in intestinal paralysis and peritonitis. Vomiting, pain and collapse may be sufficiently marked in a first attack of gall-stone impaction to simulate obstruction of the gut. It may be stated here that experience has led me to distrust the relative immunity of young adults from the results of cholelithiasis, as affirmed in most of the books. If I am right, age and sex cannot weigh much in the differentiation. The seat and character of the pain may be suggestive; the occurrence of jaundice within twenty-four hours is almost distinctive. In recurrent attacks the history of the case is of prime importance. Renal colic is a possible, though not probable case of error in diagnosis.

The persistent vomiting, epigastric pain, and collapse of acute irritant poisoning need only to be mentioned, the history and circumstances attendant on the case preventing serious danger of confusion.

Similar symptoms, as Fitz has so well shown, may be due to acute pancreatitis. In this connection a well-known case comes to my mind, a case in which a majority of five to one in consultation decided in favor of laparotomy under the idea that obstruction was probably present. The majority was wrong and Fitz's diagnosis of acute pancreatitis was confirmed. The incidence of this affection, as far as is now known, almost exclusively to middle life; the localization of the pain in the upper abdomen; and the patency of the colon, the transverse portion of which overlies the pancreas, furnish the means of its differentiation from obstruction.

Peritonitis, general and local, so frequent and of such varied origin, gives rise to more difficulty than all other affections combined. The early symptoms may be practically identical, except for the tenderness of peritonitis, and peritoneal inflammation is a natural outcome of acute obstruction. In the one case constipation is of purely mechanical origin; in the other it is dependent on intestinal paralysis which, in turn, is the result of peritonitis. Though the pathological sequence of events is thus not the same, the exact sequence is not always to be made out at the bedside. The forms of peritonitis of special interest in this connection are those dependent on perforation: of the gall-bladder; of the stomach or duodenum from peptic ulcer; of the appendix.

The former is so rare that mere mention suffices. In the second the origin of the trouble may at times be recognized by the history of the case in connection with the starting-point of the pain. The special liability of young women of the working and servant class to gastric ulcer may be of value. In duodenal ulcer, sex, age, and condition in life afford small aid in the distinction from obstruction. It must, moreover, be remembered that the base of a peptic ulcer may give way without a single precedent sign of the existence of such a lesion.

In the past the symptoms of appendicitis were not infrequently wrongly attributed to obstruction. At present the opposite error is, perhaps, quite as likely to be made; that, namely, of diagnosticating obstruction as appendicitis, so much attention has the latter affection received of late. A notable instance of this error, fortunately corrected in time, is recently reported by Douglas in the *Medical Record* of May 14, 1892.

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[1] Remarks introductory to a discussion of Acute Intestinal Obstruction, in the Surgical Section of the Massachusetts Medical Society, June 7, 1892.

It is more likely to occur in those rather exceptional cases in which the pain is referred to some part of the abdomen other than the right iliac region. In these the sharp localization of the maximum tenderness at the first, as is strongly insisted on by McBurney, is a point of value.

While keenly alive to the limitations of differential diagnosis by tabular statement I venture to append one which presents some of the points of contrast between peritonitis and obstruction.

	Peritonitis.	*Obstruction.*
Initial chill.	Not uncommon.	Lacking.
Fever.	Not uncommon.	Lacking, until peritonitis.
Tenderness.	General from the first.	Late, at first local.
Vomiting.	Early, perhaps persistent in both.	
	Seldom feculent.	Often becoming feculent.
Constipation.	No really distinctive point.	
Abdominal wall.	Tense early.	Tense late, if at all.
Tympany.	General early.	At first local, later general.

Finally, in very rare cases, enteritis may present a picture similar to that of obstruction, and dysentery may simulate one form thereof, invagination. A twisted pedicle or rupture of an ovarian tumor, and ectopic gestation are possible causes of error.

Granting, now, that the diagnosis of acute intestinal obstruction has been reached without reasonable doubt, it remains to determine, if possible, the seat and nature thereof.

The nature of the obstruction is, in many cases, difficult or impossible to make out without laparotomy. The following are, perhaps, the leading points which may assist in the solution of the question.

Intussusception is the form which may possess the most distinctive features, and is responsible for at least one-third of all cases of obstruction. No cause is so frequently operative in early life, although it may be found at any age. The pain is usually sudden and severe, and apt to be distinctly paroxysmal owing to the violent peristalsis; nausea and vomiting occur early, the latter seldom becomes fæcal. Tympany is rare as an early symptom. But the characteristic signs are tumor, tenesmus, and the dejections. The former, if abdominal, is usually in the course of the colon on account of the predilection of this affection for the cæcal region, is cylindrical in shape, may gradually advance as the invaginated portion progresses toward the outlet of the bowel, and is apt to become more distinct during a paroxysm of pain. The comparison of the rectal tumor to the os uteri is an old one. Tenesmus is frequent and may appear on the first day. This and the discharge of blood or bloody mucus with or without liquid fæcal matter may suggest a diagnosis of dysentery.

It should constantly be remembered that invagination does not necessarily completely occlude the lumen of the intestine, as do most other forms of acute obstruction; diarrhœa is, consequently, often present.

It is thus seen that in a fair proportion of cases a positive and early diagnosis is to be reached.

Strangulation by bands or through apertures is identical in its symptoms with external strangulated hernia. No attempt will be made here to differentiate its several forms. It is operative in from one-quarter to one-third of all cases of obstruction. That on which its occurrence depends being so often the result of previous peritonitis, the history of the case may here have special value. While it is most common in young adults it is not rare after forty. Perhaps the influence of age is here only apparent, there being more people alive between twenty and forty than between forty and sixty.

Pain, nausea and vomiting are apt to be even more striking than in invagination; and fæcal vomiting, from the second to the fifth day, is more common. Occlusion of the tube is, of course, absolute, and Treves holds that pain is then more apt to be continuous, but distinctly colicky in partial obstruction. The small intestines being the part involved in nine-tenths of all cases, early tympany is less constant and less marked. Constipation is absolute, neither fæces or flatus escaping; tenderness is evidence of peritonitis; tumor and visible intestinal coils or peristalsis are rare. Collapse is early and marked. The diagnosis, if it can be made, is thus based on pronounced obstructive symptoms, in an adult who presents none of the distinctive signs of intussusception, and may have gone through a previous peritonitis, in males of appendicular, in females, perhaps, of pelvic origin.

Volvulus is most apt to occur between forty and sixty. In the small intestine it is not to be clinically distinguished from internal strangulation. If, as is relatively so common, the sigmoid flexure is involved, the symptoms are, as a rule, less violent and urgent than in strangulation. Constipation is absolute, tympany is more marked; tenesmus is not uncommon. Stricture of the intestine, usually cancerous, is much more apt to give rise to the symptoms of chronic than to those of acute obstruction. Still, the latter occurs so often that it cannot be left out of consideration. A history of difficult and disordered defecation, perhaps for some time, combined with gradual failure of the general health in a person at or beyond middle life, may here be important. The large intestine, and especially its lower portions, being the favorite seat of intestinal cancer, examination of the rectal and sigmoid regions may yield information of value. A tumor, may, of course, be formed in part of fæcal masses arrested behind the constriction. If dilatation and compensatory muscular hypertrophy have taken place the opportunity is afforded for marked tympany; in no acute form is visible intestinal peristalsis so common. In general, visible coils and peristalsis are more common in chronic cases: and in those persons whose abdominal walls are relaxed from any cause, than in the previously healthy and muscular.

Very rarely tumors originating without the gut compress it suddenly and thus cause obstruction. If the previous existence of the tumor was known, the fact may be of considerable importance. If not, an attempt must be made to determine whether it is fæcal, inflammatory or neoplasmic.

Obstruction by foreign bodies is mainly due to the impaction of gall-stones in the small intestine. A history of previous biliary obstruction may be suggestive.

Fæcal impaction, practically always by the large intestine, rarely gives rise to the cardinal symptom of acute obstruction, and belongs rather under the chronic form. A clear history of previous constipation is the rule. The obstruction may or may not be complete. The pains, vomiting and distention are less urgent, though the latter may be enormous. Collapse is absent or slight, a characteristically fæcal tumor can be felt in the course of the colon or in the rectum in many cases.

To sum up: positive diagnosis is relatively frequent in invagination and stricture; impossible in volvulus; a strong probability may not infrequently be reached in strangulation; a conjectural diagnosis can sometimes be made in obstruction from gall-stones or compression from tumors.

The diagnosis of the seat of the obstruction is rather less difficult than is that of its nature.

It is to be based on:

(1) The determination of the capacity of the colon which, under anæsthesia, may be made to contain six quarts, a pressure of a column of water twenty feet in adults, twelve in children, being probably safe. It should be remembered that the rectum alone may contain one and one-half quarts. If four to six quarts can be introduced, the obstruction is almost certainly at or above the cæcum. The earlier the procedure is resorted to, the less likely is gaseous distention to prevent its full application, or injury to follow its employment; on the other hand, the more likely is it to be of therapeutic service, as in intussusception.

(2) The situation of the tumor, if such be present, may throw light on the seat of the obstruction.

(3) But little reliance is to be placed on the symptoms. It may, perhaps, be stated: the higher the seat, other things being equal, the less the urine; the higher the seat, other things being equal, the less the tympany. Great excess of indican is not now considered of much value in locating the lesion in the large intestine. When tenderness first appears, its location may have some value as indicating the advent of peritonitis, which is apt to start at or about the lesion.

The presumable nature of the obstruction has some bearing on the seat. Intussusception involves the large intestine in 90 per cent. of the cases; strangulation the small intestine in equal proportion. Gall-stones and foreign bodies obstruct the small gut alone. All other forms are much more common in the large intestine; and all, save perhaps fæcal impaction, are more apt to involve one or the other end of that portion of the canal.

Fitz's statistics show that four-fifths of all acute obstructions are found in the lower abdomen.

First in importance is the diagnosis of the condition that purgatives may be avoided and surgical interference, if necessary, may be resorted to before the patient's chances are imperiled by notable peritonitis or changes in the nutrition of the gut itself.

Next in importance, though not in ease, is the nature. Intussusception alone offers much chance of medical or expectant treatment.

A determination of the seat determines also the point of election for section. Except in the case of stricture of the rectum or sigmoid, this is a matter of comparatively subordinate importance.

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THE SURGICAL ASPECTS OF ACUTE INTESTINAL OBSTRUCTION.[1]

BY JOHN HOMANS, M.D., BOSTON.

Most of the cases of acute intestinal obstruction I have operated on have been caused by a malignant annular stricture of the bowel, or at least malignant disease; but there have been some exceptions.

The first case I operated on for intestinal obstruction was some eighteen years ago, and is the only one of the kind I have ever seen. It occurred after confinement, from inflamatory disease around the uterus which entirely prevented movements of the bowels. The woman, young and healthy, was brought to the Carney Hospital. She had had no movement of the bowels for three weeks, was very much distended and in great pain. Dr. E. G. Cutler was the physician on duty, and asked me to see her. I did a left lumbar colotomy and she was entirely relieved. Operations went on through the artificial anus for some months and then gradually began to come through the rectum, and the last I knew of her almost all the discharges went through the natural passages.

The success of our efforts to relieve people of obstruction of the bowels would come largely from the accuracy of the diagnosis. These people with malignant annular stricture of the bowel very often are taken suddenly. I remember a patient of Dr. A. H. Nichols, a lady from the West staying at the Parker House. She said that her mother had died from cancer of the bowels. She was taken suddenly with complete obstruction, which had peristed for three weeks when I saw her. She was carried to a private hospital, and having located her pain and symptoms in the right iliac region, I, with the assistance of Dr. M. H. Richardson, ten or twelve years ago on a very hot day, opened the abdomen over the cæcum, found no obstruction at that point, but after much overhauling of the distended intestines finally found in the splenic flexure of the colon an annular stricture. We replaced the bowels, sewed up the wound, made an artificial anus in the cæcum, which relieved her, but she died in a day or two. Dr. Nichols procured the specimen which is now in the Warren Museum. I think the lumen of the bowel was reduced to a size somewhat smaller than the lead of an ordinary lead pencil, and yet she had had, as she said, no symptoms until her final seizure.

Another case was that of a stout Irish woman attacked while working at the wash-tub, in Roxbury. She had had no previous symptoms of obstruction. With the assistance of Dr. Fitz and her physician, Dr. S. A. Callanan, I opened the abdomen and found a mass of cancer behind the uterus which entirely involved the sigmoid flexure. I opened the bowel and sutured it to the skin. The stricture would not admit my finger.

Another case in which I did a left lumbar colotomy was one of almost complete obstruction with great abdominal distention. The intestines could be seen through the thin parietes moving with their vermicular motions and tightly distended. There were severe attacks of vomiting with much pain. The intestines were bound together by adhesive tubercular peritonitis and were also tied to the abdominal and pelvic walls, forming a sort of mound. The ileum was dilated to a circumference of four inches, and its walls much hypertrophied. The large intestine was contracted. Other organs contained tubercular deposits.

Another case was caused by cancer of the rectum in a lady fifty-five years old, with a cancerous family history. She became fat and strong after the operation, and went about wherever she pleased. Her physician found it necessary to keep a drainage-tube in the artificial opening, and about nine months after the colotomy the patient lost the tube in the bowel and would not allow search to be made for it. The tube ulcerated through the rectum above the cancer and caused fatal peritonitis.

Another was caused by cancer (annular) of the splenic flexure of the colon.

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[1] Read before the Massachusetts Medical Society, June 7, 1892.

Another by cancer of the rectum in a lady sixty-five years old.

Another by cancer of the sigmoid flexure and neighboring parts.

Another case occurred in South Boston, and was a fatal one of volvulus in which no operation was done. The fatal twist took place in a woman twenty-eight years old, two years after a laparotomy for pyo-salpinx, and until the autopsy I supposed that the obstruction was in some way caused by the condition of the peritoneal organs left after the laparotomy, but it was simple volvulus of the ileum, and the only one I ever saw. The patient was attended by Dr. Fogg, of South Boston, who called me, and the autopsy was made by Dr. A. K. Stone.

These are some instances of malignant disease.

I have had two cases of traditional obstruction caused by bands or twists. One occurred in Woburn. I was sent for in a great hurry on a short day in winter. I dropped everything and went out to Woburn, and was kept an hour and a half waiting at the station, for some reason unknown to me. They kept me so long that daylight had almost gone when I reached the house. I opened the abdomen and did not find any band, and yet I felt as if there must be something of the kind, and if I had known as much about it at that time as I do now I presume I should have found it. It was a Meckel's diverticulum. I made an opening in the bowel, but so high up that the patient starved to death after a few weeks. That it was a band of a Meckel's diverticulum was shown at the autopsy.[2]

Another case of obstruction, rather sudden, was in a lady a year after ovariotomy, and was caused, I presumed, before I operated, by some adhesion or band between the wound and omentum or bowel. She was a woman of a great deal of character and good sense. I told her I should open the abdomen, and if I could not find the cause of the obstruction I should have to make an artificial anus, and she said, "Do whatever you think best." On opening along the line of the scar I found no adhesions, but in the lower part of the sigmoid flexure there was a malignant annular stricture. I made an artificial anus. She lived about a year and died of cancer of the liver. The last year of her life she said was a very happy one, though she could not go into society on account of the escape of gas. As far as movements of the bowels were concerned she got along very well, and was very glad she had had colotomy done.

Another case of obstruction, much more fortunate, where I opened the abdomen and found a stricture of the small intestine to the left of the umbilicus and made an intestinal anastomosis by means of Senn's plates, about a year and a half ago, in a little girl, was very satisfactory. Here there was no cancer. She is now alive and hearty. The stricture, which was complete, was caused by invagination and sloughing of the small intestine three months before I saw her. These openings, which are made by Senn's plates or Abbe's rings or any of the artificial rings, are said to contract. I do not know why they should not contract. At any rate in this girl the opening apparently has not contracted, and as the intestinal contents are fluid in the small intestine, contraction of the opening is not so serious as it would be in the large intestine where the contents are more solid. She is now a stout, pretty girl, but was emaciated to a mere skeleton at the time of the operation, eighteen months ago.

Another man, with obstruction of the bowels caused by cancer of the sigmoid flexure of the rectum, I operated on a year ago last March. I found I could not make a resection of the sigmoid flexure, and made an artificial anus in the inguinal region. He has gained fifty-two pounds in weight, and was until recently very comfortable. Within the last six weeks the artificial anus had ceased to discharge. I could not see exactly why, because I could inject into it gallons of water, showing that there was no obstruction, and yet for some reason the fæces did not come out of it. About seven weeks ago I made another laparotomy to the left of the former one, and pulled out the large intestine, which presented, until I got a straight pull on the descending colon where it begins to be the sigmoid flexure. You will find in doing these operations that it is not necessary at all to sew the bowel to the skin. Pull out the bowel, slide a little glass rod, or any rod, across to straddle the wound, and let it alone. The intestine heals at once to the parietes, and in a day or so you can open it. This method makes the so-called spur by holding up the two sides of the bowel. This man has now two artificial anuses, and has recovered and goes about comfortably. I felt if I closed the lower artificial anus, which could have been done quite readily, that he would have about a yard, more or less, of intestine which could not discharge anywhere. The alternative would have been to cut off the intestine below the glass rod and sew it up. However, the operation I did has relieved him. When I came to examine him at the last operation, a year or more after the first one, I put my finger into the distal end of the wound and felt the cancer which had grown up from the sigmoid flexure and is slowly approaching the surface, and I felt many enlarged lumbar glands; but still he is very comfortable. You will see the majority of the cases I have been able to remember have been of malignant disease. I recall three others of malignant disease where I have been called and have operated.

Another case of obstruction which was quite interesting was six months after an ovariotomy. As you can readily conceive, the bowels under the wound had adhered to the under side of the scar in the abdominal parietes at various points, so as to make little holes between the adherent bowel and the scar, and through one of these holes a loop of intestine had penetrated, and at the end of five or six days I was called. I opened the abdomen and found the loop gangrenous. If I had been called early enough, and had operated, I think I could have relieved the patient.

Sometimes cases of obstruction are due to adhesion of the bowel to an abdominal tumor. I have seen this in a fibroid tumor which had become entirely separated from the uterus and was nourished by adhesions to the omentum and mesentery and bowel. In that case there were places where the bowel was not attached right along to the tumor and left little apertures through which the intestine had become engaged and had become constricted, and death had resulted from peritonitis, so that you should remember if you have a movable tumor of the abdomen accompanied by symptoms of obstruction it may be that the bowel has become adherent to it, and strangulation has taken place through apertures at points of adhesions of the bowel.

I recall sixteen cases where I have been called upon to operate for intestinal obstruction, and nine of them were caused by cancer.

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[2] The case is referred to in Dr. Fitz's excellent article on Persistent Omphalo-Mesenteric Remains, in the American Journal of the Medical Sciences, July, 1884.

In another case, to which I was called by Dr. F. W. Draper, I strongly suspected acute pancreatitis, about which Professor Fitz had just written a most valuable monograph, and we sent for him at my suggestion; but neither of us had the courage of our convictions, and I obeyed the vote of the consultants, of whom I think there were seven, and opened the abdomen for supposed obstruction. As soon as we saw the fat necrosis in the omentum we saw our error, and I at once closed the wound.

Cases of Abdominal Operations on Account of Intestinal Obstruction.

Disease.	Operation.	Cures.	Deaths.	Cases.
Cancer	Left lumbar colotomy	2	1	3
Cancer	Opening made in cæcum	..	1	1
Cancer	Artificial anus in splenic region	..	1	1
Cancer	Artificial anus in sigmoid flexure, inguinal or pubic	2	1	3
Cancer	Intestinal anastomosis	..	1	1
Pelvic inflam'ation after confinement causing complete obstruction,	Left lumbar colotomy	1	..	1
Adhesive tubercular peritonitis	Left lumbar colotomy	..	1	1
Strangulation by hernia, through intra-abdominal adhesions	. . . .	..	1	1
Persistent omphalo-mesenteric remains	Artificial anus	..	1	1
Complete obstruction following intussusception and sloughing	Anastomosis by means of Senn's plates	1	..	1
Intestinal band	Relieved by operation, but not cured	..	1	1
Intussusception in an infant	Relieved by operation	..	1	1
		6	10	16

Cases of cancer, 9; all others, 7. Laparotomy done on account of false diagnosis, 1. Cases of hernia are left out.

Cases of Obstruction in which Early Operation would have been Proper.

Disease.	*Fatal.*	*Autopsy.*
Volvulus	1	1
Obstruction by strangulation through bands of adhesion to a wandering fibroid uterine tumor	1	1
Round fibroid filling pelvic brim like a cup (thirty-four years ago)	1	1

Case of Obstruction; Operation Improper; Relieved without Operation. Caused by Intestinal Enterolith.

Passed spontaneously by rectum 1

Total number of my recorded cases, 20.

There are a number of other cases not operated on which I have seen in consultation, mostly cancer.

As I said at the beginning, the question of diagnosis and the settling of it is the most important and all-important thing to settle, and here comes in experience. An experienced physician and a learned diagnostician, with common-sense in addition to his learning, is what is wanted. Why did I not operate on the case which turned out to be one from obstruction by an enterolith and why did I operate on the case of cancer? Because experience from sad and happy cases guided me aright. It is with these cases as with cases of appendicitis; the man who has seen many can often tell when to operate and when not to, and yet he could not thoroughly and clearly explain to a student why he refrained from operating in one case and yet operated in another which probably seemed to the student almost similar. In many cases an exploratory laparotomy alone will settle the question. But an exploratory laparotomy in a person with distended intestines, and perhaps a slight amount of peritonitis, is very apt to be fatal if there is much handling of the bowels and difficulty of returning them, and they have to be stuffed back. Patients affected with abdominal cancer are peculiarly liable to be killed by an extensive laparotomy, though they bear the slighter colotomies very well.

I have seen patients go on for years with gradually increasing obstruction of the bowels, relieved at each attack by hyodermic injections of morphia, until finally complete obstruction has resulted, and at the autopsy I have found the intestinal wall above the obstruction as thick as the wall of the right ventricle of the heart. I have seen complete obstruction caused by a gradual compression of the rectum between a fibroid and the pelvic wall, in which the wall of the intestine above the point of compression was as thick as the wall of the left ventricle of the heart; and I have seen intestinal obstruction simulated by acute pancreatitis, by the irritation of an ovarian tumor, or an uterine tumor with a twisted pedicle. And it is only experience combined with common-sense and anatomical and pathological knowledge that will enable a physician or a surgeon to pick out the different cases and say, "This is a case of so-and-so, and needs immediate operation; this is probably a case of temporary obstruction which will relieve itself; this case is not one of obstruction, but is one of simulated obstruction"; in short to make the diagnosis, or if unable to make the diagnosis to say whether an exploratory operation should be done.

I have seen the abdomen opened for obstruction where there was not any; simply peritonitis; and I have myself opened it in a case of acute pancreatitis because the consultants advised it. It seems to me extremely difficult in these cases to make an accurate diagnosis of the cause of the obstruction, and in the majority of the cases in which I have opened the abdomen the obstruction, as I have said before, has been caused by malignant disease, and the places where the malignant strictures are more likely to occur, I should say, are the splenic flexure of the colon and the sigmoid flexure of the rectum. I have also seen it in the cæcum, but I think the former two places I have mentioned above the most common. If one is fortunate enough to find one of the traditional bands that can be divided and so set free the obstruction, he is very lucky.

It is interesting, I think, to see what takes place on the peritoneum of the exposed bowel. Supposing you do an inguinal colotomy, or any other colotomy for obstruction, and pull out the bowel and put your glass rod under and leave it. In the course of forty eight hours that bowel is covered so thickly with what we call lymph that you would not recognize it for bowel. You would think it was mucous membrane when you take the dressing off and look at it. The deposit on it is a line or more in thickness. The intestine adheres to the side of the wound as well as or better than if you had sewed it.

It is impossible unless a man is omniscient to know just what is the matter, but we can try to attain unto it. I went to Cambridge a year or more ago to see a case with Dr. Morrill Wyman. The patient was a gentleman sixty-four years old and had had complete obstruction of the bowels for some days. I could not make a diagnosis as to what was the matter with him exactly, and as it turned out no one could have done so, and yet my instinct was not to operate. I told Dr.

Wyman that, not feeling sure of what I was going to accomplish, I should like to postpone the operation and have the patient carefully watched. This was a most exceptional case, and I do not know whether Dr. Wyman has ever published it. At any rate it is most unique, I should say. This gentleman went along, gradually becoming more comfortable, and, at the end of three or four weeks, passed a large stone through his rectum, similar to the stones which occur in cattle. The nucleus in horses and cows is generally a piece of iron or a nail, or something of that kind. I do not know what the nucleus of this was. The size of it was that of a large-sized plum, I believe, — a hard calcareous substance which completely obstructed the bowels. The patient has been well ever since. If I had operated and opened the bowel he would probably have died. I did not *know* absolutely whether to operate or not, but I knew enough to decide not to interfere. In this case I do not think anybody could have made the diagnosis. Our treatment turns largely on the question of diagnosis, and the diagnosis is made by human skill and not by divine skill, and we cannot be certain enough to know *always* what to do. I approve very strongly, in the majority of cases, of an exploratory operation, but one must be guided somewhat by the condition of the patient. Patients will often go three, four or five weeks with complete obstruction without distention. You see them with flat abdomens, and you see the intestines writhing in their vermicular motion, and the patients get along very comfortably for quite a long period. I think in these cases there is generally found some malignant stricture somewhere, to which the bowels have become gradually accustomed.

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A CASE OF NEPHROLITHOTOMY; REMOVAL OF CALCULUS WEIGHING FIVE OUNCES; RECOVERY.[1]

BY GEORGE W. GAY, M.D.,
Surgeon to the Boston City Hospital.

FOR eleven years Mr. R., aged forty-three, had been a great sufferer from frequent attacks of renal colic. For several years prior to the advent of the colic, he had been troubled with pains in various parts of the body, as the back, hips and legs. Chills, fever and malaise ushered in the attacks of pain, and they occurred every one or two months for six years, there seldom being an interval of three months. During the past five years the attacks have been less frequent, and less severe, only one paroxysm having occurred within twelve months. He has been disabled from following his business as a marble worker more than half of the time during all these years, as he would no sooner get fairly over one attack, than another would begin. The pain was always followed by profuse discharges of purulent and bloody urine, it sometimes reaching the large quantity of four or five quarts in the twenty-four hours. At these times he would frequently get up in the night, and pass a quart at once. No gravel was ever seen.

Six months prior to the operation a tumor made its appearance in the right side. It increased rapidly, until it extended from the median line to the ribs above, into the right inguinal region below. It was elastic, uneven or lobulated, fluctuating, not tender, descended upon full inspiration, and it had all the characteristics of a dilated kidney. No hard substance was to be felt. There was a distinct groove between the tumor and the liver. The attacks of pain in former years had been attended with some jaundice, but none was present, when seen by the writer, nor was pallor or emaciation markedly noticeable. Jolts and jars hurt him, so that he could not ride far in a carriage without much suffering. His general health was failing: his strength was fast giving way, and he had given up work recently, as he was no longer able to attend to it.

The urine was free; cloudy; specific gravity 1,020; sediment was large, ropy and very tenacious. Micturition not very frequent except at times, as after exercise. The urine had not been clear for many years.

The operation was performed at the City Hospital on December 8, 1891. The patient was etherized, and placed upon his left side. An incision five inches long was made midway between the ribs and the crest of the ilium, commencing about three inches from the spine and extending toward the median line. The peritoneal cavity was accidentally opened at the most prominent part of the tumor, but was closed after a careful digital examination of the cavity had been made; and no ill results followed.

The kidney was exposed, and found to be a large, thin-walled cyst. The stone was readily detected by the finger. On opening the kidney, between one and two pints of a turbid fluid escaped. It was free from any disagreeable odor. The calculus was fixed in one or more of the calyces of the renal cavity, but was dislodged by moderate effort and removed. The cyst, for such the kidney had become by distention and absorption, was thin walled and prone to collapse. No renal structure was visible to the eye, or apparent to the touch. It was secured to the posterior angle of the wound with silk. The remainder of the incision was closed by a deep and superficial series of continued sutures. Union in this portion of the wound took place by first intention. There was very little suppuration throughout the case. Neither was there much discharge from the cyst after four or five days. The fact that the discharge never had a urinous odor would tend to show that the renal tissue proper had been mostly destroyed.

Comparatively little shock followed the operation, although there was a good deal of pain. He was turned upon his side every day while the wound was being dressed, and after the second day he could help himself very cleverly during the process. The severe pain soon passed away; but the soreness lasted for some time. Eleven days after the operation the patient was seized with acute pain in the left hypochondrium, and from no ascertainable cause. Of course a calculus in the left kidney was thought of, but the pain passed off in a few days and has never been as severe since.

For twenty-four hours after the operation the catheter was used. The urine was neutral, cloudy; specific gravity 1,018; albumen $\frac{1}{8}$ per cent.; sediment abundant, slightly ropy, and contained an occasional granular cast, bladder and renal cells. Two days later micturition was voluntary, and the amount of urine passed in twenty-four hours was forty ounces. It may be said here, that as time went on, the amount of urine passed in a day and a night often reached seventy to eighty ounces. This seems the more remarkable, when it is remembered, that with a large opening into, and free drainage from, the right kidney, yet very little fluid escaped from it, probably not over two ounces in the twenty-four hours. It was evident, that this organ secreted very little urine by reason of the extensive disorganization, or that it escaped by the natural channel. The former supposition would seem to be the more reasonable one. At no time were there any symptoms of uræmic poisoning. The patient sat up in three to four weeks, and went home in six weeks.

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[1] Read before the Suffolk District Medical Society, April 30, 1892.

The calculus (exhibited) is seven inches in circumference, and two and three-quarters in diameter. It weighed five ounces when removed. Dr. W. B. Hills reports that it is composed chiefly of phosphate of lime, with a small amount of carbonate of lime and triple phosphate.

It is now nearly five months since the operation was done. The man is fat and ruddy for him, and is out and about his business in a quiet way. He is gaining strength slowly, but frequently "gives out in the back." His weight is rather above the average point. The wound is closed to a small sinus the size of a probe, and the discharge is so slight that it gives him very little trouble. The rest of the wound is sound, and no signs of a hernia are present. Long rides tire him, and cause pain in the left side. He has had no colic since the operation. The urine is much improved in its general appearance. The quantity is three quarts in twenty-four hours. Density 1,012; alkaline; slight trace albumen; pale but only slightly cloudy above the sediment, which is quite abundant, thick, white and ropy, and contains large numbers of triple phosphates, crystals, some mucus, an occasional pus cell, and more or less renal, bladder and pelvic epithelium. Odor not strong, and micturition not very frequent, as a rule.

This man has been very greatly benefited by the operation, and is in a fairly satisfactory condition at the present time.

The principal symptoms of stone in the kidney are pain, hæmaturia, pyuria and tumor. The pain is usually in the region of the organ affected, and may extend to the testicle. Renal colic is more or less frequent in many cases, and is an important diagnostic feature. Pus and blood are to be found in the urine in the vast majority of cases, varying, of course, as to amount and persistency. It is only in the later stages of the affection that a tumor is developed, and in many instances the kidney is not enlarged sufficiently to be detected by external manipulation. The disease is essentially chronic in its character, the symptoms in many patients extending over several years. In the case of a man forty-four years old, from whose kidney 150 calculi, weighing from eighteen grains to an ounce, were removed, the symptoms had existed from infancy. In many other cases reported, the duration is stated at ten, twelve, and even twenty years.

If any reliance can be placed upon statistics, the operation of nephrolithotomy is not a very dangerous one. Baum's table, issued in 1888, is supposed to contain all published cases up to January of that year. The total number is 50. Eight were fatal, and 42 recovered more or less completely.

At my request, Dr. C. M. Whitney has collected all the cases recorded in English and American literature from January 1, 1888, to April 1, 1892. He has found 68 cases, including the one reported above, in which the kidney was opened, and one or more calculi were found. Fifty-eight (58) recovered and ten died. This gives a mortality of 14 per cent. which is not large considering the nature of the disease, and the importance of the organ affected. Those cases in a tabulated form are appended to this paper, and include Cabot's and Torrey's two cases of uretero-lithotomy.

Combining Baum's cases (50) with Whitney's (68) we have 118 in all as the number reported to April 1, 1892. One hundred patients recovered and eighteen died; a mortality of 15 per cent. In a most interesting paper read before this Section in May, 1887, by Dr. E. O. Otis, 42 cases of nephrolithotomy are reported with only four deaths, or 9½ per cent. Probably many of these cases are included in Baum's table.

As comparatively few readers have the time or inclination to examine tables very carefully, it may be worth while to call attention to a few noticeable features in the appended series of cases.

It will be noticed that the size and number of stones varied greatly. The largest calculus weighed five ounces. The next in size lacked only a drachm of this weight. Both patients recovered. The largest number found in one kidney, as stated above, was 150. In another instance 100 small ones were removed; from others, 89, 46 and so on down to a single bit of gravel weighing but a few grains. In one of Morris's cases, fatal from septicæmia, 200 calculi were found in the other kidney at the autopsy.

Mr. Clement Lucas [2] reports a most remarkable case of a woman thirty-seven years of age, who had suffered from hæmaturia seventeen years, pain in right side nine years; she had had a tumor in the left side seven years, which was supposed to be a floating kidney. Her right kidney was removed in July, 1885, and was found to be a mere shell containing calculi weighing twenty-one ounces. After four months of comfortable existence, she was suddenly seized with severe pain in right side followed by complete suppression, or rather absence of urine in the bladder. This state of affairs continued for four days and over. The left kidney was then opened, the ureter found plugged with a small stone, which was removed. The wound healed in ten weeks. The woman was in good health and doing her work five years after the operation.

Another woman had calculi removed from both kidneys at the same time. She died from asthenia in thirteen days. One case terminated fatally from hæmorrhage, the opposite kidney having been opened for calculi six months previously. The nucleus of the stone in another case was a needle supposed to have been swallowed fifteen years before the operation. Complete suppression of urine had existed for fifteen days prior to operation in one case. At the autopsy both kidneys were found to be crowded with calculi. One patient died from hæmorrhage resulting from ulceration of a branch of the renal artery. In one of the successful cases the kidney had been opened some months before without finding any foreign body.

An early diagnosis and an early removal of the stone are the two most important elements in the successful management of calculus in the kidney. Unfortunately it is more difficult to establish the former, than it is to carry out the latter. Repeated attacks of renal colic with long continuance of purulent or bloody urine without evidence of sufficient disease in the lower urinary tract to account for these symptoms, point strongly to a renal calculus. Yet under similar conditions the kidney has been opened about thirty times, as reported by Treves, and no foreign body was found. These facts show the difficulty of making a correct di-

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[2] Lancet, January 17, 1881.

NEPHRO-LITHOTOMY CASES, FROM JANUARY 1, 1888, TO APRIL 1, 1892.

No.	Operator.	Age and Sex.	Number and Size of Calculi.	Result.	Reference.	Symptoms and Remarks.
1	Pepper.	20, m.	70 grs.	Recovery.	Lancet, Lond., 1889, ii, 432.	Calculus, firmly wedged.
2	Pepper.	34, m.	Single. Oxalate lime.	Recovery.	Ibid., 433.	
3	Williams.	42, f.	100 miliary. 1 size of date-stone wedged.	Recovery.	Ibid., 1890, i, 643.	Pyonephrosis.
4	Swain.	24, m.	One, small.	Recovery.	Ibid., 1890, ii, 1269.	Colic. Complete relief.
5	Whipple.	45, m.	275 grs.	Recovery.	Ibid., 1891. i, 144.	Colic for twenty years. Passage of calculi, hæmaturia.
6	Lucas.	37, f.	¾ in. long, ⅜ in. diam.	Recovery.	Ibid.	Following nephrectomy of opposite kidney. Patient exhibited five years after operation.
7	Turner.	45, f.	1 oz. in left, two 2-drm. in right.	Death, 11 days. asthenia.	Ibid., 1891, i, 881.	Double pyonephrosis. Double nephro-lithotomy.
8	Jacobson.	53, m.	14½ grs.	Recovery.	Ibid.	Lumbar pain for five years; hæmaturia; frequent micturition.
9	Jacobson.	30	Eighty-nine stones, 333 grs.	Recovery.	Ibid.	Tumor; pyuria.
10	Jacobson.	29, f.	Eight stones, 39 grs.	Recovery.	Ibid.	Pyuria; slight hæmaturia.
11	Jacobson.	18, m.	25 grs.	Recovery.	Ibid.	Hæmaturia; testicular pain.
12	Jacobson.	38, m.	One stone.	Recovery.	Ibid.	Calculi passed; hæmaturia.
13	Jacobson.	33, m.	54 grs.	Recovery.	Ibid.	Followed supra-pubic lithotomy.
14	Jacobson.	25, m.	33 grs., oxalate lime.	Recovery.	Ibid.	Lumbar pain; hæmaturia.
15		40, f.	Four stones.	Recovery.	Ibid.	
16	Morris.	40, f.	Several small stones.	Death, septicæmia.	Ibid., 1887, i, 270.	Cysts in opposite kidney, and two hundred small calculi.
17	Pollard.	10, m.	27 grs.	Recovery.	Lancet, Lond., 1891, i, 881.	Abdominal pain; hæmaturia.
18	Swain.	7, m.	Small.	Death.	Ibid., 1380.	Useless opposite kidney; pyonephrosis. Nephrotomy.
19	Hendley.	27, f.	One stone.	Recovery.	Brit. M. J., 1889, i, 590.	Lumbar pain; tumor; pyo and hæmaturia.
20	Jacobson.	23, m.	42 grs.	Recovery.	Ibid., 712.	
21	Jacobson.	58, m.	473 grs.	Death, uræmia.	Ibid.	
22	Jacobson.	15, m.	Forty-six. 278 grs.	Death, shock.	Ibid.	Opposite kidney filled with stones.
23	Jacobson.	41, m.	78 grs.	Recovery.	Ibid.	
24	Steavenson and Butler-Smythe.	"Young," f.	One fair size, several small.	Death.	Ibid., 1225.	Ulceration into a branch of renal artery. Fatal hæmorrhage on 7th day.
25	Imlach.	26, f.	106 grs.	Recovery.	Ibid.	"Gravel"; tumor; pyonephrosis.
26	Imlach.	31, f.	Five. 550 grs.	Recovery.	Ibid.	Tumor.
27	Imlach.	48, f.	Three. Uric.	Recovery.	Ibid.	Lumbar pain; pyuria.
28	Imlach.	27, f.	2½ drms.	Recovery.	Ibid.	Tumor; hæmaturia.
29	Humphrey. (Queensland.)	41, f.	32 grs. Uric.	Recovery.	Ibid., 1290.	Pain in loin; colic.
30	Franks.	22, m.	3.04 grms.	Recovery.	Ibid., 1890, ii, 18.	A needle formed the nucleus of this calculus, caused a sinus, which led to operation. A needle had been swallowed fifteen years before.
31	Keetley.	12, f.	Three stones.	Recovery.	Ibid., 149.	Pain in loins; pyonephrosis; pyuria.
32		44, m.	150 calculi. 1 oz. 18 grs.	Recovery.	Ibid.	Largest number removed. Symptoms existed from infancy. Relief.
33		25, m.	3.27 grms.	Recovery.	Ibid.	Lumbar exploration under cocaine.
34	Franks.	28, m.	171.3 grs.	Recovery.	Tr. Soc, Med., Ire.	
35	Page.	15, m.	21 grs. Oxalate lime.	Recovery.	Edin. M. J., 1887. 190, 322.	
36	Agnew.	38, m.	473 grs.	Recovery.	Med. News, Phila., 1888, i, 488.	Colic, pyo and hæmaturia for twelve years.
37	Wilson.	38, m.	168 grs. Phosphatic.	Recovery.	Ibid., ii, 694.	Tumor; pyo and hæmaturia; pain in loins.
38	Lange.	56, f.	Size of bean. Oxalate lime.	Recovery.	N. Y. M. J., 1888, i, 78.	Colic.
39	McCosh.	44, m.	122 grs.	Death, uræmia.	Ibid., i. 529.	Nephrectomy done in 35 days on account of bleeding and obstruction in [pelvic kidney.
40	Gardner.	23, m.	25 grs.	Recovery.	Austral. M. J., 1887-88, Mar. 15.	
41	Torrey.	?	Size of Spanish olive. ⅞ in. long, ½ in. diam.	Recovery.	Am. J. Med. Sc., 1889, xcvii, 589.	Calculus removed from ureter 2 inches below pelvis.
42	Cabot.	40, m.	2 grs.	Recovery.	Bost. M. and S. J., Sept. 11, 1890.	Uretero-lithotomy. Stone 2 inches below pelvis of kidney.
43	Berry.	27, m.	....	Recovery.	Med. Press, Lond., 1891, 403.	Colic.
44	Todd.	61, f.	Small. Uric.	Recovery.	Austral. Med. Gaz., February, 1891.	Lumbar pain.
45	Helmuth.	45, m.	Not stated.	Recovery.	Am. Jr. Homœop., 1890, v. 524.	
46	Belfield.	37, m.	224 grs.	Recovery.	Jr. Am. Med. Asso., 1888, x. 119.	Pain in loins; colic; pyuria.
47	Humphrey.	41, f.	32 grs. Uric.	Recovery.	Austral. Med. Gaz., May, 1889.	Colic.
48	Gardner.	55, f.	96 grs.	Recovery.	Ibid., August, 1888, 278.	
49	Briggs.	33, m.	Both kidneys full of calculi.	Death.	St. Louis M. and S. J., 1888, Mar., 151.	Absolute suppression of urine for 15 days before operation; colic, etc.

NEPHRO-LITHOTOMY CASES (CONTINUED).

No.	Operator.	Age and Sex.	Number and Size of Calculi.	Result.	Reference.	Symptoms and Remarks.
50	Briggs.	30, f.	Large size (cut given).	Death.	Ibid., Feb., 1889, i, 37.	Both kidneys filled with enormous calculi.
51	Werdin.	52, m.	112 grs. Oxalate lime.	Recovery.	Trans. Conn. Med. Soc., 1890, 213.	Colic; pyonephrosis.
52	Tait.	Not stated.	Large, $4\frac{3}{8}$ oz.	Recovery.	South. Clinic, Feb., 1887, 33.	Abdominal route.
53	Tait.	Not stated.	Large.	Recovery.	Ibid.	
54	Wright.	50, m.	$1\times\frac{3}{4}$ in. Oxalate lime.	Recovery.	Med. Chron., Manchester, 1888, iv, 378.	Pyonephrosis.
55	Whipple.	Not stated.	Not stated.	Recovery.	Prov. M. J., Leicester, 1890, x, 329.	
56	Whipple.	Not stated.	Not stated.	Recovery.	Ibid.	
57	Meneal (Havana).	Not found.	....	Recovery.	Chron. med. quir., Habana, 1888, xiv, 79.	
58	Footner.	38, m.	822 grs.	Recovery.	Brit. M. J., 1892, i, 69.	Colic 20 years; tumor; hæmaturia; branched calculi.
59	Dinsmoor.	32, m.	$\frac{5}{8}$ in. diam.	Recovery.	Northwest Lancet, 1892, xii, 21.	Colic; pain in loins; hæmaturia.
60	Myles.	20, m.	282 grs.	Recovery.	Dublin J. Med. Sc., 1892, xciii, 99–104.	
61	Guyan.	....	....	Recovery.	Ann. d. Mal. d. genito urin., Par., 1891, ix, 849–59.	
62	Parks.	M.	....	Recovery.	M. and S. Report, Phil., '88, lix, 406.	
63	Godlee.	37, m.	Uric, large masses.	Death (hæm'ge from kidney.		Following a nephrolithotomy on opposite kidney 6 months before.
64	Barling.	19, m.	2 oz.	Recovery.	Lancet, Lond., 1890, ii, 819.	Pain in groin 15 years.
65	Keyes.	M.	Phosphatic.	Recovery (fistula).	Med. Rec., N. Y., '90, xxxvii, 141–4.	
66		38, m.	Size of marble.	Recovery.	Ibid.	Colic; tumor; pyuria; abscess.
67	Sheppard.	19, m.	Two. 24 grs., 2 grs. Uric.	Recovery.	Ann. Surgery, St. Louis, '89, x, 339.	Lumbar pain. Nephrotomy done in 1888; no calculus found at that time.
68	G. W. Gay.	43, m.	5 oz.	Recovery (fistula).	Bost. M. and S. J.	Colic; pyuria; tumor; approaching invalidism.

agnosis at a time when it is the most important that it should be made, to wit, in the early stage of the disease or before irreparable injury has been done to the organ.

If the symptoms are prominent, persistent, and severe, and if the patient is disabled and rendered unfit to enjoy life by reason of this disturbance, then an exploratory operation is to be recommended, as being reasonably safe, and as offering chances for a more or less permanent relief. As time goes on it is not too much to hope that experience will enable us to make an earlier and surer diagnosis, and thus to treat these patients with greater success, and with more satisfaction to the surgeon.

So far as the operation itself is concerned, it is an easy matter to open a dilated or enlarged kidney in a thin, spare person. It is a very different thing to expose and incise one of normal dimensions in a stout, fleshy individual without opening the peritoneum. The space between the ilium and ribs is limited; the kidney lies deeply buried in fat, and often high up behind the ribs; it may be very movable, difficult to steady, and still more difficult to be pushed up into the wound. The hæmorrhage from the external wound is usually readily controllable, but that from an incised kidney may be profuse, and, even if not specially dangerous, it may serve to delay the operation much longer than is desirable,

In conclusion it may be said that the achievements in kidney surgery in many directions have been brilliant. Foreign bodies have been successfully removed, suppurating cavities have been drained, wandering members in the shape of floating kidney have been brought back to their original home, and useless or mischievous organs have been removed. As regards calculi, until some solvent method more efficacious than any known to the profession at present is devised, relief must be sought at the hands of the surgeon, even if the results are not always as favorable as could be desired.

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Clinical Department.

AN OPERATION FOR RENAL CALCULUS.

BY H. O. MARCY, M.D.

I wish to briefly report a case which I operated upon recently:

J. Q., aged twenty, a sufferer during the last winter with pain in the right renal region. Passed urine in normal quantity without special diminution of urea, but it contains a constant and large quantity of pus. Has lost flesh, and for some weeks there has been a slight rise in temperature. Is anæmic. Slight fulness in region of kidney, and at times tender on pressure,

With the assistance of Dr. A. P. Clarke, of Cambridge, I made the ordinary lumbar incision; and upon opening the thickened capsule, several ounces of thick, cheesy, rather fetid pus escaped. The sound entered about five inches, but no calculus was detected. A large-sized, double drainage-tube was inserted, and the wound dressed with iodoform gauze. A small quantity of urine escaped by the wound, and pus continues in considerable quantity in the urine. The general condition has improved, yet I am in the belief that a calculus is deeply imbedded in the kidney and must yet be removed.

Professor Fischer, of Würzburg, is to succeed Prof. A. W. von Hoffman in the Chair of Chemistry at the First Chemical Institute in Berlin. Professor Meyer, of Heidelberg, will replace him at Würzburg.

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[1] Read before the Suffolk District Medical Society, April 30, 1892.

Medical Progress.

RECENT PROGRESS IN MEDICAL CHEMISTRY.

BY WILLIAM B. HILLS, M.D.

THE ACONITE ALKALOIDS.

THE question as to the nature of the aconite alkaloids has been taken up by Wyndham R. Dunstan in conjunction with John C. Umney, Dr. W. H. Ince, and Dr. F. W. Passmore.[1]

The discrepant observations of different investigators as to the number, nature, and properties of the alkaloids contained in the different species of aconite have been attributed to several sources of error:

(1) To the confusion of different species. It is not easy to distinguish between the roots of the different species and varieties, and it is, therefore, probable that mixtures of roots have been examined. There is good reason to believe that each species and possibly some varieties contain distinct alkaloids.

(2) To the ease with which the principal aconite alkaloids undergo decomposition, especially hydrolysis. It is probable that some of the alkaloids examined and described as constituents of the plants were in reality their decomposition products.

(3) A third source of error resides in the circumstance that the determinations of the composition and properties of the alkaloids have been proceeded with before conclusive evidence of the purity of the material was obtained. The result is that mixtures have been examined and described as single alkaloids.

The present inquiry shows that the roots of true *A. napellus* contain four alkaloids. Only one of these has so far been crystallized, namely, aconitine, whose chief physical and chemical properties, and those of its characteristic compounds, are minutely described. This alkaloid was extracted from the roots by means of a process which avoided all risk of decomposing the natural constituents. Special pains were taken to completely purify the base, and satisfactory evidence of its homogeneity was furnished. This alkaloid is evidently the same substance as that first obtained by Wright from commercial roots of *A. napellus*, but in a purer condition.

The quantity of the three uncrystalline alkaloids *aconine*, *napelline*, and *homo-napelline* (so-called on account of its resemblance to napelline) occurring in the roots is more than twice as great as that of aconitine.

The formation and properties of aconine and its conversion into aconitine have been investigated. The author's experiments do not confirm the assertion of Dragendorff and Jürgens that the hydrolysis of aconitine occurs in two stages. On hydrolysis aconitine breaks up into benzoic acid together with aconine, the amorphous base first obtained by Wright and Luff. No methyl alcohol was found at any stage in the process, and no trace of an alkaloid having the properties of picraconitine could be detected. The authors suggest that the amorphous base, which Dragendorff and Jürgens thought to be picraconitine, may have been napelline, arising from the employment of impure aconitine.

The authors contemplate further experiments on the conversion of aconine into aconitine, and also the preparation of other compounds of aconine containing various acid radicles. The examination of the physiological action of these aconine derivatives is likely to throw light on the cause of the intensely toxic property with which the non-poisonous aconine becomes endowed when a benzoyl group is grafted on to its molecule.

The amorphous base, for which the authors have revived the name *napelline*, occurs naturally in *A. napellus*, and is not a decomposition product of aconitine. Its properties do not correspond with those of the amorphous bases obtained by previous workers. It is distinguished from the picraconitine of Wright by not readily forming crystalline salts. It differs from aconine by its solubility in ether, and sparing solubility in water. This alkaloid was observed to be present in the roots of *A. napellus* to quite as large extent as aconitine. Its properties and those of *homo-napelline* are now being further investigated.

The results so far obtained in the examination of the physiological action of the four alkaloids derived from *A. napellus* prove that aconitine is by far the most poisonous of them, and, indeed, it appears to be the most toxic of the vegetable alkaloids.

The crystallographical characters of the aconitine obtained during the course of these investigations are described in a separate paper by Alfred E. Tutton.[2]

HYOSCYAMINE IN LETTUCE.

T. S. Dymond[3] has established the fact that at the flowering period both the wild and cultivated lettuce contain hyoscyamine, and that it is probably to the presence of this alkaloid that the sedative and anodyne action of the preparations of the plant is due. The amount of hyoscyamine contained in the extract of common lettuce does not exceed 0.02 per cent., whilst the fresh plant cannot contain more than 0.001 per cent. Specimens of "lactucarium" of both English and German manufacture were found to be entirely free from mydriatic properties; neither did they contain any alkaloid whatever. This preparation is probably inert as a soporific. In connection with the use of lettuce as a vegetable, the fact that it contains a poisonous alkaloid is of no great importance. It is only eaten in the earlier stages of its growth, before the bitter taste noticed in the older plant has developed, and while the amount of alkaloid, if any, is extremely small.

It appears that this is the first occasion on which hyoscyamine, or any alkaloid belonging to the mydriatic group, has been found in a plant not belonging to the natural order *Solanaceæ*.

ACTION OF CERTAIN LIQUIDS ON ALUMINIUM.

Adverse opinions having been expressed in connection with the application of aluminium to domestic, food storage, surgical and such like purposes, G. Lunge[4] instituted the following experiments with commercial rolled sheet aluminium 1 millimetre thick, and containing 99.20 per cent. of aluminium, 0.55 of silicon, 0.25 of iron, and a trace of copper. Suitable strips were cut from this, and, after the edges and compressed rolled surface had been removed by filing, the strips were thoroughly cleaned by washing with soda, then successively with water, sulphuric acid, and again water, finally scrubbing again with distilled water, rinsing with alcohol, and drying in an oven. Three strips were weighed and then suspended, without touching one another, from glass hooks, in corked flasks, containing about 400 cubic centimetres of the liquids examined, comprising ordinary claret and hock, brandy, pure 50 per cent. alcohol, solutions of tartaric, acetic, citric, lactic, butyric, boric and salicylic acids, phenol and tea, coffee and beer. After six days, the strips were removed, washed, and weighed, and the experiments repeated for another period of six days. The conclusions are that tea, coffee and beer are practically without action on aluminium, brandy nearly so, whilst the action of acids and acid liquids, although more pronounced, is far too slight to cause any alarm; in the worst case, acetic acid, only five milligrams were dissolved per 100 cubic centimetres in six days; and such action in a quart canteen, supposing it always to be full, would only amount to 1 gram in 200 days. The author hence asserts that aluminium may be employed without fear for holding articles of food, at least at the ordinary temperature.

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[1] Journal of the Chemical Society, London, May, 1891, p. 271; April 1892, p. 385; May 1892, p. 395.

[2] Journal of the Chemical Society, London, May, 1891, p. 288.

[3] Journal of the Chemical Society, London: Transactions, January, 1892, p. 90.

[4] Journal of the Chemical Society, London, June, 1892, p. 687; from Chemical News.

URINARY PIGMENTS.

Hoppe-Seyler's [5] investigations show that the urobilin in the urine is increased by: (1) Stasis of the bile in the liver, provided bile can pass into the intestine, and diuresis occurs, as in polycholia. (2) Stagnation of the contents of the large intestine, not of the small intestine. (3) Hæmorrhages into internal organs.

Approximately the normal amount is found in: (1) Pernicious anæmia. (2) Leukæmia and pseudoleukæmia.

It is diminished in: (1) The suspension of hepatic activity that occurs in cachexia, inanition, and many forms of anæmia. (2) Stasis of bile in the liver, if bile does not pass into the intestine and no diuresis is produced. (3) In the course of jaundice, sometimes. The amount of fæcal pigment is no gauge of the amount of urobilin in the urine.

A table is given comprising particulars of 55 cases of various diseases, which are compared with eight normal specimens. The normal mean amounts to 0.120 gram in the twenty-four hours.

For comparative purposes the amount of urobilin in urine may be estimated in the following way: 100 cubic centimetres of urine is acidified with dilute sulphuric acid, and then saturated with ammonium sulphate. This salt precipitates all the urobilin. The red flocculi are collected on a filter, washed with concentrated ammonium sulphate solution, and extracted with equal parts of alcohol and chloroform in a flask, filtered, and the residue is then again extracted with the alcohol and chloroform; water is added to the extract until the chloroform separates. The chloroform solution is then evaporated in a weighed beaker over a water-bath, dried at 100°, extracted with ether and filtered; the residue is again dissolved in alcohol, placed again in the beaker, evaporated, dried, and weighed.

H. Rosin [6] has investigated the various red pigments that have been described, under different names, in normal, and more particularly in morbid, urines. One of these appears to be indirubin or indigo-red, although its absolute identification with the indigo-red obtained from plants has not, hitherto, been thoroughly worked out. The imperfect data given by various workers on urinary pigments render it also desirable that those which are, as well as those which are not, identical with indigo-red should be accurately determined.

Indigo-red was prepared artificially from commercial indigo; it was also prepared by a modification of Berzelius's method from the indican of plants, and also from the urine. The percentage composition, the crystalline form, and other properties, and the relation of the pigments to indigo-blue were in all cases absolutely identical.

The pigments which are identical with indigo-red are Heller's urrhodin, as Schunk first showed, Leube's pathological urinary pigment, and Plósz's urorubin. Those red pigments which are not the same as indigo-red are the scatole pigment, Nencki and Sieber's uroroseïn, which has characteristic solubilities and reactions, uroerythrin (the pigment in deposits of urates), urohæmatin, Giacosa's pigment, and urorubrohæmatin.

O. Hammarsten [7] has communicated a very thorough investigation of the urine in four cases of hæmatoporphynuria, in which the pigments were all separated, and the hæmatoporphyrin crystallized as a hydrochloride. The cases were all women suffering from melancholia or mania, and were all treated with sulphonal.

Urine No. 1. — The pigments found were: (1) Urobilin. (2) A yellow pigment, probably identical with that in normal urine. (3) Hæmatoporphyrin. (4) A red-brown pigment which gives no fluorescence with zinc chloride and ammonia, and so does not belong to the urobilin group.

Urine No. 2. — The pigments (1), (2) and (3) were the same as in urine No. 1. (4) A red-brown pigment similar to Le Nobel's hexahydrohæmatoporphyrin. (5) A chromogen of a pigment of the urobilin group. (6) A chromogen which, on the addition of acids, yielded a rose-red pigment which, however, is not identical with indigo-red or uroroseïn.

Urines No. 3 *and* 4. — In the main the same as urine No. 1.

A case of hæmatoporphynuria, occurring in a woman suffering from melancholia and who had been taking sulphonal for five months, is described by Dr. W. D. Halliburton.[8] In this case the high-colored urine had, however, only lasted for seven weeks.

According to A. E. Garrod,[9] the pigment present in the urine of rheumatic patients rarely, if ever, imparts a characteristic color to the urine; after separation of the pigment, however, it usually shows, in an alkaline solution, the five-banded spectrum described by MacMunn as characteristic of urohæmatoporphyrin. In some cases it appears to be ordinary hæmatoporphyrin, and in acid solutions gives the two-banded spectrum characteristic of that substance. The occurrence is quite independent of drug treatment.

In fourteen out of twenty cases of chorea, the same urinary pigment was present. In these fourteen cases there was either a rheumatic history or the presence of cardiac murmurs. In the remaining cases, where the pigment was absent, cardiac trouble and rheumatic history (personal and family) were both absent.

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[5] Journal of the Chemical Society, London, October, 1891, p. 1278; from Virchow's Archiv, cxxiv, p. 30 and 47.

[6] Ibid. July, 1891, p. 850; from Virchow's Archiv, cxxiii, p. 519-566.

[7] Ibid. May, 1892, p. 649, from Skand. Arch. f. Physiol., iii, 319.

[8] Proceedings Physiological Society, 1891, p. 21.

[9] Journal of the Chemical Society, London, June, 1892, p. 741; from Lancet, 1892, i, 793.

ALCAPTONURIA.

M. Wolkow and E. Baumann[10] report a case in which the peculiar reducing substance in the urine differed from those heretofore isolated in such cases. They have given to the new compound the name, *homogentisic acid.* For its isolation the urine was rendered strongly acid with sulphuric acid, and shaken with ether. The syrupy residue left upon evaporation of the ether was dissolved in 250 cubic centimetres of water and precipitated by 30 cubic centimetres of lead acetate solution, one to five; the lead compound was then decomposed by hydrogen sulphide. The acid was again extracted with ether, and was obtained, on evaporation, in the form of large colorless prismatic crystals, melting at 146.5–147°; it is readily soluble in water, alcohol, and ether. Its aqueous solution gradually becomes dark upon exposure to the air; it darkens immediately upon the addition of an alkaline hydrate or carbonate. It reduces silver nitrate after some seconds. This reduction takes place immediately if an ammoniacal solution of silver nitrate is employed. It reduces Fehling's solution slowly in the cold, rapidly on heating. With Millon's reagent, it gives a yellow coloration, and after a short time a yellow precipitate which turns red on boiling. It is a monobasic acid and contains two phenolic hydroxyl groups. The authors have obtained the *lead, ethyl,* and *methyl* salts of the acid, the *di-methyl* acid, and the *lactone* of the acid. *Homogentisic* acid is not identical with Kirk's uroleucic acid. It is suggested that Marshall's glycosuric acid is a mixture of homogentisic and uroleucic acid. A method is given by which the acid can be estimated in urine by means of its reducing action on silver salts.[11]

The urine in this case contained 0.226 per cent. of the acid; the total daily output was 4 grams. The authors conclude that proteids form the source of the acid, and that tyrosine is an intermediate product in its formation.

PUTREFACTION OF BILE.

The antiseptic properties of bile are, if existent, very slight. Bile itself rapidly undergoes putrefaction; and various meat infusions, if mixed with bile, also readily putrefy. C. Ernst[12] has investigated the products of such putrefactions, the most striking result being that those mixtures containing most bile or bile alone, contained most indole. Further, some experiments appear to show that the source of this indole is the so-called mucin of the bile. The pancreatic juice does not seem to hasten the formation of indole from bile mucin. Further, in the intestines most indole is obtainable from the lower portions, where the bile has acted longest.

ETHEREAL HYDROGEN SULPHATES IN THE URINE, AND DISINFECTION OF THE ALIMENTARY CANAL.

A. Rovighi,[18] from experiments on his own person, on various patients, and on dogs, draws the following conclusions:

(1) The quantitative estimation of the ethereal hydrogen sulphates in the urine is a trustworthy criterion of the amount of putrefactive change in the intestine.

(2) The amount of these substances passed varies with the time of day, so that it is necessary to examine a specimen of the mixed twenty-four hours' voidings.

(3) In children, the amount passed is less than in adults.

(4) Oil of turpentine and camphor in large doses lessen the putrefaction in the dog's intestine, and, consequently, the output of ethereal sulphates in the urine.

(5) In the human being, given either by mouth or rectum, these drugs have not the same efficacy.

(6) Tannin clysters lessened, but only very slightly, the ethereal hydrogen sulphates of the urine in a case of enteroperitonitis, where their amount was excessive.

(7) A saturated solution of boric acid injected into the intestine is more effective; but the absorption of the acid by the intestinal mucous membrane is dangerous.

(8) The use of Carlsbad salt and Marienbad water is followed by an increased output of ethereal hydrogen sulphates for the first few days: this is followed by a very marked diminution.

(9) Kephir (one and one-half litres per diem) is an excellent means of lessening intestinal putrefaction. Its action depends, in part at least, on the lactic acid it contains.

DETECTION OF ALBUMIN IN URINE.

P. Crocco[14] has found that the urine excreted in certain forms of liver disease, when tested by ordinary methods, gives precipitates which may be mistaken for albumin, but in reality consist of bile pigments, more particularly biliverdin. On treating such urine with acetic acid, a turbidity or precipitate either forms in the cold or on gently warming at a temperature insufficient to precipitate albumin. The precipitate is likewise thrown down by quantities of mineral acids too small to affect albumin; it is soluble in alcohol and does not give the biuret reaction. To avoid error, it is sufficient to treat the urine with two to three per cent. of concentrated acetic acid, leave it in the cold for a few hours, and filter before applying the ordinary tests.

INFLUENCE OF ACIDS AND ALKALIES ON THE ALKALINITY OF HUMAN BLOOD, AND ON THE REACTION OF THE URINE.

A. Freudberg[15] gives the result of a great number of observations on the blood and urine of patients suffering from a variety of diseases, and also after the administration internally of various acids and alkalies, from which the following general conclusions are drawn:

Hydrochloric acid (four to eight grains of the officinal acid per diem) does not alter the alkalinity of the blood. Only one exception was noted. The acidity of the urine is, however, always increased.

Lactic acid (ten to thirty grains) lessens the alkalinity of the blood by one-fifth to one-fourth. The acidity of the urine is increased, but not markedly so, and not in a degree corresponding with the amount of acid given. It is no doubt to a large extent oxidized in the body.

Tartaric acid (five to ten grains) lessens the alkalinity of the blood by one-sixth; it also increases the acidity of the urine, but not markedly. It is also burnt to a great extent in the body.

Sodium hydrogen carbonate (five to fifteen grains) in three cases increased the alkalinity of the blood by one-fourth; in two other cases there was no change. In all cases the urine was strongly alkaline.

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[10] Zeitschrift f. physiol. Chemie, xv, pp. 228–285.

[11] See also, Zeitschrift f. physiol. Chemie, xvi, p. 268.

[12] Journal of the Chemical Society, London, April, 1892, p. 518; from Zeit. physiol. Chemie.

[13] Journal of the Chemical Society, London, July, 1892 p. 226; from Zeit. physiol. Chemie.

[14] Journal of the Chemical Society, London, May, 1892, p. 667, Abstract.

[15] Journal of the Chemical Society, London, December, 1891, p. 1528; from Virchow's Archiv, 125, pp. 566—600.

The alkalinity of the blood was estimated by a slight modification of v. Jaksch's method of titrating small quantities with very dilute tartaric acid. Recent researches by Bohr have shown that estimation of the carbonic anhydride leads to an incorrect estimate of the alkalinity. The reaction of the urine was estimated by titration with normal soda solution or normal oxalic acid according as the original urine was acid or alkaline respectively.

ESTIMATION OF PHENOLS IN HUMAN URINE.

Rumpf[16] claims that the gravimetric estimation of phenol as tribromophenol in the distillate from acidified urine gives most inaccurate results: that Koppeschaar-Beckurt's method of titration with potassium iodide is trustworthy. Paracresol also cannot be estimated as the tribromo-derivative. The substance obtained by adding bromine to the distillate from urine contains a pigment and two other substances: one of these, insoluble in sodium carbonate solution, is dibromoparacresol: the other, which is soluble is tribromophenol; it is, however, present in very small quantities. Hence it is inferred that paracresol is the most abundant substance of the phenol group in the urine.

Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, held in New York, June 22, 23 and 24, 1892, the President, Dr. C. L. Dana, in the Chair.

The President, in opening the proceedings, said that, in view of the immense amount of work before the session, he should waive the usual address. After briefly reviewing the progress of the Association since its inception, and mention of those members deceased since the last meeting, paying special tribute to the memory of the late Dr. Birdsall, he declared the eighteenth annual meeting open.

RESEARCHES UPON THE ETIOLOGY OF IDIOPATHIC EPILEPSY.

Dr. C. A. Herter, of New York, read a paper on this subject, which aimed to present the results of a research upon epilepsy that had been in progress the past winter. This research was originally undertaken with a view to studying the relation of uric acid excretion to the epileptic paroxysm, a line of inquiry brought to notice by recent publications of Haig, an English writer. According to this author the *grand mal* seizure was determined by an excessive accumulation of uric acid in the blood. In the study of this question the speaker's results were not confirmatory of the view by Haig. Certain observations, however, of another kind, had suggested the possibility of a causal relationship, in some cases, between putrefactive processes in the intestine and epileptic seizures. Evidently the planning of a study of this character involved the assumption that the discharge of nerve force from the cortex which constituted the epileptic seizure, might be in some way conditioned by the quality of the blood by which the cerebral elements were nourished.

The idea that epileptic paroxysms might be related to toxic substances in the blood was not a new one, the clinical aspects of epilepsy being such that they had suggested a dependence of this kind to some authors who had not been satisfied with the purely mechanical explanation of the epileptic seizure. That toxic substances produced in the intestine might sometimes determine the occurrence of epileptic seizures was a possibility that occurred to one on considering that in cases of epilepsy the symptoms of disordered digestion, were associated with an unusual frequency of the seizures. The observations which the author had made upon intestinal putrefactive processes in epileptics were based upon a study of the urine of such cases. Certain substances in the urine, namely, the ethereal sulphates, had been shown to be derived from putrefaction in the intestine and the extent to which such putrefaction occurred might be inferred, from the quantity of these substances in the urine. These substances had been studied in thirty-one different cases of epilepsy, most of the cases being unquestionably idiopathic in nature, according to the generally accepted meaning of the term. In the majority of these cases the uric acid excretion also had been studied. The results that had been derived from the inquiry might be presented under the following tables: First, synopses of the clinical histories of the cases of epilepsy that formed the basis of the paper, together with tabulated results obtained from the analysis of the urine. Second, conclusions relating to the excretion of uric acid in epilepsy. Third, conclusions relating to the occurrence of intestinal putrefaction in epilepsy. Of the thirty-one cases of epilepsy, *grand mal* seizures were the distinctive features in twenty-nine. In the remaining cases there were very frequent *petit mal* seizures. In relation to the excretion of uric acid in epilepsy, the speaker's figures showed that before the seizure the excretion had only in rare instances varied from the limits of health. This was true of the cases where the urine just before the paroxysm was examined and of the instances where only the urine for the twenty-four hours preceding the day of the seizure was studied. In general it might be said that the urine passed after a seizure was apt to have a higher uric acid ratio than the urine before or about the time of the seizure. This tendency to a high uric acid ratio after paroxysms was to be regarded as a consequence of conditions which had determined the seizures, or possibly to the seizures themselves. The excess of uric acid that was observed in epilepsy could not reasonably be construed as the cause of seizures. The foregoing remarks applied to cases of *grand mal.* In *petit mal* cases a continuously high uric acid excretion had been observed and appeared in some way to be related to the cause of the seizures. It was found in two cases of this type that when the excretion of uric acid was reduced, the seizures were greatly reduced in frequency.

In regard to the conclusions relating to the occurrence of intestinal putrefaction in epilepsy, of the twenty-nine cases of *grand mal,* twenty-one of them showed unmistakable evidence of excessive intestinal putrefaction. Furthermore, a large proportion of the cases in which the observations were of such a character as to render a comparison possible, showed at least a general correspondence between the seizures and the degree of intestinal putrefaction, as gauged by the analysis of the urine. As regarded the possible dependence of these results upon any peculiarity in the diet of the patients, it might be said that no peculiarity existed. The possibility that the results might depend, in part at least, upon the influence of bromides was not so easily to be disposed of. The question really resolved itself into one of probabilities and it was believed that the following considerations rendered it in the highest degree improbable that the bromides were responsible for the evidence of putrefaction. The quantity of the bromides taken, being from twenty to eighty grains per day. Again the evidences of intestinal putrefaction were distinctly greater about the time of the seizures than in the intervals. Also seizures had been controlled by influences which coincidently controlled the products of putrefaction. While the speaker could not claim that epileptic seizures were ever the consequence of abnormal putrefactive processes in the intestine he had at least obtained evidence which forcibly suggested that epileptic seizures were sometimes the consequence of toxic substances produced in the intestinal canal and that the formation of these substances was related to processes of putrefactive nature.

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[16] Journal of the Chemical Society, London, April, 1892, p. 544; from Zeit. physiol. Chem., 16, 220-242.

Dr. B. Sachs expressed his appreciation of the excellent and original work done by Dr. Herter. He thought, however, that the mystery which had surrounded the etiology of idiopathic epilepsy still remained.

Dr. E. D. Fisher had seen some of the cases referred to, and thought that the clinical facts tallied with the conclusions so far deduced by the author of the paper. Given an unstable cortex, the speaker saw no reason why such chemical products might not act as the irritating cause of a seizure. In epilepsy primarily due to a special lesion, such irritation would bring on an attack, and there was no reason why the same should not obtain in idiopathic epilepsy. So far as he could determine, the previous and after effects of the epileptic condition were the same in organic as in idiopathic epilepsy, and putrefactive changes would probably act similarly in both.

Dr. F. X. Dercum asked if there were any facts which would go to prove that the ethereal sulphates were really irritative in their action.

Dr. Herter replied that as yet no experiments had been made with a view to determining this point, but the evidence suggested a relationship of the kind mentioned though it was not as yet proven.

Dr. Wharton Sinkler thought the paper an exceedingly valuable one. As illustrative of the action of putrefactive changes in producing epileptic attacks, he cited the case of a patient who, as a rule, had a seizure every one or two months, but who had found that such attacks could be frequently warded off by active purgation.

Dr. Riggs said, that, in the use of antiseptic agents, he had found the addition of naphthol and charcoal to the salicylates and sulphates of bismuth valuable in reducing the putrefactive change of a nitrogenous diet. He preferred the albuminous proteids in diet, as being more easily digested.

Dr. Hobson thought it was a question whether the presence of ethereal sulphates might be regarded as a cause or effect of the epileptic condition.

Dr. H. A. Tomlinson emphasized the fact that keeping the bowels open and seeing to the proper exercise of the epileptic, ensured them fewer convulsions and a less uncomfortable existence.

Dr. Herter said that he wished it understood as his view that the substances he had been isolating acted not by themselves as a cause but as irritants upon a predisposition. It was important to distinguish between the relation of uric-acid excretion and the excretion of the ethereal sulphates. It had been determined by observation that the proportion of uric acid was largely increased after an epileptic seizure, reaching the maximum one or two days after the attacks. The ethereal sulphates were, on the contrary, increased at the time or immediately before. This fact then suggested the causal relation on the part of the sulphates, while the uric acid appeared as an effect. He did not think the seizures could have any effect on the ethereal sulphates, as these were the outcome of putrefactive changes.

Dr. J. J. Putnam said all these researches went to determine how much more complicated were all these neuroses than was usually supposed.

Dr. J. W. Putnam, of Buffalo, read a paper on

SLEEP MOVEMENTS OF EPILEPSY.

In attempts at localizing the seat of irritation in the brain in cases of epilepsy, we had for data the history of former head injury, of which the proof was in the finding of adherent scars in the scalp, sometimes in the distinct depression in the skull. When there was no history of cranial injury, we often got a history of the character of the attacks, and upon this history of the aura and the muscles first convulsed, we were obliged to rely for our localization. Owing to the nature of the disease, dependence had to be placed upon the observation of others in regard to preliminary movements. In the experience of many it had been difficult to obtain clear and positive statements as to the manner of the beginning of an attack.

Last fall the speaker had a patient who was at that time having a convulsion almost every evening. While waiting to observe an attack, he had noticed that the patient was restlessly tossing her left arm while the right was quiet. The movement was different from the ordinary purposeless movements of restless sleep. It was a slow raising of the arm from the chest or side up over the head where it would remain for a moment and then slide down the pillow. This had occurred several times. No movements of the legs were observed. There was no convulsion on the night of the observation, but the mother said that during attacks the patient always turned on her left side. The speaker thought that a series of observations of epileptics during sleep might show similar movements which might be of localizing value. He had made a study in this direction, and was satisfied that much could be learned in regard to localizing the seat of trouble by having a record made of the sleep movements. In attempting to interpret these sleep movements, the speaker had carefully read the literature on epilepsy, but could find no mention of observation in this direction. Hughlings Jackson had assumed that there were three levels in the motor nervous system, which he had called the highest, middle and the lowest level. The highest, chiefly motor, was the frontal lobes, the middle level was composed of the portion which we understood as the motor region, comprising the ascending frontal and parietal convolutions and the corpus striatum. The lowest level consisted of the cornua of the cord, Clark's column and Stelling's nucleus. Starting with this theory, the speaker ventured the following explanation: When the patient was in a profound sleep, all these levels were in a state of functional rest, and we had a quiet sleep undisturbed by movements, as no stimulus was transmitted to the muscles. In a less profound sleep, one in which the patient was restless, he had assumed the highest level to be at rest and no longer exerting an inhibiting control over the middle level. This, in a healthy person, would show itself by general restlessness. In an epileptic, in whose motor region there was an irritated area of greater excitability than normal, it was assumed that it was less profoundly asleep than other areas. Hence, in such conditions we might have pronounced and definite movements occurring during sleep, and limited to the limb controlled by the irritated area. These movements might occur in only a few patients, and might occur in these only when slumber was disturbed. Whether or not he was right in his interpretation, and whether it would be considered safe to localize a lesion from sleep movements alone, the speaker could not say, but wanted to bring the question before the Society, with a hope that it would be discussed.

Dr. J. J. Putnam thought that in epilepsy, as a rule, the lesion consisted of diffuse, sclerotic changes, acting diffusely as did poisons. The localized expression of these changes indicated that certain portions of the brain were, or had become, relatively more influenced by the morbid changes. Operative procedures were not likely to succeed if this theory was correct. He should be disinclined to operate for localized movements occurring during sleep.

Dr. Sachs thought that sleep movements might point to the fact that the centre governing the part moved in sleep would be more irritable than normal. He was reluctant to attach too much value to the sleep movements as a symptom, but supposed we should now hear much more on the subject than heretofore.

Dr. J. W. Putnam had not felt that it would be justifiable to have operations undertaken upon observations of the sleep movements alone. Still he thought they indicated the seat of irritation, and hence there was added one more strand to the rope of evidence.

Dr. Isaac Ott, of Easton, read a paper on

THE SEAT OF ABSINTHE EPILEPSY.

As yet the seat of epilepsy had not been revealed, either by coarse or fine anatomy; much more had been accomplished by physiology in the elucidation of convulsive phenomena. The speaker reviewed the various experiments that had been made in localizing convulsive movements, but dwelt especially upon the absinthe tests. One observer had found that, after injection into the jugular vein of two drops of essence of absinthe, there followed these conditions: The facial muscles began with a single clonic spasm passing into a state of tremulous tonic spasm. This order of convulsion passed rapidly down the body until the tonic spasm in the limbs was extremely marked. After a short period, tonic spasms gave way to a long series of clonic twitches. Accompanying these convulsive phenomena there was a profuse salivation, and sometimes escape of urine, while in cases in which narcosis had not been employed unconsciousness and coma were early symptoms. The effect upon the cord was also tested by means of the electrical method, using both the galvanometer and the electrometer. The results showed that the employment of absinthe gave maximal electro-motive effects in the sciatic nerve, through the overwhelming discharge of the highest cortical centres. It was also observed that absinthe caused an additional electric excitation of the centres, producing more energy. Absinthe not only produced a typical epilepsy in animals, but also in man.

It was evident that in this medicament we had a most valuable means to study the origin of convulsive disorders. That the convulsions were not due to circulatory changes was an excluded factor. There remained yet the determination of the mode of origin in the nervous system of the convulsion. It was believed by some to originate in the spinal cord, but this theory had been exploded. If the whole cortex was removed in an animal, tonic convulsions ensued. If the corpus striatum or optic thalami were divided, still spasms of a tonic nature continued, with no clonic stage. The same result ensued after removal of the corpora quadrigemina; if, however, the pons was divided, then all convulsive acts ceased. If, in an animal, the motor centres were removed on one side, then tonic spasms took place on the opposite side from the lesion. The convulsive movements upon the side opposite the lesion were weaker than when the cortex was intact. Irritation of the cortex called out tonic and clonic movements. Further, if the cortex was cut off and the underlying fibres excited, we only obtained tonus. If a fit was in full progress, shaving of the cortex stopped it immediately. These facts proved that the seat of origin of tonic and clonic movements in epilepsy was in the cortex, and their expression took place mainly by means of ganglia seated in the pons. That no clonic convulsions could be observed after removal of the brain in front of the pons was not always a fact, was proven by the author in one case, in which the injection of essence of absinthe produced violent clonic spasms. The word "cortico-pontal" might express the origin of convulsive epilepsy due to absinthe.

A NEW SYMPTOM INDICATING COMBINED CEREBELLAR AND SPINAL INCO-ORDINATION.

Dr. E. C. Spitzka, of New York, read a paper with this title.

The attitude and appearance of the patient so affected was characteristic of that form of pseudo-hypertrophic paralysis in which the atrophy of the arms markedly antedated wasting in the lower extremities. It was these patients whose actions first called the attention of the speaker to the peculiar movements which he had since been able to collate. Whether dressed or undressed, under examination and observation or not, the patient, a child, had a habit with his right hand, thumb and fingers flexed, the finger but slightly so, of making a sudden motion towards the nose, such as certain persons in the lower walks of life were apt to indulge in when sniffing; at the same same time there was a straightening out in his attitude as if all the muscles involved in maintaining the erect posture were associated in the act. A peculiar expression, would cross his face, the head and eyes being turned towards the approaching finger. The child had also certain imperative conception and fear of going under a certain tree, a terror of a Newfoundland dog at the later hours of the day, which at other times he showed a great affection for. He had also a terror of the stairs, and even on a dead level, on the ground floor of the house, he had an impression as of a yawning precipice. The mother had informed the speaker that there were four members of her husband's family in insane asylums, — a brother, sister, first cousin and grandfather. The uncle and cousin had showed exactly the same motion of the hand. The father of the child had some slight ataxia in the hands. The child had progressed as these cases usually did, had developed a more marked grade of imperative conceptions and morbid fears and a slight grade of imbecility. Since then the speaker had seen four other patients in whom similar strange automatic movements were noticeable; in two cases they were bilateral, limited to the arms; in the third associated with salaam movements of the head and neck; in the fourth there was a predominant effort to make a hop-skip-and-jump action. The fourth case was the only one in which there had been any doubt as to the interpretation of the symptoms, were it not for the bad family history. He had had a motion strongly resembling that of the first patient, exceeding it, however, as regarded the turning of the head and neck. The index-finger alone was raised and slightly curved, and the patient would start at the rate of two or three times a minute, imitating a motion which one would make in saying, "I hear a noise there." There was a fixed hallucination of sound located, the patient said, exactly six inches in an accurately defined direction from the right parietal boss. This had no relation which could be elicited with the existing paranoia. The patient had eventually died of diarrhœa, and an autopsy was obtained. No structural disease, either of the cord or brain, could be found. There was a heterotopia parallel to the claustrum at the region corresponding to the posterior slope of the island of Reil on the left side, also some peculiarities of the gyri which were regarded as abnormal. They were asymmetrical and atypical.

(To be continued.)

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MASSACHUSETTS MEDICAL SOCIETY. SECTION IN SURGERY.

Meeting, June 7th, 1892.

ACUTE INTESTINAL OBSTRUCTION.[1]

Dr. J. C. Irish, of Lowell: The recorded cases of operation for acute intestinal obstruction are comparatively few; much less in number than in most other affections for the relief of which abdominal sections are done. Reports of individual operations would therefore seem still to be of some value. For this reason in part, and partly as an illustration of some details of treatment, I present the two following cases:

Miss S., age thirty-two, Hudson, N. H., under the care of Dr. Wallace, of Nashua, who favored me with the report which follows:

"For several weeks the patient had suffered from indigestion with obstinate constipation. December 3d the bowels were evacuated by the use of active cathartics. From this time no fæces or gas passed by the rectum until after the volvulus that existed had been relieved by operation.

"December 6th, Miss S. began to vomit at frequent intervals, being unable to retain any food. Her temperature was but slightly increased, reaching 99½°, and her pulse somewhat accelerated. She did not at any time suffer from severe pain in the abdomen, nor were the bowels at all distended. The incessant vomiting, however, persisted in spite of all remedies.

"I diagnosticated obstruction high up in the small intestine for the reason that the vomited matter, consisting largely of bile, at no time presented any fæcal odor. Castor oil, calomel and croton oil were administered in large doses, with frequent rectal injections, but failed to produce any movement of the bowels. This failure of treatment to obtain any action, together with the persistent vomiting, was the ground of diagnosis of acute intestinal obstruction.

"The patient's condition from December 6th to December 16th remained practically unchanged, with the exception that she steadily lost strength and that her pulse reached 120 per minute, and had become very feeble."

December 16th, I saw the patient with Dr. Wallace for the first time. Her general condition showed extreme prostration. Examination of the abdomen revealed no distension; in fact, the abdominal walls seemed somewhat retracted.

First, I commenced an incision through the median line about four inches in length, introducing my hand within the abdominal cavity. I explored carefully the ilio-cæcal region but there was no evidence of any obstruction in this vicinity. I then extended the incision several inches above the umbilicus, opening to almost its entire extent the abdominal cavity. The large intestine contained a small amount of gas. The small one was absolutely flaccid and empty, and its flattened surfaces presented a ribbon-like appearance. I immediately commenced to draw the small intestines outside of the abdomen, and as I proceeded and approached the orifice of the stomach, the intestine began to present a darkened hue — I was then certain I was approaching the seat of the obstruction. I drew out as much of the intestine as I easily could do, and introduced my hand in the neighborhood of the duodenum, expecting to find the obstruction by adhesions, but I could neither see nor feel anything unusual. All at once in the midst of these manifestations, the small intestine began to rapidly fill with air, and became distended through its whole length in about one moment.

Now I really cannot positively affirm, by anything I saw or felt, the exact character of this obstruction; that is, what it was due to. Still, I have no doubt it was a volvulus, although not absolutely demonstrated by my operation.

This patient went on to a rapid and uneventful recovery.

The other case to which reference has been made, I operated upon for acute intestinal obstruction, July 24, 1885. This case has been reported and is now referred to simply with reference to certain details of the operation. This was an instance of acute obstruction by intussusception at the ilio-cæcum.

The intestines were extremely distended with gas, and no tumor could be felt by external examination. The diagnosis was established by failure of cathartics to induce any fæcal discharge.

A short incision was first made through the abdominal walls, but it proved to be entirely useless for all purposes of examination. The incision was then extended to nine inches in length, the bowels were withdrawn from the abdominal cavity, the obstruction at once found and corrected, and after a transverse division of the right rectus, the bowels were replaced.

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[1] "The Diagnosis and Symptoms of Acute Intestinal Obstruction," by Dr. F. C. Shattuck, will be found on page 129 of the Journal; and "The Surgical Aspects of Acute Intestinal Obstruction," by Dr. John Homans, on page 131.

Before the rectus was divided it was impossible to return them to the abdominal cavity.

In the treatment of obstruction by operation, the length of the incision and its location I believe to be a matter of great importance. When the point of obstruction is indicated by a tumor that can be recognized by external manipulation, the incision should be made at that place in the abdominal walls. In the larger number of cases we have, however, no such precise indication of the locality of the lesion. Then a long median incision with immediate withdrawal of the intestines so far as possible from the abdominal cavity, facilitates the rapidity of the operation.

The short incision that has been so much advised only permits us to explore the abdominal cavity with our hand and not with our eyes. If we should be so fortunate as to find the obstruction, we would often be unable to correct it in the most careful manner, from lack of space and observation. While with the long incision and the bowels outside, the flaccidity of the distal portion of the intestines, and the distention of the proximal, would rapidly and unerringly guide us to the point of obstruction. In this way much handling of the intestines is avoided and the occlusion is often quickly relieved.

In both the desperate cases I have reported, the success, I think, was entirely due to the short time required for the operation.

When these patients come under the care of the surgeon, they have suffered for a variable time from an affection that has greatly depressed their vital powers. They are often unable to endure the shock of any long-continued operation. Therefore the long incision and immediate withdrawal of the intestines is recommended as a time-saving procedure. Any difficulty of replacing them is at once relieved by the division of one rectus, to which there cannot be the least objection.

Dr. J. C. Warren, of Boston: It is my experience that obstruction by cancer is of the chronic type. We have a history of recurring obstruction: there are periods of constipation, vomiting and tympanites, which are followed by relief, and the patient may live a long time without an operation. Colotomy is a great relief to many cases of this class. In the rarer instances of acute obstruction the disease is usually far advanced, and little benefit is to be derived from an operation.

In regard to exploratory operations in cases of cancer, I think the abdomen can be opened without danger if unnecessary manipulation of the diseased tissue is avoided. There is a type of obstruction to which allusion can appropriately be made, as laparotomy is now often performed for its relief, and that is imperforate anus or rectum. It is well to remember in this connection that "paradox of M. Huguier" who states that the sigmoid flexure in infants is usually in the right iliac fossa. In point of fact the flexure is found in this position in only 20 per cent. of all cases.

Of the cases of acute intestinal obstruction of the class we are to discuss to-day, I have seen examples of volvulus, of intussusception and of obstruction by bands. I have selected but one case to report to-day, and present that on account of the unusual nature of the cause of the obstruction. The patient was a stout and strongly-built woman forty-five years of age, with a history of uterine disease of twelve years' standing. She had been very much overworked as the agent of a charitable society, and her local pains had been more marked for several months previous to her attack. She entered the Massachusetts General Hospital November 29, 1890, and was placed under the care of Dr. F. C. Shattuck, by whom she was eventually referred to me for operation. For about a week previous she had been confined to her bed suffering from nausea, and at times vomiting. She was thoroughly exhausted at the time of her entrance, and her temperature was subnormal. The temperature began, however, to rise steadily after the second day, as the symptoms of obstruction developed. No movement of the bowels was obtained beyond the removal of a small amount of fæcal matter from the rectum by enema. The amount of fluid that could be injected into the rectum was exceedingly small. The bowels became tympanitic on the third day, and on the following day the patient began to vomit. When seen by me on the fifth day the patient was lying with the knees drawn up, the abdomen greatly swollen, and was vomiting a thin, pale greenish, watery fluid. No nourishment was retained by mouth or rectum for three days. A slight improvement in the patient's condition made it advisable to wait until the seventh day from the time of the first rise of temperature. The pulse remained strong throughout; at the time of the operation it was 120.

An incision was made from the umbilicus to the pubes, and the hand was introduced into the abdominal cavity. No band could be felt in either inguinal region, and as the distention of the intestines was very great it was decided to puncture the ascending colon which presented. An incision about one inch in length being made, a large amount of gas and fluid fæces was expelled, and the distention was so thoroughly relieved that an exploration in every direction could easily be made. The obstruction was found in the pelvis and was due to the constriction of the sigmoid flexure at the brim of the pelvis by bands of adhesions which filled a greater portion of the pelvis. So extensive were they that no attempt was made to break them up, and the opened intestine was stitched to the lower margin of the wound.

The patient made a slow recovery. Large quantities of fæcal matter continued to ooze from the artificial anus, and on the third day after the operation a movement occurred per rectum. The bowels continued to move occasionally the natural way, although the discharge from the artificial anus continued abundant for a long time. At the present time, eighteen months since the operation, the opening has contracted considerably and the discharges are restrained by a belt and pad which the patient wears. The movements from the rectum take place regularly. I have delayed closing the artificial opening partly because the patient experienced so little inconvenience from it and partly to allow the pelvic adhesions time in which to be absorbed. This form of obstruction is one usually mentioned in the literature of the subject, but it is the second I have seen, the other, not in my own practice, terminating fatally without operation, and it seemed proper to call attention to it on this occasion.

I have had one case of acute obstruction from bands in the upper portion of the abdominal cavity, but the patient refused operation until it was too late. The distention of the intestines was great, but the autopsy showed that the seat of constriction might readily have been reached had the bowels been emptied through a temporary opening.

The case of volvulus I operated upon has already been reported. The twist was high up in a small intestine, an unusual situation. The condition of the bowel was peculiar. The constricted loop was contracted, empty and gangrenous, and the vessels were filled with clots. The gall-bladder was filled with calculi, and was partly surrounded by a collection of pus. The conditions which ordinarily produce a twist were evidently not present in this case.

Dr. A. T. Cabot, of Boston: The subject has been very thoroughly considered by the previous speakers, and I have but little to add to the discussion.

Before speaking on the general subject of the surgical aspect of intestinal obstruction, I wish to make one remark in the direction of diagnosis, Several gentlemen have spoken of volvulus, and Dr. Richardson mentions a special case of volvulus at which I happened to be present, and in which I could not satisfy myself that the condition was caused by a twist. I regarded the case as one of embolism or thrombosis of the mesenteric vessels. These vessels were found at autopsy filled with a clot and the coil of intestine supplied by them was deeply congested and stiff walled, but with no sharp line of demarcation between it and the neighboring intestine. This case, and one other which I saw at autopsy and in which the same conditions of things existed, has made me doubt whether many of the cases considered at the time to be instances of volvulus, are not really cases of stoppage of the mesenteric vessels. I think this point worth noticing and bearing in mind when cases of this class appear.

Regarding the surgical treatment of intestinal obstruction, I entirely agree with Dr. Richardson in regard to the great importance of seeing these patients early, in order to accomplish anything by operation.

Most of the cases are very striking in character. The attack is sudden. A patient in perfect health is seized with what is evidently a serious condition in the abdomen, characterized by extreme pain and vomiting. Usually the onset is very different from a ordinary colic, but when it resembles this there is generally but little difficulty at the end of twenty-four hours in perceiving that something more serious has happened. If the intense pain and vomiting continue, it is evident that the sudden attack is dependent on some mechanical difficulty that has occurred within the abdomen; and ordinarily that mechanical difficulty can only be relieved by mechanical — that is surgical — means. Occasionally nature sloughs off a piece of invaginated bowel; in a volvulus it is possible that it may sometimes untwist itself, but we cannot rely upon such accidental occurrences as a means of cure, and if we wait for such possibilities we shall lose a great many patients. I have often had occasion to regret operating too late, but have never operated too early.

My experience has mostly been in cases of internal strangulation behind bands. I have seen several such cases. In one the band ran from the mesentery to a hernial sac. In another case the band was the result of an adhesion due to an old salpingitis. In another case the band was due to the omphalo-mesenteric remains described by Dr. Fitz. In all of the cases the band was readily found, and could be easily corrected by operation.

If we operate early, when these patients have plenty of strength, they can stand the prolonged search which is sometimes necessary before the cause of obstruction is found. Operating late on a patient who is almost pulseless, we are more likely to be compelled to make an incomplete operation or to find gangrenous conditions which cannot be corrected.

In answer to questions, Dr. Cabot said: It is very hard for me to understand how a loose coil of intestine should so twist itself as to cause strangulation, without some mechanical attachment which should prevent the coil from untwisting. In Dr. Richardson's case, to which I have alluded, it seemed to me that the other coils which were distended with tympanites were quite as much twisted upon themselves as that one which was congested and approaching a gangrenous condition.

Dr. Homans: I should like to say one word about the plugging of the vessels of the intestines and mesentery in a case of volvulus. Any twist, or volvulus, if sufficiently tight and long enough persistent, causes a plugging of all the vesesls in the twisted part and also for a certain distance on either side of the twist. You see this in the ovarian or uterine tumor with a twisted pedicle; you see this follow the torsion of an artery. This twist, or volvulus, stops the circulation, and coagulation is the necessary result, followed by sloughing of the bowel. It seems to me more probable that the volvulus causes the plugging of the vessels rather than the plugging of the vessels causes the volvulus.

Dr. Warren: The condition Dr. Cabot has alluded to is similar to that found in my case of volvulus. There was complete plugging of the large vessels on the proximal side of the twist, which suggested thrombosis or embolism. The collapsed condition of the bowel and the peculiar rigidity of the parts are peculiarities not seen in stragulated hernia or bowels constricted in other ways.

The usual seat of volvulus is in the lower portion of the ilium and the sigmoid flexure. It is a curious fact, mentioned by Kœnig, that the affection is more frequent in certain countries, as for instance Russia, where the length of the small intestine, owing perhaps to the peculiar vegetable diet, is said to be much greater than that of other nations. The stem of each loop will consequently be narrow or the peripheral portion of the mesentery will be unusually wide, and abnormal movements of the intestine may under these circumstances give rise to a twist. Volvulus of the lower ilium or sigmoid flexure may give rise to knots formed by an intertwining of these two loops.

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Recent Literature.

Diseases of the Nervous System. By Jerome K. Bandry, M.D., LL.D., etc. Second edition, 8vo, pp. 352. Philadelphia: J. B. Lippincott Company. 1892.

This is the first volume of a new edition, and contains chapters on cerebral anæmia and hyperæmia, meningitis and insanity. One page is given to paranœa, and nearly ninety to the discussion of obsolete or obsolescent theories of cerebral hyperæmia and anæmia. With the multitude of good books on the subject it seems hardly necessary to issue one made up largely of pages of quotations from standard works like Flint and Pepper, even though it tells us that the starting-point of insanity is not infrequently in the alimentary canal.

The rumor of Professor Koch's illness seems to have been unfounded. He is now said to be in excellent health and attending to his usual duties.

THE BOSTON

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MEDICINE AS A LIBERAL PROFESSION.

In the Address in Medicine delivered before the British Medical Association at its last meeting, Dr. Cuming quotes Bacon's remark that medicine was the most learned of the three professions as indicating the general estimate of its position at the time of Harvey. While arguing that medicine has not maintained its superiority, in that respect, to law and divinity, he adds: "At no period of the world's history has medicine been more assiduously cultivated, never have its ranks been filled by so many able and energetic workers, and at no period have its claims to public usefulness been capable of being so triumphantly vindicated. The question naturally arises in what method can its dignity and usefulness be best furthered and developed, and whether there are any impediments which tend to embarrass its progress and trammel its efforts of which it might be advantageously relieved, and whether its study is being conducted on the lines best calculated to lead to the results at which we aim?"

Dr. Cuming is perhaps too utilitarian in his views as to the future of medicine. In asserting the claims of chemistry, botany and physics, he is inclined to relegate them to a subordinate position, and to have taught even of medical chemistry and natural philosophy no more than is absolutely required for practical use, reserving for the studies more directly connected with medicine the training of the observation and that wide and exact mental discipline which are to the physician as necessary as a well-educated judgment. He deprecates as wasteful and exhausting a study of science so far as it has no practical bearing on the practice of medicine. In the close study of anatomy and physiology, in the great field of research which modern thought and investigation have opened in pathology, bacteriology, the study of phagocytosis, experimental psychology, especially the phenomena of mind in both its normal and abnormal conditions, excluding metaphysics proper, Dr. Cuming finds mental discipline of the highest order, bringing with it the information which the trained physician must possess. He also indicates how, through them, medical knowledge comes to have a direct bearing on subjects of wider and more general interest, and shows how physicians, by bringing their special knowledge to bear on the solutions of some of the most interesting problems which can engage the human intelligence, can best vindicate the dignity of their profession, which will thus have the fairest prospect of again forming as important a factor in promoting the intellectual progress of the race as it was in Bacon's time.

It is inevitable, he thinks, that the study of the old humanities must be curtailed, and must even in some measure disappear from medical education. Greek seems to him doomed past recall, and Latin must make a fight to retain its place. The pursuit of general literature, he said, is everywhere being regarded as less necessary, and from a utilitarian point of view it is impossible to give more than a passing regret to those branches of learning which have so long been regarded as the stamp and evidence of culture.

While it may be true that the diagnostician, the surgeon, or even the teacher may be chiefly utilitarian in their courses of study, the physician needs in treating a disease a liberal education, which must come not only from wide knowledge of human nature but from books and laboratories. The Watsons and Lathams must be as many in the future as in the past. How is this to be accomplished? First, by better methods of study in the schools, economizing time, and secondly, by a more progressive and liberal course toward the professional schools on the part of the universities. The president of Harvard has already pointed out the means of accomplishing both of these desirable ends.

As regards improving the schools, the influence of the medical profession must be for the most part indirect. In demanding that the fourth year at Harvard may be so arranged as to constitute the first year in the medical school, and in insisting that the graduates of the professional schools shall have a voice in the election of overseers of the college, we may help in raising the standard of medical education and in making Harvard a university in the proper sense of the word. The university must gain, by securing the sympathy and interest of men who, as graduates of our medical school, will in time be leaders of public opinion and exert a wide influence at the West and South, where we need our hands strengthened.

◆

RESEARCHES ON THE ACTION OF CERTAIN ALKALOIDAL POISONS ON THE LEUCOCYTES.

Dr. E. Maurel, of Toulouse, has performed an important series of experimental researches on the action of poisons on the leucocytes, the results of which are published in late numbers of the *Bulletin de Thérapeutique.*

With regard to strychnine, he finds that the toxic action of this alkaloid on the animal economy is in the ratio of its destructive action on the leucocytes. "In poisoning by sulphate of strychnine, the death of the leucocytes and that of the animal are simultaneous."

The quantity of strychnine necessary to kill immediately all the leucocytes in one hundred grammes of human blood, has been found to be five centigrammes; this amount of blood may be said to represent one kilogramme of the weight of the body. A much smaller quantity of strychnine — two centigrammes — is equally fatal to the leucocytes in one hundred grammes of blood, though several hours are required for their complete destruction.

The immediate effect of the poison on the white corpuscles is to arrest their spontaneous activity, and fix these elements in the spherical state.

In investigating the action of atropine on the white corpuscles, Dr. Maurel found that here, too, there was a complete concordance between the quantity of toxic material necessary to kill the animal, and that necessary to kill the corpuscles.

Struck by this concordance, which suggests a special rôle of the leucocytes in death by this toxic agent, Dr. Maurel experimented with the hare, an animal which eats belladonna with impunity, to ascertain if the leucocytes of the hare's blood are affected by atropine. He found that this alkaloid was almost without effect on the leucocytes of the hare. His conclusions are formulated as follows:

In the dose of five centigrammes and above, sulphate of atropine instantly kills the leucocytes contained in one hundred grammes of human blood.

In the dose of two centigrammes these elements can live but a few hours, and from the moment of contact, they present sensible modifications in their activity and in their form.

In the hare, on the contrary, the leucocytes can live in a solution of two grammes of atropine to one hundred grammes of blood, and perhaps in a stronger solution.

Lastly, considering the concordance between the quantity of sulphate of atropine necessary to kill a man, and that which suffices to kill the leucocytes of human blood or impress upon them important modifications; considering, moreover, that the immunity of the hare is closely associated with the immunity of its leucocytes, Dr. Maurel is led to the conclusion that it is probable that the leucocytes have a principal part in poisoning by that alkaloid.

Similar investigations relative to pilocarpine have shown that it takes ten centigrammes of that substance to instantly kill all the leucocytes in one hundred grammes of human blood. Five centigrammes will kill them in a few hours.

An interesting experiment gives light as to the known antagonism of two drugs. "If," said Dr. Maurel, "atropine and pilocarpine are mutually antidotal, and if the leucocytes play an important rôle in death by these two toxic agents, the combination of the latter with blood in the proportions of their toxicity ought to be inoffensive to the leucocytes." This was found to be actually the case.

In another series of experiments, he investigated the action of cocaine on the white globules, and he concludes "that death by cocaine is the consequence of the death of the leucocytes, or of modifications which the latter sustain under the influence of this agent. The quantity of cocaine which is immediately fatal to the leucocytes is one per cent. of the quantity of the blood, or about one gramme per kilogramme of the weight. Thirty times as much cocaine is required to kill an animal when this salt is taken by mouth as when it is injected into a vein.

In death by intravenous injections of toxic solutions, the death may be caused by the leucocytes suddenly killed, swept along the blood stream, and acting as emboli. These elements, in fact, after their death, take the form of rigid disks, the long diameter of which exceeds by one-third at least the calibre of certain capillaries.

In experiments made on the hare, it was found that solutions of ten centigrammes of cocaine-chloride to one hundred grammes of distilled water, that is, solutions seven to eight times less than such as are toxic to the leucocytes when injected into the cellular tissue are sufficient to produce in the corresponding region an anæsthesia which lasts at least fifteen minutes. It is probable, then, that in man anæsthesia may be produced by solutions much below those that are toxic to the leucocytes, and therefore dangerous.

Strong solutions, such as fifteen centigrammes to one hundred of water, should not be used hypodermically for fear of piercing a vein and throwing a part of the injection into the blood, while weaker solutions (three to ten centigrammes) are sufficiently safe.

Such experiments as the above possess the greatest interest both from a physiological and a therapeutical point of view, and we are glad to note that they are being continued. Too little is yet known as to the functions of these living elements of the blood both in health and in disease, while the more we learn of them, the more important their rôle in the living economy appears.

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MEDICAL NOTES.

Asiatic Cholera. — There seems to be no doubt that cholera is advancing toward the north and west, along the lines of travel. Cases are reported at Moscow and at St. Petersburg, though as yet the number is small. It is also reported in Poland; and in consequence of the exodus which is still taking place from that district, the health of Western Europe and America is becoming more in danger.

Cholera in Paris. — The epidemic of what has been called cholerine in Paris, appears to be about stationary, and has not materially increased in severity since the middle of July. In some districts it has subsided. There appears to have been some doubt as to the proper authorities to act in sanitary matters of this kind, but on the 12th of July, the Prefect of Police took the matter into his hands and issued a decree appointing a permanent committee of hygiene. The epidemic has attacked the suburbs worse than the city itself, and here also active measures have been taken to sterilize the water, and take other necessary precautions.

New Periodicals. — On the first of January a new monthly periodical under the title of *The Medical Reporter*, appeared in Calcutta. The number of English medical papers published in India is not large in proportion to the amount of medical work done there, and this new journal was started to supply a demand for another general medical periodical. On July first the first issue of *The American Therapist* appeared in New York. It is edited by Dr. John Aulde, and is to be a monthly record of modern therapeutics with practical suggestions relating to the clinical application of drugs. The *Archives Provinciales de Chirurgie*, established by a number of surgeons in different parts of France, appeared in July under the editorship of Dr. Marcel Baudouin. The first issue, of one hundred and sixteen pages, contains several interesting articles on different surgical subjects. *The National Popular Review* is the name of a new monthly "illustrated journal of preventive medicine and applied sociology for the profession and the people," published at San Diego, under the editorial charge of Dr. P. C. Remondino. The first number bears date of July.

Physicians' Testimony in New York State. — The New York Code of Civil Procedure contains the following concerning physicians' testimony: "A person duly authorized to practise physic or surgery shall not be allowed to disclose any information which he has acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity." In a life-insurance case recently decided by the Court of Appeals, the chief justice declared that there is nothing to prevent a doctor from testifying that a particular person was sick and was attended by the witness as a physician. The physician may testify as to the day when he was called upon to attend such a patient professionally, and how many times he attended, and whether his visits were daily or hourly. Therefore, it appears, that, although a doctor cannot be obliged to testify as to the nature of the person's illness, he may be compelled to disclose the fact that the person was ill and consulted him as a physician, and how long he continued to see the patient.

British Medical Association. — The sixtieth general meeting was held at Nottingham July 26th, 27th, 28th, and 29th. The President, Mr. Joseph White, F.R.C.S., (Edin.), delivered an address upon "Development of the Work of the British Association and of British Medicine and Surgery since the last Nottingham Meeting. The Address in Medicine was by James Cuming, M.D. William H. Hingston, M.D., took for the subject of the Address in Surgery, "Synthesis in Surgery."

BOSTON.

Mortality in Boston. — The number of deaths last week is 259, making the rate 28.6. The number of children who died under one year of age was 113; under five years 128; persons over sixty years of age 26. From cholera infantum there were sixty deaths.

Small-pox in Boston. — For the first time since June, 1890, a case of small-pox has been reported in Boston. The patient was a Russian girl. She was immediately sent to the Small-pox Hospital in Roxbury, the first case to be received there for two years. Prompt action has been taken to prevent any spread of the disease, and it is to be hoped that an equally long period may elapse before the next case appears. An immunity of two years is surely a remarkably good record for a city of the size of Boston.

Registration of Births in Boston. — The City Registrar has issued a circular, calling attention to the statute which went into effect May 26th, making it the duty of every physician to report to the Registrar's office "a correct list of all children born in this city in the month next preceding, at which he was present, stating the date and place of each birth, name of the child (if it has any), the sex and color of the child, the name, place of birth of the parents, and the occupation of the father." Blanks will be furnished on application. A fee of twenty-five cents will be given for each case in which the statute is complied with, and a fine of twenty dollars for each case in which it is not. The Registrar would like all lists from 1889, but cannot pay for and will not prosecute for cases before the first of this year. In conclusion, he requests any suggestions as to the best way to enforce the law.

NEW YORK.

A New Pasteur Institute. — Ground has now been broken for the new Pasteur Institute, which is to be erected at 97th Street and Central Park, West. The building is to be of brick, five stories in height, and fireproof. In addition to ample facilities for prevention inoculations against hydrophobia, there will also be a department for the treatment of nervous diseases.

A Fatal Mosquito Bite. — An interesting case is reported from Bellevue Hospital. On July 28th, a laboring man, sixty-nine years of age, was sent to Bellevue from the Harlem Hospital, suffering from gangrenous cellulitis of the cheek, which the patient stated resulted from the bite of a mosquito, received three or four days previously. Despite the most energetic treatment his condition grew steadily worse, and in a few days meningitis developed. Of this he died on August 4th, and while the fact has not yet been demonstrated, it is believed by the physicians in charge that the man's death was caused by anthrax, the bacillus of which was conveyed into his system by the mosquito's bite.

Miscellany.

A CASE OF INTESTINAL ANTISEPSIS IN TYPHOID FEVER.[1]

Dr. Joseph Leidy, Jr., records an interesting case of typhoid fever: there were three distincts attacks, and the last attack was followed by four relapses. A liquid diet was given, the water boiled, and after the first relapse the milk also was boiled. Intestinal symptoms were prominent from the outset.

Believing that an auto-inoculation took place, Dr. Leidy employed hydro-naphthol and turpentine in the last attack; and the convalescence was more rapid than from previous attacks.

The patient was in bed 145 days. Marked nervous symptoms were absent. A severe intestinal hæmorrhage took place in the third replase. There were no other serious complications.

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THE BUSINESS OF EXAMINING FOR INSURANCE COMPANIES.

The qualifications which the examiner for a life insurance company should possess, are discussed in an editorial in the *New York Medical Examiner* for May. He must be possessed of peculiar abilities, and in a large city where he is among competitors he must possess these in a high degree.

While some medical examiners have the unhappy faculty of driving business away, there are others whose very presence inspires confidence so that there is no desire to appeal from their decision, whatever it may be. Even the agents accept what they say as final, notwithstanding the known persistency of these gentlemen and their dislike to lose a commission so long as there is any chance of securing it. Their method of handling a case is such that it is almost a pleasure to undergo the examination.

Among the unsuccessful examiners there are some whose manner of proceeding with the applicant is offensive to a degree; they irritate him and cause him to shut himself up within himself so that it is very difficult to abstract more than a skeleton of a fact from him. In other words, these examiners fail to inspire by their confidential interest that confidence which leads the applicant to unburden himself to the examiner before he is awakened to a realization of the fact.

A successful examiner generally possesses the power of discerning certain attempts on the part of the applicant to obtain advantages not specified in the contract of insurance, and he frequently is able to circumvent any little game of this sort which the applicant may have conceived. In the same way that a legal turn of mind in the examiner is a valuable trait, so, too, the physician who possesses good business instincts and utilizes them to advantage, will succeed where his colleague who sticks closely to scientific lines will fail. He must not only be a good examiner, he must not only have all the knowledge and skill necessary to secure facts and draw proper conclusions, but he must have tact, business skill, and what is termed "The faculty of doing the right thing at the right time." The medical examiner for life insurance should be a good business man as well as a good doctor, and take a business view of the desirability of accepting an applicant, as well as a medical one.

THE TOCCI BROTHERS.

Dr. Robert P. Harris[1] describes the duplex monstrosity which was exhibited in the United States last winter, and which he had the opportunity of examining; although he was not allowed to make as thorough an examination as he would have wished. These twins were born in Piedmont, Italy, in 1877, and weighed together perhaps a little over seven pounds. There was one cord and one placenta.

These boys have two heads, four arms, a double thorax, a single abdomen, and only two legs. Their present weight is ninety-five pounds. Their arms having much more exercise than their legs are larger in proportion to their age. Their two inner arms cross each other and are generally carried on each other's shoulders. There are two converging spinal sulci extending down to two sacra. In health the twins compare well with normal children; one of them is a little stronger than the other, and also rather more intelligent. They are both right-handed; they have each two lungs, the outer ones being the larger, and they are forced to breath largely by their diaphragm. They have separate and distinct hearts, each located in the left chest cavity and are apparently normal; the hearts beats are not synchronous. They have two stomachs which are as independent functionally as if they occupied two different abdomens. One may be hungry and the other not; one twin may vomit without the other twin being at all uncomfortable. They evidently have two sets of intestines both large and small, but one anus, and probably a common rectum. They often defecate at different times, and one may have diarrhœa, while the other has not. They have two bladders and one urethra, but generally urinate at the same time. The penis, which is small, has a sensation common to both. There are two testicles, one felt by each boy.

The boys are quite differently affected by changes of temperature. They sleep upon the back or more correctly in a dorso-lateral position. A pin prick in the median line of union is felt by both brothers, the sensation is lost to one of them when passing to either side.

Their two legs are entirely independent and each belongs to, and is controlled by, the boy whose head is on the same side. Neither has the least feeling or power of motion in the other one's leg. One of these has a bad club-foot, which has up to this time prevented much use of the legs. The position of the other abdominal organs could only be guessed at, as permission could not be obtained to make further examination. The boys are fairly healthy and there is no reason why they should not live for a long time to come.

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CHLOROSIS.

In a report of the Scientific Grants Committee before the annual meeting of the British Medical Society, Dr. E. Lloyd Jones reports that his conclusions so far are, that chlorosis is always accompanied by attenuation of the blood; that this change becomes extremely marked in a large number of cases. In fact, this tendency distinguishes it from the other common forms of anæmia. It does not, as stated by some authors, occur in boys. The author finds that attenuation of the blood occurs normally in girls at the very ages when they are proved to develop chlorosis, and more than this the blood in the boy at this age does not show the slightest tendency to this change, but of a change in the opposite direction of a still more marked kind. These facts explain the complete immunity of boys from chlorosis, and the prevalence of the disease in girls between the ages of fourteen and twenty-two years. He concludes that the disease is an exaggeration of a physiological condition. The direct causes of this excessive attenuation of the blood which constitutes chlorosis are not easily ascertained; but during the time he has been collecting clinical evidence, he has become disposed to regard the most frequent cause as a want of balance between the blood in the body and the vascular capacity which this blood has to fill. He would cautiously suggest that this wateriness of the blood results when, either in the process of normal growth or by dilatation of some large vascular area, the vascular capacity becomes relatively too great for the supply of blood. Some cases appear to him to be probably due to reflex dilatation of vessels in the splanchnic area, particularly when acute chlorosis results from a chill or mental shock. These conclusions are not more than suggestions at present; still there is a certain amount of clinical evidence in their favor, and he proposes to devote another year to a continuation of this research.

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[1] University Medical Magazine, August, 1892.

[1] Medical and Surgical Reporter, June 4.

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THE CRUSADE AGAINST OPIUM IN INDIA.

The *Indian Medical Gazette*, in an editorial under this title, says that the terrible pictures which are drawn regarding the effects of opium in the East are not recognized by medical men in India; and they seem as far from the reality as are many a Hindoo's views of the injurious results following the use of alcohol. The crusade against opium is conducted by well meaning men who labor under the disadvantage of living in a part of the world distant from those countries whose inhabitants are accustomed in great numbers to use opium as a stimulant. The mistake lies in the lack of an intimate acquaintance with the habits of the people. It would be as unwise to form views on the injurious effects of opium on the Indian population, by an occasional bad consequence produced by the abuse of the drug in certain cases, as it would be to judge of the pernicious effects of tobacco on habitual smokers by dwelling on the results which were observed in a small boy who smokes a pipe for the first time. And it is as unwise to try to prevent the use of opium in India, as it would the use of tobacco in Europe. The opinion is expressed that the moderate use of opium in an Eastern country will have the same calmative and stimulating effects as the use of tobacco in the West; and that the excessive use of tobacco is almost as productive of mischief on the human constitution, as that caused by the abuse of opium. Moderate opium eating or smoking is on the whole a solace and mainstay to many who otherwise would be unfitted for the battle of life. The whole subject has been thoroughly discussed by the Calcutta Medical Society in which the view generally entertained was, that opium in moderation was not injurious to the human constitution. The majority were not on the side of those who would abolish it except for medicinal purposes. They believe that opium in moderation does no harm, and that it is beneficial to a large proportion of those people who live in malarial districts. The opinion is expressed that under the peculiar climatic conditions of the East, the constitution is medically less injuriously affected by opium than by either guja or alcohol.

Dr. Crombie after twenty years' experience in India, during the greater part of which, he had been in charge of Indian hospitals and an Indian asylum and jail, said that he could with difficulty call to mind more than one man whose bodily or mental health was obviously wrecked by opium. It appears that no crime or offence against public decency is known to be an after-effect of opium with the possible exception of petty pilfering. Neither does it tend to any crime of daring or violence, in which respect it differs much from alcohol.

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THERAPEUTIC NOTES.

Hypnal [1] (monochloral-antipyrin), the hypnotic compound obtained by dissolving about equal parts of chloral-hydrate and antipyrin in water, has continued in use since its introduction, with somewhat varied success. The general opinion now appears to accept it as chiefly hypnotic, although Dujardin-Beaumetz and Fränkel give it analgesic properties as well. The construction of the compound would of itself lead us to the conclusion that it might be a useful remedy, as chloral in ordinary doses has little effect on pain, while antipyrin rarely produces sleep in relieving pain.

Guaiacol [1] is the liquid compound obtained by the fractional distillation of beech-wood tar creosote, and contains from 60 to 90 per cent. of creosote. It was some years ago introduced as a substitute for creosote, and Sommerbrodt first used it in the treatment of phthisis. The literature of the subject is now pretty extensive, and tends to prove that it is decidedly beneficial in the early stages of the disease. In order to carry out the so-called intensive creosote treatment, it was necessary to get large quantities of guaiacol into the system, and thus the salt guaiacol-benzoate was introduced under the name benzoyl-guaiacol or benzosol. This compound admits of the administration of an amount of guaiacol which otherwise would be almost impossible owing to its caustic properties. The results with this have been varied, but on the whole they should invite further trial. Guaiacol salicylate also has been introduced as an intestinal disinfectant.

Phenacetine for Irritability of the Bladder. — Green reports [2] some cases of frequent micturition in the aged, in which immediate relief was obtained by the use of phenacetine in ten-grain dose at bedtime. The effect continued during the day, and the frequency both day and night was reduced to about normal. The quantity of urine was not diminished, and it does not appear that it was necessary to use phenacetine continuously to get its useful effects.

Creasote in Tuberculosis. — In a report on this subject, Sommerbrodt [3] says that the earlier creasote is used in the treatment of phthisis, the better are the results. He therefore uses it in so-called scrofulous children combined with other methods of treatment. He believes that small doses are useless, and for children seven years of age begins with drop doses three times a day gradually increased up to fifteen. It should be given after meals, and the administration extended over several months.

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[1] Squibb's Ephemeris.

[2] University Medical Magazine, June.

[3] Berlin Klin. Woch., June 27th.

METEOROLOGICAL RECORD,

For the week ending July 30, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...24	29.96	80	90	69	55	65	60	O.	S.W.	0	15	C.	O.	
M..25	29.93	84	94	73	75	63	69	S.W.	S.W.	19	7	O.	C.	.32
T..26	29.88	85	96	74	72	51	62	S.W.	W.	15	9	F.	C.	
W.27	29.87	73	93	72	52	42	47	N.W.	N.W.	10	5	F.	C.	
T..28	29.89	76	83	68	45	71	58	N.W.	N.E.	2	5	O.	O.	
F..29	29.94	72	78	66	81	78	79	N.W.	S.E.	5	9	O.	O.	.01
S..30	30.04	73	79	68	78	71	74	N.W.	E.	13	4	F.	C.	.15
☞	29.93	79	87	70	65	63	64			8	8			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 30, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,827,396	1434	773	41.65	6.65	34.37	2.59	1.19
Chicago	1,250,000	—	—	—	—	—	—	—
Philadelphia	1,092,168	786	424	32.64	6.24	27.36	3.00	.36
Brooklyn	955,333	686	418	43.80	5.10	35.25	1.95	.90
St. Louis	477,873	259	120	22.42	6.46	19.76	.76	1.14
Boston	469,645	352	179	36.96	5.88	33.88	1.40	.28
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	305,000	166	71	17.40	5.40	10.20	3.00	.60
Cleveland	281,353	202	130	43.12	4.90	32.45	1.47	3.92
Pittsburg	255,000	181	93	41.25	9.90	28.60	2.70	5.50
Milwaukee	234,440	—	—	—	—	—	—	—
Washington	230,360	266	100	36.86	5.32	31.16	.38	3.42
Nashville	87,754	43	13	20.97	6.99	11.65	—	2.33
Charleston	56,048	—	—	—	—	—	—	—
Portland	40,000	23	12	52.20	8.70	52.20	—	—
Worcester	92,313	58	36	53.32	6.88	49.88	1.72	1.72
Lowell	82,455	67	46	50.32	—	48.84	—	1.48
Fall River	82,128	90	66	56.10	2.22	53.90	1.11	—
Cambridge	74,644	47	35	52.75	2.13	40.86	2.13	—
Lynn	60,809	24	13	54.08	4.16	50.00	—	4.16
Springfield	47,052	33	19	12.12	3.03	—	—	6.06
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	44,947	47	30	52.75	2.13	46.86	—	2.13
Holyoke	40,099	—	—	—	—	—	—	—
Salem	31,495	15	6	33.33	—	33.33	—	—
Haverhill	30,065	14	11	64.26	7.14	64.26	—	—
Chelsea	29,479	20	12	55.00	15.00	50.00	—	—
Fitchburg	27,444	5	5	80.00	—	80.00	—	—
Gloucester	26,805	11	5	9.09	9.09	9.09	—	—
Malden	26,783	12	5	8.33	8.33	—	—	8.33
Newton	26,498	19	11	31.56	10.52	31.56	—	—
Brockton	26,464	13	—	42.84	21.42	42.84	—	—
Taunton	26,464	24	13	29.12	12.48	24.96	—	—
Waltham	20,942	5	3	60.00	20.00	60.00	—	—
Pittsfield	18,294	4	2	—	—	—	—	—
Quincy	17,930	6	5	66.66	—	66.66	—	—
Northampton	15,684	6	3	16.66	—	16.66	—	—
Everett	14,745	12	10	66.66	8.33	58.31	—	—
Newburyport	14,031	7	2	57.12	—	28.56	14.28	—
Amesbury	13,561	4	1	50.00	25.00	25.00	—	25.00

Deaths reported 4,965: under five years of age 2,684; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,806, consumption 305, acute lung diseases 212, diarrhœal diseases 1,503, diphtheria and croup 99, typhoid fever 67, whooping-cough 42, measles 35, scarlet fever 33, malarial fever 15, cerebro-spinal meningitis 5, erysipelas 4, puerperal fever 2, small-pox 1.

From whooping-cough New York 11, Brooklyn 10, Philadelphia 7, Pittsburgh 5, Washington 4, Cincinnati 3, Cambridge and Springfield 1 each. From measles New York 22, Brooklyn 7, Philadelphia 2, Boston, Cincinnati, Cleveland and Pittsburgh 1 each. From scarlet fever New York 8, Philadelphia and Brooklyn 5 each, Boston 4, Pittsburgh 3, St. Louis and Cincinnati 2 each, Fall River, Springfield, Taunton and Newburyport 1 each. From malarial fever New York 7, Brooklyn and Nashville 3 each, Philadelphia and Cleveland 1 each. From cerebro-spinal meningitis New York 2, Brooklyn, Washington and Everett 1 each. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending July 23d, the death-rate was 17.7. Deaths reported 3,467: acute diseases of the respiratory organs (London) 158, diarrhœa 282, measles 13, whooping-cough 81, diphtheria 53, scarlet fever 41, fever 27, small-pox (London 4, Halifax and Sheffield 1 each) 6.

The death-rates ranged from 11.1 in Cardiff to 21.5 in Bolton; Birmingham 16.8, Bradford 12.8, Croydon 16.2, Gateshead 15.3, Hull 19.9, Leeds 17.6, Leicester 15.1, Liverpool 16.5, London 19.0, Manchester 18.8, Newcastle-on-Tyne 19.0, Nottingham 13.1, Plymouth 13.4, Portsmouth 11.5, Salford 18.9, Sheffield 19.0, Swansea 13.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 31, 1892, TO AUGUST 5, 1892.

Leave of absence for fifteen days is granted **Captain Edwin P. Gardner**, assistant surgeon, U. S. A.

The leave of absence for seven days, granted **Major C. E. Munn**, surgeon, U. S. A., and extended thirteen days, is hereby further extended three days.

Major Alfred A. Woodhull, surgeon, granted leave of absence for two months, to take effect on or about August 1, 1893. By direction of the President, **Passed Assistant Surgeon Henry B. Fitts**, U. S. N., is assigned, temporarily, to the charge of the Army and Navy General Hospital, Hot Springs, Ark., to take effect during the absence therefrom of Surgeon Woodhull, the surgeon in charge.

RECENT DEATHS.

Antoine Ruppaner, M.D., of New York, died July 30, aged sixty-five years. He was born in Switzerland, and graduated from Harvard College in the class of 1855, and from the Medical School in 1857. He was a member of several American and European societies, and the author of several works on different medical subjects.

W. N. Pindell, M.D., of Newark, N. J., died August 3d, aged sixty-four years. During the war he was surgeon under General Lee, and was prominent in the capture of John Brown.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Eighth Annual Meeting of the American Climatological Association. 1891.

On Surgical Shock. By John H. Packard, A.M., M.D. Reprint. Philadelphia: Wm. J. Dornan. 1892.

Fourteenth Annual Report of the Connecticut State Board of Health, for the year ending November 30, 1891.

Pulmonary Atelectasis as a Cause of Anæmia. By Albert Abrams, M.D., San Francisco. Reprint. 1892.

The Sixth Annual Report of the Dōshina Mission Hospital and Training School for Nurses. Kioto, Japan. March, 1892.

A New Pronouncing Dictionary of Medicine. By John M. Keating, M.D., and Henry Hamilton. Philadelphia: W. B. Saunders. 1892.

The Medical and Dental Register-Directory and Intelligencer of Pennsylvania, New Jersey and Delaware. Philadelphia: George Kiel. 1892.

The Extra Pharmacopœia. By William Martindale, F.C.S. Medical References, etc., by W. Wynn Westcott, M.B., London. Seventh Edition. H. K. Lewis. 1892.

Asepsis and Antisepsis as Applied in the Lying-In Chamber. Pelvic Inflammation in Women: A Pathological Study. By William Warren Potter, M.D., Buffalo, New York. Reprints. 1891-92.

The Radical Cure of Inguinal Hernia: Bassini's Method Illustrated: With Remarks on Recurrent and Ventral Hernia. Lateral Curvature of the Spine and its Association with Hernia. By Samuel E. Milliken, M.D. Reprints. 1892.

Comparative Value of Mercury and the Iodides in Treatment of Syphilis. Blennorrhœa. Two Cases of Carcinoma of the Uterus. Some Effects of Blennorrhœa in Women. By James T. Jelks, M.D., Hot Springs, Ark. Reprints. 1890 and 1892.

The Diseases of the Stomach. By Dr. C. A. Ewald, Professor of Medicine at the University of Berlin; authorized translation from the Second German Edition with additions by Morris Manges, A.M., M.D., of New York. New York: D. Appleton & Co. 1892.

Original Articles.

THE IMPORTANCE OF CORRECTING OCULAR DEFECTS IN FUNCTIONAL NERVOUS DISORDERS.[1]

BY G. L. WALTON, M.D.,
Clinical Instructor Neurology, Harvard Medical School;

AND FREDERICK E. CHENEY, M.D.,
Instructor in Ophthalmoscopy, Harvard Medical School.

This communication is offered, not as an exhaustive treatise, nor an expression of ideas in any way original, but for the purpose of contributing our own personal observations on a subject already extensively presented, though not, perhaps, as yet universally appreciated.

The importance of eye-strain in headaches has been so thoroughly ventilated that its acceptance seems on the way to becoming general, in this country at least, though much misconception still exists even on this subject, the fact being especially overlooked, for example, that perfect vision may coexist with serious eye-strain, and that pain in the eyes may be quite wanting even in the most severe cases of cephalalgia.

The scepticism still aroused in some quarters when the subject of eye-strain is broached, is perhaps due largely to the extravagant claims of certain writers regarding this factor in the etiology of chorea, epilepsy, and allied states, and their optimistic views regarding relief by ocular treatment. Similarly the statement of one writer, that all migraine was due to eye-strain met, naturally, with either passing notice only, or with decided opposition. The views of progressive neurologists and oculists, as well as general practitioners are becoming now gradually less conservative regarding eye-strain in the causation of headaches, whatever views may still exist regarding the proportion of curable cases. Steps have also been taken to impress the fact upon the profession that other instances of disordered nervous functions, mental defects, and even that state of impaired general nutrition may arise from this same cause. Before taking up this part of the subject it will not be out of place to recapitulate the views (by no means new or original) recently expressed by the writers regarding headache.[2]

(1) Cephalalgia is the most common of all reflex results of eye-strain, whether from refractive errors or muscular insufficiences.

(2) The headache may occupy almost any locality, but is most commonly frontal or occipital, or occupying half the head (hemicrania).

(3) The headache does not necessarily appear during use of the eyes, but may come on irrespective of such use; either reaching a maximum and gradually passing away, or being more or less continuous with exacerbation, the exacerbations appearing either during use of the eyes or independent of such use.

(4) Perfect, even exceptional vision, may be possessed, such vision being at the expense of an eye-strain unnoticed by the patient.

(5) While conjunctivitis and blepheritis, pain in the eyes and difficulty in near work are often present, they are not necessarily so; in fact, the worst cases not infrequently appear in patients whose sight is so perfect, and whose eyes are so free from symptoms, as to render them extremely reluctant to consult an oculist.

(6) More than half the cases of functional headache, including migraine, are amenable to relief by the correction of ocular defects.

We will cite two recent instances only:

Case I. Mrs. H., aged thirty-six, the wife of a prominent physician, has suffered since childhood from severe and obstinate headaches, averaging, for the last few years, two or three a week, affecting principally the fronto-temporal region, more rarely the occipital region. They generally appear on waking, reach the maximum at noon, and disappear at night. They are sometimes unilateral. Nausea and vomiting are rare. The headaches are especially liable to occur after an evening's entertainment. For the past year she has never been a fortnight without a headache. There is no pain or other symptom referable to the eyes. The sight is very acute for distance, and the tests for astigmatism by "Green's lines" negative. There was a slight frown in using the eyes, which the patient stated was a family trait. It is superfluous to state that all the usual remedies had been tried. The ocular history and symptoms were so far wanting that it required considerable faith on the part of the neurologist to insist, in the face of the incredulity expressed by the patient, upon the importance of a thorough examination of the eyes. When examined, February 20, 1892, the condition was found to be as follows: V. O. D. $= \frac{17}{15}$ with $+75$ cyl. axis $90° = \frac{17}{12}$, V. O. S. $= \frac{17}{15}$ with $+75$ cyl. axis $90° = \frac{17}{12}$. No insufficiency of the ocular muscles, or other abnormal condition. On the following day, under homatropine, the astigmatism was found to be one dioptre either eye, and correcting glasses were prescribed for constant use. The patient reported, six weeks later, that she had been perfectly free from headaches, already a striking comparison to the frequency of two or three a week.

Case II. Will serve as an illustration of the fact that a small degree of astigmatism — probably not more than would be found in nineteen people out of twenty who were not subjected to headaches — is capable of producing, in an individual of a neurotic temperament, a very marked disturbance. The patient was a girl, ten years of age. She was first seen March 4, 1892. Referred by Dr. F. B. Harrington (to Dr. Cheney). She has always had headaches, and more or less pain in eyes. For last two months head has ached most of time, severe, and often accompanied by nausea and vomiting. The eyes have also ached more of late; she cannot read more than ten or fifteen minutes at a time, and has been obliged to give up school. Is very apt to be dizzy when she first gets up in the morning. An examination under homatropine gave the following result: V. O. D. with $+50 \smile +25$ cyl. axis $90° = \frac{17}{12}$, V. O. S. with $+50 \smile +25$ cyl. axis $90° = \frac{17}{12}$. No insufficiency, or other abnormal condition of eyes. Glasses were prescribed for constant use, $+25 \smile +25$ cyl. axis 90. She reported three weeks later; and the mother stated that she had been perfectly free from headaches since using glasses, with the exception of one day when she had been without them (they were broken, and taken for repairs), and had returned to school. On the day that she was without the glasses, she had a severe headache, with nausea and vomiting.

Further comment on these two cases is unnecessary, beyond the observation that they are far from rare.

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[1] Read before the Boston Society for Medical Improvement, April 25, 1892.

[2] "Ocular Headache," Cheney, Boston Medical and Surgical Journal, January 7, 1892. "Eye-Strain and Headache," Walton and Carter, Medical News, May 19, 1892.

and illustrate a not uncommon type in the practice of those members of the profession who are on the lookout for this factor in the etiology of cephalalgia.

Among the less common nervous disorders which have been discussed in connection with eye-strain are those evidenced by increased motor irritability, mental derangement, and disturbances of general nutrition. Most prominent among which may be mentioned facial spasm, chorea, epilepsy, melancholia, dyspepsia and allied conditions. It may be mentioned, incidentally, that while dwelt upon in various monographs, in the text-books, with the exception of Ranny, little if anything will be found under any of these headings concerning ocular troubles in the etiology, however complete and exhaustive the enumeration may be in other respects. In fact, all conceivable possibilities swell the list of etiological factors mentioned in text-books on nervous diseases, more than in any other branch of medicine perhaps, partly on account of their insidious onset, and partly through our incomplete knowledge of their nature.

Whatever changes may be made in modern neurology through recent investigations, it is rare that a factor which has once figured in etiology is dropped from the list. On looking through the most advanced text-books, for example, we find exposure to cold as a cause of most obscure, as well as of many of the common nervous disturbances, whether peripheral, spinal, or cerebral; and traumatism, in the form even of slight blows or falls, figures constantly, and often with little reason. Sexual excess and masturbation are only of late years beginning to disappear as almost universal causes of neurological diseases. A single reported observation of sequence in disease seems sufficient to give rise to an accredited factor in etiology. It seems, therefore, remarkable that eye-strain should have been so systematically ignored.

Taking first the subject of facial spasm. This disorder is justly described as usually starting in or about the eyelids, the upper lid being most frequently first attacked; the spasm either resting there or spreading to contiguous muscles. It would seem that the location alone should call special attention to the eye. The reasons mentioned in the text-books, however, are the classical exposure to cold, otitis, caries of the teeth, intestinal irritation (worms), uterine irritation, emotional disurbances, and finally irritations of the *eyeball* or *conjunctiva*. Gowers states that the trouble comes on gradually between thirty and sixty, rarely between twenty and thirty or after sixty. Its period of activity being somewhat similar to that of migraine, except that its onset and departure are decidedly later. In point of fact, it is probable that eye-strain is a cause of these symptoms, more especially the palpebral form, so far preponderates as to deserve the first mention in causation and to point to the first indication in treatment. A single instance will illustrate this point. A sufferer from astigmatism, aged thirty-eight, has complained of migraine since childhood, but this symptom has been kept under control since he put on glasses at the age of twenty-one. An occasional mild attack only occurs on the right side, the side upon which the refraction has not been perfectly corrected. Of late years he has been bothered frequently by nictatory spasm of the right eyelid, so severe at times as to materially interfere with the use of the eyes in reading or writing. On one occasion, having been free from the spasm for twenty-four hours, it appeared immediately upon an attempt to look fixedly at the "Green's lines," and continued with considerable frequency for several hours. He has noticed himself that the symptom came on during the use of the eye only. It has never appeared in the left eyelid. Such cases appear so much more frequently in eye clinics than elsewhere, that the oculists have learned to associate the symptom with ocular defects more readily, perhaps, than neurologists and other practitioners. We have both seen a number of cases in which the side of spasm coincided with the refractive error, and in which glasses afforded the only improvement worthy of note. Some of these cases are, however, most intractable: the spasm continuing perhaps with but slightly decreased intensity for months or years, in spite of the fact that the ocular defect has been fully corrected. In such cases the trouble usually is of long duration, and a much more satisfactory result is to be expected when the correction is made before it has become well established. Intractable as this symptom often is, even to appropriate treatment, it is still more so to other efforts; and it is fairly regarded as among the most obstinate of nervous symptoms. Even section or stretching of the facial nerve causes cessation only so long as paralysis lasts, for which reason this procedure has been practically discarded. The spontaneous disappearance of facial spasm at the age of sixty, or thereabout is probable due to the loss of accommodative power, and resulting eye-strain. The symptom disappearing gradually, though often persisting for some time after the cessation of the exciting cause. It is, of course, only to the so-called idiopathic forms of facial spasm that we refer, as undoubtedly certain cases depend on organic foci of irritation in the central nervous system. Certain of the idiopathic cases arise also from reflex irritation in other localities, as the ear or the teeth. Such cases we believe to be, however, far less in number than those due to eye strain. Somewhat allied, perhaps, to this symptom is the so-called habit chorea of children. The dissimilarity lies in the nature of the movements, and in the degree to which they are under the patient's control. In this affection the eyes are sometimes squinted, sometimes widely opened; the brows are corrugated or elevated; the mouth and face twisted, and various grimaces produced apparently by an almost incontrollable impulse. This affection is far more common in childhood than in adult life, the desire being perhaps often present in adult life, but the inhibitory power more developed.

The following case, which may be classed in this category, has been previously reported by one of the writers[8] in connection with other cases of chorea (Case IX) subjected to ocular treatment, and is again mentioned for the reason that the improvement was very decided, and when heard from, two years after, there had been, with the exception of occasional slight twitchings of the lids, no return of the choreic symptoms. The patient was a boy of twelve years of age, and was first seen September 23, 1889. There was a history of one previons attack of about two years' duration, when the muscles of eye, eyelids and face were principally affected. This attack, which was severe began about seven months before and involved muscles around eyes, of face, arms and legs. There was an esophoria of six degrees, and its correction was followed by a rapid improvement; the twitchings having

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[3] Cheney: Boston Medical and Surgical Journal, February 25, 1890.

almost entirely ceased two weeks after the last operation.

It is hard to decide how important an etiological factor eye-strain is in true chorea; but it is very doubtful if it deserves the prominence given it by Stevens, whose work in this direction is well known. The marked improvement and rapid recovery following the correction of ocular defects in a number of these cases reported in the paper previously referred to, would certainly indicate the advisibility of correcting such defects when they exist. The fact that patients not infrequently recover from this disease while undergoing no treatment whatever, is to be taken into consideration in forming conclusions as to the value of ocular treatment, as the following case, previously reported (Case VII), will serve to illustrate.

The patient, a girl of eleven years of age, was first seen September 10, 1889. The chorea was of about eight weeks' duration and of considerable severity. There was a history of three previous attacks, the time of occurrence and duration unknown. The twitchings were confined entirely to the right side, and did not involve muscles around eyes or of face. The eyes never ached, and the vision was good, Headaches were frequent and severe. The correction of a moderate amount of hypermetropia was without benefit, and the twitching gradually became more severe. There was an esophoria of about four degrees. The improvement following the correction of this condition by two partial tenotomies was most satisfactory, the choreic movements having almost entirely ceased within a few days after the last operation. The patient returned about two years later, with a fifth attack of about three weeks' duration. The eyes were examined a number of times, but no insufficiency could be detected. Glasses correcting the hypermetropia were again prescribed, but did not prove of the least benefit, and the choreic symptoms gradually increased in severity. It is reasonable to presume therefore that eye-strain was not as important a factor in this case, as the previous rapid recovery may have led us to believe.

Another case (XI), seen about one year after it was reported, is of interest for the reason that there was no noticeable change in the patient's condition after the correction of a refractive error, while the subsequent history would indicate that it had been of some value. The patient was a boy eight years of age; first seen October 11, 1889. There was a history of one previous attack five years before. When seen, this second attack was of about three weeks' duration. It was of moderate severity, and involved both upper and lower extremities. There were no twitchings of the muscles of eyes or face, no pain in eyes, but occasional headaches. He was found to have a hypermetropia of 2.25° in either eye, and was ordered correcting glasses for constant use. At the end of three weeks, there being no improvement in the chorea, he was referred back to the nervous department for general treatment; advice being given, however, to continue using the glasses. When again seen, August 6, 1890, he reported that he had worn the glasses constantly, until about a month before, when he had broken them. He had had slight twitchings for the last two or three weeks. These ceased in a short time after he had obtained new glasses; and so far as known there has been no return of the trouble.

The status of epilepsy in this connection is probably quite analogous to that of chorea. That genuine epilepsy can be produced by eye-strain is, to say the least, extremely doubtful. On the other hand, there is reason to suppose that eye-strain may act here as a source of irritation in precipitating the trouble in a nervous system already predisposed, either by inheritance or otherwise, to this affection; and that the relief of this condition, may, in some cases, result in a cessation of the attack for an indefinite period. It seems reasonable to expect, however, that the disease will sooner or later manifest itself with the development of some new source of irritation, physical or mental, and it is therefore unwise to regard such cases as cured or cease to be on the lookout for other possible exciting causes, even should the patient be free from the attacks for years.

The following case has been under the care of Dr. Walton for a number of years, and is certainly of interest in this connection. The patient is a young man, eighteen years of age, and had typical epileptic attacks. No family history; no trauma or other definite cause. First attack in January, 1887. Attacks followed with varying frequency; five in 1887; six in 1888; nine during January, February, March and April of 1889. During this time he had been upon varying doses of the bromides and following general directions as to diet, as directed by the various specialists who had been consulted. Soon after he came under Dr. Walton's care, in the spring of 1889, his refractive error was corrected by Dr. Bradford, after which a period of sixteen months elapsed without an attack; the bromide being continued at a moderate dose, averaging about twenty grains, gradually diminishing towards the end of that time. At the end of this period the attacks recurred, and have persisted with varying frequency up to the present time, though the dose of bromide has been increased as far as seemed advisable. The family are so far convinced that ocular defect has a bearing on the case, that they have now placed him, on their own responsibility, under the care of Dr. Stevens, who has operated a number of times upon the muscles, in what manner or with what result we do not as yet know.

Another case under the care of Dr. Cheney may also be mentioned. Mrs. C. J., forty-six years of age, a native of New Hampshire, was seen for the first time October 20, 1889. The history obtained is as follows: The first attack was some time in February of the preceding year. They had increased in frequency, and for a number of months past she has averaged one a month. The eyes never ache. She can see perfectly well for distance and near; and has not felt the need of glasses. The head never aches, but sometimes feels tired. She is very sceptical as regards the value of eye-treatment in a disease of this nature, and only submits to it after considerable urging from her physician. The vision of the right eye was normal, while that of the left was a little less than normal. When requested to read the same letters a second time, she was unable to do so, the sight becoming blurred after she had looked at them for a minute. She was found to have astigmatism, the correction in the right eye being + .50 cyl. axis 15° and the left + 1 cyl. axis 165°. There was a slight esophoria, $\frac{1}{2}$°. The adduction was 15°, the abduction 7°, and a prism of 4° could be overcome with its base up or down. Sn. 0.5 could be read at 22 cm., but quickly blurred. Glasses correcting the astigmatism were ordered for distance, and the same combined with + 1 sph., for near. She was again seen

November 26, 1889. She had had one attack soon after getting glasses, but not so severe as usual. Says she did not realize how much her head had troubled her until she experienced relief from the glasses. She was advised to have a second examination under homatropine, and it was made December 2d, with the following result: V. O. D. with + 1.75 ⊃ + 50 cyl. axis 15° = 1, V. O. S. with + 1.75 ⊃ + 1 cyl. axis 165° = 1. When examined two days later, she would accept but + .75 sph.; and this, combined with the cylinders, was ordered for distance. January 29, 1890, she reported that she had not had an attack for nearly three months. The near glasses were now ordered for distance, and + 1.50 sph., with cylinders, for near. Early in the spring she went to Europe, and has not yet returned. In June, 1890, she had an attack, the first in seven months. The eyes and head began to trouble her again at about this time, and she consulted a German oculist, who prescribed the following glasses: for the right eye, + 50 sph., and for the left, + 50 cyl. axis 90°. A mydriatic was not used. She has had nervous prostration for some time past. Whether or no there have been other epileptic attacks, we are unable to learn. The glasses last prescribed left so much of the refractive error uncorrected that, if eye-strain was an important factor in the case, a relief of the symptom from their use could hardly be expected.

The question of the relief of mental symptoms by the correction of ocular defects is one involving too many factors, perhaps, to be decided upon the limited experience at hand. While the subject of headaches has been under consideration for a long time, the influence of continued eye-strain upon the mental processes has been drawn to our attention only within comparatively recent years. From an *a priori* point of view, however, it would seem reasonable to expect that the higher cerebral processes, depending, as they do, upon an infinite number of factors, and liable to impairment by a wide range of detrimental influences, including both external surroundings and subjective states, should be affected unfavorably by a drain upon the nervous system, which is often continuous during the waking hours. The fact is certainly well recognized that all continuous strains, whether from worry, business cares, prolonged application, or physical exhaustion, exercise a deleterious influence upon the emotional, if not upon the intellectual character of the individual. If, therefore, it is an established fact that all such injurious elements should be removed from the lives of sufferers from mental disturbances, the factor under consideration can hardly be neglected. It would be, on the other hand, too sanguine to expect prompt improvement in every case from the removal of this one source of irritation. A sufficient number of cases have been observed to justify the simple procedure of correcting ocular defects in this class of patients, however, and, in fact, in certain cases the improvement has been shown so speedy and decided as almost to warrant the belief that the eye-strain was the important factor in causation. One case, an inmate of the McLean Asylum, is of especial interest; and we are indebted to Dr. J. T. Tuttle for his kindness in sending us the following history:

Mrs. S. M. B., admitted to the asylum April 9, 1886, then thirty-three years of age. No hereditary insanity. Well before marriage and for a number of years after. From overwork, care and anxiety, had been growing more and more neurasthenic for five years, with increasing loss of self-control, hysterical attacks, and impulses to injure others, especially her child and husband. Whatever of melancholia there was in her case was due to her appreciation of her condition. Up to December, 1889, there was a slow but gradual loss in bodily condition and in self-control. The history is full of accounts of hysterical attacks (sometimes convulsions), when she would be noisy, scream, attack the nurse, for whom she ordinarily had a great regard, etc. During the year previous to December, 1889, she was too much exhausted to make great disturbances, as, for the most part of the time, she was in bed, getting up only often enough to have it made. Weight had fallen off from 130 lbs. to 98 lbs. At times she would be very discouraged and talk of suicide. Had what she called "sinking spells," when she was apparently (but not really) unconscious. She had all sorts of abnormal sensations. "Dreadful feelings," top of head, pressure, etc. This pressure on the vertex was quite sure to precede a hysterical attack. She had always been near-sighted but never had worn glasses; "eyesight will leave temporarily and feels as if in trance spells." Complained also of "weakness of vision." Objects sometimes appeared yellow when seen with right eye; also "clump of sparks" appeared in it. Later, saw green and white spots on the ceiling. Sometimes a red or black spot on ceiling had a halo about it. About January, 1890, after having had the long rest (for a year a pretty complete one) she began to gain in weight and slightly in strength. Weight ran up to 170½ lbs. by February 1, 1891; but all through the year she was in bed, and had "sinking spells" frequently; headaches and abnormal sensations that neurasthenics have. During the summer of 1890 she was on a cot on the veranda for an hour or two for a few days, and then would not go out for a week. She was very easily exhausted; could not have people talk to her; could not read; could not see distant objects clearly. Had no way of getting new ideas and was greatly discouraged and depressed, so that she did not gain strength along with the fat. Was in this condition when seen by Dr. Cheney, February 3, 1891. Again seen by Dr. Cheney, March 12th. Distance glasses were obtained a few days later. They gave her great comfort and enlarged her horizon. She could see objects and people clearly, and it did not tire her to use her eyes as before. The result was, that, instead of lying in bed most of the time with her eyes closed, she began to sit up more and go out in the ward. As soon as warmer weather came, she was on the veranda most of the day, in pleasant weather. The glasses for reading were obtained a short time after the others, and during the summer she read the papers and books. All this was curative, as it gave her new ideas and took her mind off herself. She improved so much that she left the asylum, October 14, 1891, in a very comfortable condition, not well, but able to live outside a hospital. In conclusion, Dr. Tuttle expresses the opinion — and the same view is, we think, held by Dr. Cowles — that the patient would have been in the asylum to-day had it not been for the glasses. The ocular condition was, briefly, as follows: There was a myopia of about seven dioptres in either eye; and, when this was corrected, the patient's distant vision was nearly up to the normal. The eye seemed to be perfectly straight, and to move freely in all directions but, after looking steadily at an object for a short time the right eye would converge, and she would see double. On questioning, it was found that this double vision occurred quite often. A weak prism, 2°, base in, gave continuous diplopia. Glasses correcting the myopia were prescribed for distance, combined with a 3° prism, base out, before either eye; and the same degree prism, with weaker myopic glasses, were ordered for reading and other near work. The opinion expressed by Dr. Tuttle, that ability to see objects clearly, use the eyes in reading, etc., was curative, in that it gave her new ideas, and took her mind off herself, is undoubtedly a correct one; but, back of this, the primary and important factor was, it seems to us, the relief given the weakened external rectii muscles by prisms. When it is remembered that the presence of so marked an insufficiency means a constant tendency to see double, and that single vision is only maintained with the greatest effort, it is not difficult to believe that such an exhaustive strain, continuing day after day, probably for a number of years, is capable of producing in a person of neurotic temperament, the most serious mental disturbances.

In another case, one of melancholia, while we would not venture to assume that an ocular defect was the main cause, or that its treatment deserved sole credit for the improvement (which might in fact, perhaps, have appeared under no treatment whatever), we feel confident that the correction of the refractive error played a certain part. The patient was a business man, twenty-eight years of age. Has not been himself for a number of years, since an attack of "catarrh of the stomach," considered due to smoking. He was, however, fairly well a year and a half ago, when he was still using tobacco freely. This he discontinued a year ago, on reappearance of symptoms; but took it up shortly after improving. At about this time the trouble took the form of a restless melancholia. He was unable to sleep, and it was with difficulty that he continued his work. He was so seriously depressed at the time he came under observation as to be incapacitated for work; unable to sleep or to take interest in society, which he avoided. His family were considerably alarmed, and his business associates doubtful if he would be able to go on. There were no symptoms referable to the eyes, except at times a slight blur. There were no definite signs of neuritis, no tenderness, though he complained at times of an abdominal lameness and backache, together with a sensitiveness to heat and cold. He complained of frontal headache. He improved somewhat under tonic treatment and abstinence from tobacco. An examination of the eyes was made November 29, 1891, under homatropine, when he was found to have a quarter of a dioptre of hypermetropic astigmatism axis zero in either eye. and glasses correcting this trouble were ordered for constant use. From this time onward the improvement was rapid and steady; and after a short trip, he was able to return to business with his old ambition and efficiency. He reports well five months later. Still at work, and no recurrence of headache or other symptoms.

There is one more point that we wish to allude to briefly, and that is, the very marked improvement in a patient's general physical and mental condition often following the correction of some ocular defect. Relief from eye-strain — as would relief from any other abnormal condition, acting as a constant irritant — in certain individuals, causes them to become less nervous and irritable. They sleep better, the appetite is improved; and, as a result, they gain in strength and flesh, and feel better in every way. The case of a child, a girl nine years of age, who was first seen February 7, 1891, may be mentioned in this connection, the history being briefly as follows: She has been near-sighted for three or four months, and the eyes have ached considerably. The head never aches. She has always been extremely nervous, but has never had any serious nervous trouble. Of late, has very fickle appetite; does not sleep well, and worries a good deal about her studies. She is ambitious to rank high in her school work, and studies more out of school hours than the average child of her age. Upon examination, she was found to be rather poorly nourished, pale and sallow, and gave every indication of being extremely neurotic in temperament. The eyes were slightly injected and watery. There was considerable twitching of the lids, and when she looked intently at anything they were partially closed. The vision was four-tenths of the normal in either eye, and was not improved with glasses. Sn. 0.5 could not be read beyond 20 cm. There was no change in the fundus or transparent media, and it seemed probable that the condition was spasm of the accommodation caused by some refractive error. Homatropine was prescribed, and a second examination made two days later with the following result: V. O. D. with + 25 cyl. axis 0° = 1, V. O. S. with + 25 cyl. axis 0° = 1. Glasses correcting the astigmatism were prescribed for constant use. When she returned, a month later, the improvement in her condition was very decided. There was no twitching of the lids; the eyes were kept well opened; and she had been perfectly free from pain. She was much less nervous; slept well; the appetite had improved; her color was better; and she had gained a number of pounds in weight. She was again seen six months later, when her general condition was found to be still further improved.

In conclusion, it would seem from our experience, coupled with that of previous observers, that the examination of no case of functional nervous disorder should be considered complete until we have assured ourselves of the ocular condition, whether defective vision is present or not, and have corrected refractive errors, if present, even though small in amount. This step should certainly not be neglected in intractible cases. With regard to specific forms; headache offers the most fertile field for practical results of treatment. Facial spasm (except early in its onset), epilepsy and chorea offer less hope of definite benefit, though indications point to the removal of ocular defects as being the most common cause in the former, and one of the various irritating factors in the latter, which exercises a deleterious effect upon a nervous system already predisposed. In cases of mental disorders without organic basis, of general nervous weakness and irritability (neurasthenia) and obscure cases of defective nutrition, it can never be out of place to correct exciting refractive or muscular defects, and results may follow which few would venture to predict.

Professor Virchow has been elected Rector of the University of Berlin for 1892-93. The long delay in according to him this honor has been a matter of surprise abroad, but is understood to be in some way connected with his Radical political opinions.

RECUPERATIVE POWER IN ADVANCED AGE.[1]

BY J. B. AYER, M.D.

THE influenza epidemic has of late directed our urgent attention to the care of our aged patients.

Unquestionably, knowledge of senile diseases requires some special study and experience. This is shown by the fact that we are too easily satisfied with the simple classification "old age," in rendering the cause of death of elderly patients.

In spite of many valuable works upon diseases of the old, notably Charcot's "Lecture upon Senile Disease," Fothergill's "Diseases of Sedentary and Advanced Life," Professor Humphrey's "Lectures and Statistics on Old Age," and Balfour's recent lectures upon the "Senile Heart," I feel that no subject of equal importance to the practitioner of medicine has been less discussed.

When does *old age* begin?

Allchin finds all the symptoms of senility in some individuals under the age of twenty, when there is a failure of trophic influence due to exhausting illness.

On the other hand, I have in mind a gentleman of eighty-one who has lived a life of the greatest usefulness to his fellow-men, whose mental faculties seem unimpaired in spite of physiological tissue atrophy. In travelling and lecturing, he is still active and enthusiastic, and is practically younger than the majority of men at forty.

In the report of our Board of Health for 1891, deaths are credited to old age as follows:

	Males.	*Females.*
40 to 50 years	1	0
50 to 60 "	0	0
60 to 70 "	8	10
70 to 80 "	34	61
80 to 90 "	54	78
90 to 100 "	15	28
100 "	0	1
	112	178

In New York City the causes of death are stated:

	Males.	*Females.*
Under 45 years	1	2
45 to 55 "	7	5
55 to 65 "	13	23
65 to 75 "	42	83
75 to 85 "	92	153
85 "	38	112
	193	378

In the mortality reports of New York City, the period between twenty-five and forty-five is classed under the head of maturity; forty-five to sixty-five, decline; and sixty-five, old age.

If we take either sixty-five or seventy years as our standard of old age, it will be seen that in both cities there are a large number of cases of premature old age reported.

RECUPERATIVE POWER OF THE AGED UNDERESTIMATED.

Professor Humphrey says: "The rallying power in old patients is underrated. While they have difficulty in withstanding the tidal flow of senile disease, we do not credit them with sufficient recuperative power during the ebb."

"The paradox that the failure and suspension of nutrition, which mean sinking and death should be near neighbors to repair and recovery," he hints "may be partly explainable by the lowered irritability due to lessened nerve susceptibility of the senile frame, which gives it much immunity from disease."

A recent case of a patient seventy years old in the Channing Home, in the last stages of consumption, and also mildly maniacal for years, comes to mind as a good illustration. Last winter a large carbuncle appeared upon her shoulder. With all the care we could give her it was impossible to keep on the dressings, as she had hallucinations of hearing which directed her to attend to the treatment of the case herself. In spite of constant irritation, however, the arm healed in a moderate amount of time.

Surgery is full of remarkably successful results under equally trying circumstances.

INFLUENZA MORTALITY AMONG THE AGED.

The mortality records of the Boston Health Department (and here I wish to thank the officials for their kindness in furnishing me with many more facts than I can utilize in this short paper) show marked epidemic influence upon elderly people during the last few months. Between December 12, 1891 and February 29, 1892, out of 72 uncomplicated fatal cases of influenza, 33 had reached the age of seventy; out of 133 complicated cases, 47 were seventy years of age; in all 80 out of 205, nearly 40 per cent.

In New York City the mortality in 1891 was very large among elderly people, as may be seen by the following table kindly furnished me by Dr. Roger Tracy:

OVER 65 YEARS.

	Males.	*Females.*
1888	1,760	2,056
1889	1,742	1,998
1890	1,879	2,172
1891	2,072	2,549

As influenza seeks out the weakest part of the system for its attack, in the aged as well as in the young, it will be interesting to compare recent statistics of the causes of death.

DEATHS IN BOSTON. PATIENTS OVER 70 YEARS.

Disease.	1889.	1890.	1891 to Apr., 1892.
Heart disease	167	160	221
Apoplexy and meningitis	121	112	158
Pneumonia	86	121	291
Cancer	59	57	63
Bronchitis	56	76	162
Phthisis	28	27	48
Bright's and nephritis	33	47	63
Diarrhœa and dysentery	30	18	39

DEATHS IN NEW YORK CITY. PATIENTS OVER 65 YEARS.

Disease.	1889.	1890.
Apoplexy, including meningitis, encephalitis, hemiplegia, softening of brain, brain-paralysis	450	461
Bright's disease and albuminuria	448	479
Heart disease	406	399
Pneumonia	346	458
Phthisis	222	209
Bronchitis, emphysema and asthma	190	393
Cancer	167	205
Diarrhœal diseases	167	102

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[1] Read before the Boston Society for Medical Improvement, April 25, 1892.

These tables show that pneumonia has of late outstripped its competitors, heart disease and apoplexy, in Boston, and has gained rapidly upon apoplexy and Bright's disease, and gone ahead of heart disease, the three prominent causes of death among elderly people in New York; and that bronchitis has assumed great importance in both cities.

UNEXPECTED RECOVERIES FROM INFLUENZA.

In looking over my notes of elderly people during the last twenty-eight months, I have been surprised less by the increase of deaths than by the many unexpected recoveries. This fact has made such a strong impression as to be the cause of writing this paper.

An illustrative case occurred last January. A gentleman of eighty, after ten days' illness from influenza-bronchitis, was apparently entering a comatose condition, with threatening heart failure. The breathing was favorably influenced by oxygen; but during three days I gave an unfavorable prognosis, while he was verging upon the comatose state. Unexpectedly, but slowly and steadily, he rallied, and in the course of six weeks had recovered from the pulmonary trouble, and had nearly regained his strength.

Another case: In April, 1891, a lady, sixty-three years of age, with double asthenic pneumonia of influenzal origin, with delirium and subsultus tendinum, warranted an unfavorable prognosis during a whole week of the illness, but surprised me, nevertheless, by making an excellent recovery in the course of a few weeks, and is to-day probably as well as if she had not been through the sickness.

A third patient, a lady of sixty-four, I attended for influenza-pneumonia in May, 1890, added to chronic pulmonary tuberculosis. For several weeks, the prognosis was absolutely unfavorable. To my surprise, she began to improve, although bacilli were found in the expectoration; and last summer, she was out-of-doors. There was an unimportant relapse of influenza last January, from which she made quick recovery. Although examination of the chest shows now extensive consolidation, she is in far better condition in flesh than two years ago, and is able to be out-of-doors.

A fourth patient, Mrs. C., eighty-one years of age, has twice been seriously ill from influenza, — in March, 1891, and January, 1892, — with severe respiratory, gastric and nervous symptoms, threatening pneumonia, heart failure and persistent gastric irritability. But, on both occasions, she sufficiently rallied in two weeks to be out of danger, and in a couple of months, to seem improved from the illness through which she had passed.

A fifth case, I will briefly mention, of influenzal-broncho-pneumonia, where there was great dyspnœa and lividity. These symptoms were relieved by oxygen gas. On the ninth day, the fever declined, and the chest symptoms became less marked. For several days it did not seem that she could summon sufficient strength to rally; but gradually she began to gain a little, and in two months made a perfect recovery.

These cases are types connected, I feel, with the experience of most physicians during the epidemic. Last winter, particularly, was the recuperative power in elderly people most severely tested, and proven to exist. I think I was warranted in the conclusion that no accurate prognosis regarding the outcome of the sickness of elderly people could be made. Prognosis was uncertain, like everything else connected with influenza.

MARKED RESISTANCE TO DISEASE SHOWN IN CASES WHICH ULTIMATELY PROVED FATAL.

Good evidence that elderly people have great recuperative powers, has also been shown by their prolonged resistance in fatal cases.

I can mention the case of Mrs. M., colored, eighty-one years of age, previously well, who on returning from church March 27, 1891, was attacked by asthenic pneumonia of the left side. On April 6th quiet delirium was noted during tardy and incomplete resolution. The head was thrown slightly backward; there was great pain and stiffness of the neck, especially when the head was turned to the left. In addition to these cerebro-spinal symptoms, she had delusions against taking food, and would push us away, if we tried to feed her. She would draw the clothes over her head, to prevent us from giving her food. She made such opposition to nutriment enemata, that her daughter objected to their use. For days in succession, she took no nourishment. For the week from April 27th to May 4th, the total amount noted was two ounces of liquid nourishment and one ounce of wine. She wasted away rapidly; as during nine weeks, the largest amount of nourishment taken in any one day was three ounces. I often thought she was in a dying condition, but she would unexpectedly rally. Resolution ceased in the lung, one-quarter part remaining solidified. She became hemiplegic three days before death. Drs. Jelly and Sears will recall her persistent refusal to take food, and how mistaken we were in foretelling the date of her death.

A similar experience with Mr. K., seventy-seven years of age, seems worthy of record. His previous history is unknown. Early in January of the present year, I found him suffering from influenza, cardiac irritability and indigestion being the principal symptoms. An examination of the urine soon showed nephritis, one-quarter to one-half per cent. of albumin, and casts of all kinds, and that the urea was reduced to half the normal amount. The uræmic symptoms, with threatening cardiac failure, were so marked that on several occasions, death seemed imminent; but the patient unexpectedly rallied. A fortnight before he died, the disappearance of pulse indicated, to my mind, impending death, and I hastily notified his relatives, who had come from a distance, that he could not live an hour. Dr. Townsend, who saw him frequently, was equally convinced that no prognosis as to time of death could possibly be made in a case like this.

REVIEW.

It has struck me as a remarkable fact that mental and nervous symptoms, irritability, hypochondria, and apprehensive fears, if of influenzal origin, have in a great portion of our aged patients cleared up remarkably. Chronic cases of mental disorder, chronic heart trouble and pulmonary trouble have not been aggravated permanently in so large a proportion of cases as I should have expected. I have been surprised at the number of elderly patients with irregular and interrupted cardiac action, due to influenza, persistent "off and on" for a long time, the symptom proving to be one of little importance.

After looking over my notes, I became convinced that elderly people had done a great deal better in the late ordeal than I had supposed, when they had not succumbed at the onset, or soon after, to an acute exacerbation of the attack. Most of them (perhaps 90 per cent.) have slowly and interruptedly "worried" out of it, and at the end of two or three months been restored to their usual health. A small percentage of my elderly patients have been left in a state of chronic debility — on a much lower plane of health, but perhaps an equal number have been permanently improved by the long rest enjoined during convalescence and for several weeks after recovery.

TREATMENT.

We can agree with Allchin: "We are encouraged to do all we can for the aged by finding that not a few of those who survive the initiatory stages of illness hold on through the attack, even though it be severe, and make their way to complete, quick and surprising recovery."

The effect of good nursing, strict care regarding the quantity and character of food, equable temperature, an easy mind, and agreeable but quiet surroundings, upon our elderly patients often seems miraculous.

On the other hand, when elderly people do not have a strong desire to get well, they are seriously handicapped in the struggle with such an adversary as Influenza.

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ELECTRICITY IN THE TREATMENT OF GASTRALGIA AND ATONIC DYSPEPSIA.

BY A. D. ROCKWELL, A.M., M.D., NEW YORK.

MUCH difference of opinion exists concerning the cause and character of the distressing symptoms that we term gastralgia. Neuralgia of the stomach is undoubtedly associated with, and is an expression of a variety of pathological conditions. The slight heaviness or fulness after taking food, characteristic of chronic gastritis, hardly amounts to a neuralgic pain; but in atonic dyspepsia the pain is occasionally acute. Both ulceration and cancer of the stomach cause the severest pain, and are susceptible only of slight relief through electricity. Chronic catarrhal gastritis occurring in the gouty subject is another cause of gastralgia, for the relief of which dependence must be placed upon remedies other than electricity. Experience clearly shows, however, that there does exist a form of gastralgia dependent neither upon inflammation nor organic disease, entirely functional in character, and relievable by very much the same methods as neuralgia in other parts of the body.

Electricity enables us not infrequently to diagnosticate between gastralgia dependent upon organic changes in the stomach, such as ulcer, beginning carcinoma, etc., and gastralgia of the purely neurotic type. A case in point occurs to me. Some time ago I was consulted by a gentleman for a severe pain in the stomach, that had persisted for more than six months. The character of the pain was suspicious, and he had been told that the cause of it was ulceration. As in pain from that cause, so the pain in his case was referred to one spot in the epigastrium and in the back. When the stomach was empty, but little if any pain was experienced; but, in a very few moments after eating, the distress was often extreme. The first application of electricity was made at the beginning of a severe paroxysm of pain, and within five minutes it disappeared completely. This result indicated very clearly to my mind, that we were not dealing with an ulcer, for in a number of cases of this character which have fallen under my observation, every one had failed to be relieved by any form of current or any method of application.

It is not to be expected that this aid to differential diagnosis never fails, for true gastric neuralgia may resist the action of the current, as do other neuralgic types. When, however, it does relieve as promptly as in the case just referred to, its diagnostic value is undoubted.

In treating gastralgia both forms of dynamic electricity have proved effectual, and in the selection of the current, one must be governed by the special indications in each individual case. Not infrequently indeed, it will be found impossible to determine which form of current is best adapted to the case in hand until actual trial is made. In a considerable experience, however, in the treatment of gastralgia, I have found that in those cases where firm pressure over the seat of pain tended to relieve rather than to increase the pain, the faradic current of high tension, or the rapidly interrupted static induction current yielded the best results. On the contrary, when the part was sensitive to pressure, pain being increased rather than relieved, the galvanic current generally proved most effective. In one case of gastralgia in which the faradic current of high tension was indicated, but which failed to accomplish very much, the static interrupted current succeeded in affording speedy relief.

In using the galvanic current, I prefer electrodes of plastic sculptors' clay, placing the anode over the seat of pain. In this way currents of twenty to thirty milliampères, through a comparatively small electrode, are easily endured.

The integrity of one's digestive powers depends upon the tone of the muscular tissues of the stomach as well as upon the healthful action of the nerve centres and connecting nerves. The vast majority of cases of confirmed indigestion for which relief is sought, depend upon no structural change in the stomach but are occasioned by a deficient secretion of gastric juice or a defect in the muscular tone of the organ. The resultant feebleness of the viscus lessens the activity of the characteristic churning movements that attend the digestive process, and the first act of digestion is unduly prolonged. Atonic dyspepsia is sometimes hereditary and in such cases tends to manifest itself rather early in life, but when no hereditary tendency exists, the disease is more often one of later years.

Like all other organs, the physiological activity of the stomach declines as years increase, and dyspepsia among the aged is a common symptom, while among the younger and well-to-do portion of the community who suffer from atonic dyspepsia, the cause is usually to be found in an undue amount and frequency of food. Then, again, under the mistaken idea, that conditions of debility must be corrected by the frequent and large ingestion of food, the stomach is never allowed a sufficient period of repose. The poor as well as the rich suffer from this form of indigestion.

Innutritious as well as insufficient foods are potent causes of atonic dyspepsia, the cure for which is in many cases simply a more generous diet. Anything, indeed, that interferes with the secretions of the stomach, or with its muscular action, tends to weaken the function of digestion. Atonic dyspepsia is, therefore, often associated with any chronic discharge such as leucorrhœa, and it is not uncommon to find anæmia and indigestion closely allied. Atonic dyspepsia is seldom attended with acute pain, although there are exceptions. As a rule, the disease develops very gradually, about the first symptom observed being more or less flatulence associated with a feeling of distention after eating. The distended stomach may also interfere with the action of the diaphragm and occasion more or less dyspnœa.

Eructations are common and annoying, but vomiting is seldom observed. The appetite in this disease may finally become greatly deficient, and sometimes there is an absolute aversion to food. Impaired digestion, long continued, is often associated with marked functional disturbance of the heart, that manifests itself most violently at night. The pulse is often slow and feeble, and the extremities cold.

Constipation is a pretty constant symptom, and loss of flesh and strength almost necessarily follows. Organic diseases are, as a rule, readily distinguished from this functional disturbance, but it becomes more difficult to differentiate between atonic dyspepsia and certain inflammatory affections of the mucous membrane. A diagnostic point of importance is the epigastric tenderness which is almost invariably associated with inflamed conditions of the gastric mucous membrane; while, in cases of indigestion due to atony, pressure causes no pain. Neither acidity, heartburn or vomiting are common in atonic dyspepsia as in gastritis. While in inflamed conditions of the stomach, the urine is high-colored and loaded with lithates, in atonic conditions it is rather pale in color and deposits oxalates or phosphates.

Although electricity is only one of many remedies that may be indicated in atony of the stomach, yet an abundant experience in the treatment of this condition, justifies me in placing it in the front rank of our therapeutic resources. Manifestly the indication of primary importance is to remove, so far as possible, the causes of the disease. Whatever is injudicious in the quantity and quality of the food or the frequency with which it is taken, should be corrected, and the patient instructed as to proper methods of living. If he continues to masticate his food imperfectly, eating too much or too little, or persists in indolence or luxurious methods of living, neither drugs nor electricity will avail. In connection with proper hygienic methods I have known electricity to help on rapidly to a greatly improved condition of health. Whether the defects of digestion depend upon an exhausted condition of the nervous system, interfering with the normal activity of the processes of excretion and secretion, or whether the blood-supply is deficient in quantity or abnormal in quality, the well-attested action of electricity in modifying the physiological functions of the body, renders it the most efficient of remedies. The tendency of electricity is both to increase secretory processes and to modify their quality. The secretion of the gastric juice and of the intestinal fluid has been shown to be increased by external electrization alone.

Even without demonstration, analogy shows that these fluids ought to be secreted in greater abundance under the influence of the current, and the results of the treatment in pathological cases give this probability the force of certainty. Appetite is sharpened, digestion is quickened, and constipation relieved both by local and general treatment, so rapidly and so decidedly as to make it evident that the gastric and intestinal fluids are made to secrete more liberally by the action of the current on the nerves that supply these organs, than on the tissues of the organs themselves. An excellent means of studying the variations in the nutrition through electrization is found in the elimination of urine. This is believed to be a result of oxidation-processes, that may take place either in the kidney or in the tissues, or in both.

Animal nutrition is a process of enormous complications. There is no single chemical change at which one can point and declare, that this explains the growth and sustenance of the body; but there are nameless and numberless phenomena every moment going on in the living tissue, and as a result of these in their infinite play and combination, the body lives, moves and has its being. Electricity in passing through the body modifies many or all of these processes, and thus modifies nutrition.

As a resultant of the complex, physical, chemical and physiological action of electricity on the tissue, there is increased development and growth. The faradic current of rapid interruption and high tension yields results superior to the galvanic in the treatment of atonic dyspepsia. In the use of the faradic current, the treatment must be both general and local. General faradization is pre-eminently indicated in this affection, not only for its direct but for its reflex effect upon the nerve-supply of the stomach. While in dilatation of the stomach internal applications are of the greatest service and often indispensable, in atony they are seldom, if ever, indicated. In the use of the faradic current, the electrodes should be sufficiently large to prevent any undue concentration of current, and instead of being stationary, the pole over the region of the stomach should be kept in almost constant motion. In this way and by the exercise of care, it is quite easy to avoid those painful muscular contractions that so frequently occur.

Through inattention to this simple precaution, I have on more than one occasion seen the most violent and prolonged spasm excited, exhausting the patient and discouraging him from further attempts in this direction. The continuous or unbroken action of the galvanic current, notwithstanding its usually good effects in the promotion of nutrition, when used in this way, seems to be of little use in atony of the stomach. The direct mechanical action, and the indirect reflex effects of a mild galvanic current rapidly interrupted is undoubtedly of service, although inferior in its therapeutic effects to the induced current of high tension.

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A TRANSIENT OR EPHEMERAL FORM OF HIP-DISEASE, WITH A REPORT OF CASES.

BY ROBERT W. LOVETT, M.D.,
Surgeon to Out-Patients, Boston City Hospital and Children's Hospital,

AND JOHN L. MORSE, M.D.,
Formerly House Physician at the Boston City Hospital.

The following investigation was undertaken to ascertain if there is, as there appears to be at times, a short-lived and ephemeral form of hip-disease which presents at first the characteristics of common hip-disease, but the symptoms of which disappear in a few months instead of continuing for years. These symptoms are in many cases, of course, due to the existence of a simple, acute synovitis; but in others, as will be seen, they present characteristics of true bone disease.

Attention was called to these cases chiefly by the fact that a certain number of patients came to the Children's Hospital for advice in cases of early hip-disease but never returned. As there is no other hospital in the city where these cases are treated to any extent, it seemed probable that a proportion of them recovered and needed no further treatment. This state of affairs is so thoroughly different from what one expects in ordinary hip-disease, that as many as possible of these cases were investigated at their homes last February, some years after their visit at the hospital, and the investigation not only showed some interesting points in connection with acute synovitis of the hip in children, but also seemed to establish the existence of a short-lived and transient form of hip-disease which occurs at times. This point is of such importance practically that it seems worth while to consider these uncommon cases somewhat in detail.

In general, the cases which proved afterward to be synovitis, came to the hospital with a limp and pain following injury; often night-cries were present, and there was a certain amount of resistance to passive motion of the hip induced by the pain of such manipulation. Here, then, was a symptom group identical with early hip-disease. The chief points of difference being that in synovitis the pain was out of proportion to the muscular rigidity in most cases, and was a voluntary restriction rather than a true reflex spasm. But these are very slight matters and quite insufficient to establish a differential diagnosis. The fact that the symptoms follow closely upon injury can be allowed very little weight because it is found among hospital patients that a certain proportion of children with hip-disease come with exactly this history, the fall being the occurrence which calls the attention of the parents to the child's disability, which may have been of many weeks' standing.

The years 1888 and 1889 were selected for investigation; and of 156 new cases of hip-disease coming to the hospital for advice in that time, it was found that 38 either did not return or only came once or twice, not receiving continuous treatment. It was among these cases that we were to look for cases of transient hip-disease, if it occurred.

It was possible to find or hear from 24 of these 38 cases in February, 1892; 11 of them had developed undoubted hip-disease of the ordinary type, and had gone from bad to worse, but for some reason had not returned to the clinic. The remaining 13 cases had made a rapid recovery, and had remained well, although from two to four years had elapsed since their visit to the hospital.

ACUTE SYNOVITIS.

Of these 13 cases eight seem to have been a simple acute synovitis of the hip. A typical case of simple acute synovitis is the following:

Case I. Flossy S., five years old, fell while playing, in May, 1888. Motion at hip was painful and the child limped, the pain becoming less while the limp remained. Night-cries were frequent. Two weeks later she was brought to the hospital, where the following condition was found: No shortening, atrophy or trochanteric thickening. Motion was limited in all directions by muscular spasm, flexion being possible to only 90°. The diagnosis of hip-disease was made, and the child directed to return in a week for a Thomas splint. She became so much better during this time that she did not come back, and was entirely well in three weeks. She has had no recurrence of symptoms. Now, three years and eight months later, she has perfectly free motion in all directions, with no atrophy or shortening.

This seems to have been a typical case of simple traumatic synovitis; but the beginning was so much like that of true hip-disease that the diagnosis of synovitis could not have been made with any certainty at the time. In fact, the diagnosis of acute synovitis of the hip in childhood, is one which should be made only with the greatest caution and the symptoms in general accredited to probable hip-disease.

There was another type of synovitis, not induced by injury, where the symptoms seemed to be of rheumatic character. Such was the following:

Case II. Frank B., nineteen months old, was brought to the hospital in February, 1888. He had then been ill for six weeks, the last three in bed. The hip was very sensitive, and the slightest motion extremely painful. Night-cries were continual, and he had lost flesh rapidly. He had been treated for rheumatism for some time, but the diagnosis of hip-disease was finally made by the family physician. Examination showed much tenderness about the hip, the thigh was held flexed at 45°, there was no motion, and much trochanteric thickening. The diagnosis of hip-disease was confirmed, and the child measured for a Cabot frame. He improved so rapidly, however, that he did not return, and was well in ten days. He had no abscesses, and has not been lame since. Is now, four years later, perfectly well and strong.

OSTITIS OF THE HIP.

But, as already noted, certain of these cases which recover so quickly, show characteristics which cannot be accounted for by a simple synovitis and one must assume that an affection of bone has been present. Such is the following:

Case III. Frank F., eight years old, came to the hospital in September, 1889, six weeks after a slight fall. His symptoms were lameness, pain and night-cries. Examination showed trochanteric thickening. Rotation was not free when the thigh was flexed at a right angle and flexion and hyperextension were limited. He walked with a slight limp. A probable diagnosis of hip-disease was made. The boy was much better in two weeks, and in three months, motions were normal. Now, two years and six months later, there is no limitation in motion, but some trochanteric thickening; a shortening of one inch, but no atrophy.

The fact that, two years and a half after the cessation of symptoms, there remained a shortening of one inch in the affected leg along with trochanteric thickening, would point clearly to an affection of bone. A similar case was:

Case IV. William H., six years old, came to the hospital in April, 1889. He had been troubled by pain and lameness for some weeks, and the diagnosis of hip-disease had been made by the family physician. There was no history of injury, and at the time of examination at the hospital he presented the following symptoms: The right leg was half an inch shorter than the left. Flexion was resisted by marked spasm at a right angle, and rotation and hyperextension were much limited. The diagnosis of hip-disease was naturally made, and a traction-splint was advised. For some good reason the parents could not return, and the boy never had any treatment. He limped for about six weeks, then recovered, and has never had any further trouble. Three years later the motion in the right hip was not so good as in the left, and there was half an inch shortening of the right leg.

It hardly seems worth while to report in detail the other three cases, which differ but little from these. One recovered in five months from the beginning of her symptoms; one in eight months; and one in a few months, the exact time of which cannot be stated.

Enough, however, has probably been said to demonstrate the existence of this short-lived form of hip-disease. With regard to its pathology, all must be conjectural. It is probable that in these cases the focus of tuberculous disease is situated in a part of the epiphysis remote from the joint, and that in its growth it causes enough disturbance in its neighborhood to give rise to symptoms of joint irritation. The fact that joint irritation may be caused by a focus of disease which has not ruptured into the synovial cavity, was clearly demonstrated by the autopsies of Lannelongue.[1] Having caused these symptoms of joint irritation, it seems probable that the focus of disease either becomes quiescent or grows away from the joint if it continues active, and after a brief time the symptoms subside.

It will be seen that these cases do not present any early symptoms different from those of hip-disease of the common type, so that their recognition seems impossible; moreover, hip-disease is characterized by such marked remissions of symptoms that this type of disease is easily simulated in that way. But the fact remains that, even if one leaves out of consideration cases of acute synovitis, certain cases presenting all the symptoms of true hip-disease run their course to a favorable termination within a few weeks or months, and the matter is one of such practical importance that it deserves recognition.

Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D.

TRACHEAL TUGGING AS A DIAGNOSTIC SIGN OF THORACIC ANEURISM.[1]

Grimsdale questions the value of tracheal tugging as a sign of thoracic aneurism, as out of one hundred and eighteen cases taken at random from the medical and surgical wards of St. Bartholomew's Hospital, it was present in fifty-one, being found in the most varied conditions of heart and arteries. In four cases it was classed as "marked," two being cases of aneurism, one a case of emphysema and bronchitis, in which it was most apparent in the position of expiration, and one a case of chlorosis, in which it was usually slight, but became marked on excitement; in seventeen it was "moderate"; in twenty "slight"; in the remainder it was very slight, doubtfully present, or occurred only on excitement.

The tug therefore occurs in sixteen per cent. of all cases taken at random, and is in all respects indistinguishable from that occurring in such cases of aneurism as have fallen under his notice.

As a purely negative sign tracheal tugging may be useful, but its presence without any corroborating evidence is so far from being diagnostic as to be of no computable value.

A METHOD OF INCREASING THE INTENSITY OF HEART SOUNDS.[2]

Azouley[3] describes a method of procedure which allows of the more easy detection of cardiac bruits when they are only slightly marked, and which is capable of bringing them into evidence when they are absent during our examination of the patient. It consists in making the patient lie as horizontally as possible, with the arms stretched above the head, and the head and legs raised as high as possible on cushions. Cardiac tension is thus increased and the physical signs accentuated.

A CASE OF RUPTURED HEART.[4]

The following case is reported by Rouse. A stout and plethoric looking man of fifty-two, while playing foot-ball, suddenly fell down in a sort of faint, but soon recovered and continued to play till the end of the game, never, however, really over-exerting himself. After the game he was again seized by a somewhat more severe fainting fit, which was accompanied by severe pain in the cardiac region and later by vomiting. He was kept in bed for two days; then, as his symptoms had subsided, he was allowed to be up and walk about. His condition remained the same up to the seventh day after the original attack, when he had another fainting fit and died in less than five minutes. At the necropsy a complete rupture of the left ventricle was found half an inch in diameter. The pericardium contained twelve ounces of blood clot beside some blood mixed with serous fluid. The heart substance was very friable and fatty degenerated, as were also most of the other organs. It is presumed that on the date of his first violent symptoms an incomplete rupture occurred, or one so small as not to allow the escape of blood into the pericardium, while on the day of his death some sudden exertion or additional blood-pressure increased the previous injury and as a consequence the immediate rush of blood stopped the heart's action and was the cause of death.

THE PRESYSTOLIC MURMUR WITHOUT ORGANIC DISEASE OF THE MITRAL VALVE.[5]

In the *Medical Chronicle*, Vol. xii, No. 3, Maguire gives a *résumé* of nine cases, collected from English literature, of presystolic murmur without organic mitral stenosis, in which there was usually aortic insufficiency, and adds two cases of his own. In both of these beside a systolic soufle at the apex and a diastolic in the aortic area, a marked presystolic murmur could be heard terminating with the first sound. The autopsy showed in both cases aortic insufficiency, but no obstruction at the mitral valves. As a complication in the second case, an aneurism of the anterior coronary artery with rigid walls bulged into the left auricle, and very possibly was the cause of a relative narrowing of the mitral orifice. Maguire believes that these murmurs are produced by the floating out of the anterior mitral flap by the simultaneous entrance of two blood streams, one from the aorta and one from the auricle, producing eddies which are still further increased at the moment of the systole of the auricles.

At all events the sound does not seem to be propagated from the aorta, but is produced at the valve itself. He considers its occurrence as more common than is ordinarily supposed, but owing to the lack of autopsy its true character is not suspected. He mentions a case seen only during life which presented this phenomenon, the mitral valve being apparently unobstructed.

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[1] Coxotuberculose, Paris, 1883.

[1] Practitioner, February, 1892, p. 96.

[2] Supplement to British Medical Journal, June 4, 1892.

[3] Gaz. des Hôp., May 12, 1892.

[4] Lancet, February 6, 1892.

[5] Centrlblt. f. klin. Med., No. 13, 1892.

TREATMENT OF PLEURISY WITH EFFUSION BY DRUGS.[6]

Churton says that it is still unfortunately too common to speak about the treatment of pleurisy without differentiating the varieties of pleurisy. He believes that the majority of all cases is tubercular, a considerable contingent is rheumatic, while that which attacks alcoholic subjects seems sometimes neither rheumatic nor tubercular. That which follows nonfracturing blows upon the chest may be due to either cause. Cases of rheumatic pleurisy can be cured in a few days by a milk diet and salicylate of sodium, which he gives in fifteen to twenty grain doses every two to four hours. In cases of tubercular origin it is doubtful if the drug can cause such marked and rapid amendment. The temperature may fall, but, usually at least, the patient does not otherwise improve, and may actually seem worse. The fluid does not diminish in quantity unless the disease is being cured by other conditions, while the temperature rises as soon as the salicylate is omitted. Salicylic acid may therefore be of aid in differential diagnosis.

THE SIGNIFICANCE OF LEUCOCYTOSIS IN CROUPOUS PNEUMONIA AS AN ELEMENT IN PROGNOSIS.[7]

Von Jaksch says that he has repeatedly noticed that in those cases of croupous pneumonia which are unaccompanied by leucocytosis, the prognosis is unfavorable, a clinical observation which Tchistovitch[8] has experimentally corroborated by inoculation experiments on rabbits. Should these observations be fully corroborated, in cases where leucocytes are deficient, those drugs will be indicated which have the power of increasing their number, for example, pilocarpin, antipyrin, antifebrin and nuclein. Von Jaksch has had little experience in judging of the real value of such drugs, but gives an instance where a hypodermic injection of the former caused a decided increase.

ALBUMOSURIA IN PNEUMONIA.[9]

Dickinson and Lee in giving an account of twenty cases of pneumonia and allied conditions in which the urine contained albumose, said that true peptone was never found, and it was probable that what was called peptone in the earlier papers would to-day be called albumose. The method employed was to remove from the urine such proteids as were coagulable by heat and then to treat with nitric acid and the biuret test. The latter was applied by means of a twenty per cent. solution of caustic potash or soda containing a little sulphate of copper. Upon the surface of this dense fluid the urine was floated, and in those cases where a positive result was obtained, a pink color appeared at the junction of the two fluids. Judging from the results obtained upon animals the diarrhœa from which many of the patients suffered might have been due to the passage of albumose through the blood. It was probable that, other things being equal, albumosuria was a favorable sign in severe pneumonia, for in some most virulent and fatal cases with extensive hepatization of lung, it was absent throughout. The origin of the albumose was pus, or at least inflammatory exudation, and was probably a product of the pyogenic micro-organisms.

ALCOHOLISM AND TUBERCULOSIS.[10]

H. W. G. Mackenzie, assistant physician to the Brompton Hospital, says that from the histories given by patients and from the evidence afforded by post-mortem examinations the conclusion has been forced upon him that tubercle is more common among the alcoholic than is generally believed. He has collected 75 cases from the post-mortem records of St. Thomas Hospital, in which there was a strong history of alcoholism. In only 10 was there any hereditary taint; in 46, or in over 60 per cent., the liver was cirrhotic. In 67 of the 75 cases the lungs were affected, the commoner type of alcoholic phthisis being a combination of excavation with broncho-pneumonic consolidation, and usually a considerable deposit of gray tubercle in the lung. The fibroid change was rarer, occurring in only 12 of 67 cases. In his experience a history of alcoholism is a very common antecedent where there is no hereditary susceptibility. In alcoholic cases the condition of the patient is generally worse than would be expected from the amount of the disease discovered by physical examination. It is therefore especially important in such cases, when there are any chest symptoms, to examine the sputum for bacilli. By this means he has been able to make a diagnosis of phthisis when examination of the chest was negative. In alcoholic cases he has found that the progress of the disease, as a rule, is rapid, and the prognosis unfavorable. The belief that as regards people of any age, alcoholic drinks in excess act as a preventive of tubercle, he considers not only not borne out by experience, but altogether contrary to it. Without post-mortem examinations, conclusions as to the absence of tubercle are fallacious and of no practical value.

(To be continued.)

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular meeting, Monday, April 25, 1892, the President, Dr. Frederick I. Knight in the chair.

SPECIMENS.

Dr. M. H. Richardson: I have here a specimen, not in itself especially interesting, but the case, I think, is one of great and unusual interest. These are five gall-stones, three of considerable size and two very small ones, removed on Good Friday from a woman sixty years of age. The interesting point in the case is that she had five per cent. of sugar in the urine, thought by Dr. Fitz to be due to the irritation of the retained bile.

Another interesting point was whether to operate before treating the patient for sugar, or wait until the sugar had disappeared before operating. I felt the gravity of the operation very strongly. The diagnosis was made of impacted gall-stones. There was no difference of opinion. I thought myself it might be malignant. She did very well after the operation, is now convalescent, and the sugar has now entirely disappeared. The gall-stones were in the common duct, and like almost all the cases I have operated on, the gall-bladder was very much contracted and friable. The duodenum was forming adhesions to the under surface of the gall-bladder, and to the liver. It was impossible to prevent bile escaping and covering the parts about the foramen of Winslow, but it does not seem to do any harm at all to have bile escape, and it was drained in the way I have described before, by putting a glass-tube in the remains of the gall-bladder and packing about with gauze. It is the seventh case I have operated on, and there has been no constitutional disturbance whatever. The bile does not seem to do any harm whatever. All the methods of preventing the escape of bile are entirely unnecessary. Making an opening between the gall-bladder and duodenum is difficult and unnecessary. I expect, if she does the way other cases do, that the bile will soon reappear in the fæces, and that the fistula will recover in the course of a few days. In cases where the gall-bladder is sewed to the abdominal wound it makes a fistula which does not close.

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[6] Internat. Clin., 1891, vol. iii, p. 84.

[7] Centrblt. f. klin. Med., No. 5, 1892.

[8] Ibid, No. 2, 1892.

[9] Boston Medical and Surgical Journal, December 5, 1891.

[10] British Medical Journal, February 27, 1892.

Dr. Homans: Did you put the drainage-tube in the common duct or in the gall-bladder?

Dr. Richardson: In the remains of the gall-bladder, and in this case I think it did not go out of the gall-bladder. In other cases I have put it through the cystic into the hepatic duct, but in this case I was not able to get it into the hepatic duct at all. It was in the gall-bladder, but not in the hepatic duct.

Dr. Homans: I saw the operation, and I thought the doctor said he put it into the common duct.

Dr. Richardson: It may have gone into the common duct, but it did not go into the hepatic duct.

Dr. Homans: Did he sew up the wound at all?

Dr. Richardson: Two wire sutures in the lower part. I simply packed it with gauze.

Dr. Homans: Does any bile go into the intestine now?

Dr. Richardson: None has appeared yet. It is not quite time for it. It usually begins about the end of the second week.

Dr. Homans: Whether the sudden removal of the gall-stones from the common duct or hepatic duct does not seem to result in the immediate flow of bile into the intestine? It comes on at the end of two weeks as you say.

Dr. Richardson: I had to do in this case as I have done before. It was impossible to bring the gall-bladder to the abdominal wound and it was necessary to pack it and let it get out the best way it could through the glass tube. Of course, it has got to run uphill. One object of the tube is to give the common duct, which must be in a state of great irritation from the stones — and, by the way, the stone that impacts is always very rough and friable on its outer layer — a chance to get into a healthy condition. Of course, it is impossible to draw many conclusions from four or five cases, but in all the cases that recovered, bile appeared after two or three weeks, but it does not appear until that time.

Dr. Homans: Did the bile come out of the glass drainage-tube or out all around it?

Dr. Richardson: As the adhesions formed it came out of the tube.

Dr. Homans: Why do you prefer the glass tube?

Dr. Richardson: I think it stays in place better, and works, I think, better than the rubber tube would. I never used the rubber tube.

Dr. Homans: Do you fasten it in?

Dr. Richardson: No.

Dr. Homans: Vomiting does not throw it out?

Dr. Richardson: No.

Drs. G. L. Walton and F. E. Cheney presented a paper on

THE IMPORTANCE OF CORRECTING OCULAR DEFECTS IN FUNCTIONAL NERVOUS DISORDERS.[1]

Dr. Hay: I agree in general with what has been said in regard to the influence of errors of refraction on the nervous system, hardly to the extent, however, of causing epilepsy or chorea. I remember a young lady coming into my office in a most nervous condition, who would hardly allow me to look at her eyes; but after persisting and using a good deal of effort, I found that she was astigmatic, and put on a pair of glasses, and the immediate effect was most remarkable. Her whole manner was utterly different. I do not think it was merely imagination, because those glasses continued to help her for some time afterward. What I would like to speak of particularly is the difficulty of finding the glasses which correct. I have a case of headache in a young girl fourteen years of age. She is rather large for her age, and has suffered from headaches for seven years. I examined her eyes without atropine at first, and prescribed convex cylinders, half dioptres, axes vertical. I thought they were indicated, and she saw much better with them. She said a short time afterwards they did no good. The headaches were just as bad. I then examined the eyes under atropine and prescribed one and three-fourths dioptres spherical, with the previous cylinders. When she was perfectly under the effect of atropine, her headache disappeared. She came into my office, saying how strange it seemed to be without headaches. I considered the headaches must be due to accommodation. A short time after this she came again, and said she could not wear the glasses. I then gave her weaker ones, on the supposition that her eyes insisted on doing some accommodation themselves, and I took off a whole dioptre in the spherical part and kept the cylindrical part. She came in very much better, could wear the glasses, see in the distance, read with them; and, although she had had some headaches, she was much better. But the other day she came in without her glasses, saying that her head ached and she could not wear them. Now I am a little at a loss how to proceed. I give that as a case where it is not so easy to find the correct glasses.

It is getting to be believed now that the eyes tend of themselves to overcome a certain amount of astigmatism. That complicates the whole question of what glasses to prescribe. The question then is, if you know there is a certain amount of ametropia under atropine, what glasses to give the patient. The patient will correct a certain amount of the hypermetropia, and perhaps a certain amount of the astigmatism or possibly modify the astigmatism. There is no rule I know of to state just how much that patient will correct of herself, and I do not know that she will correct the same amount to-day as a month hence. I look upon it as a question of approximative correction. In connection with this view of the case, I would like to allude to some observations published by Dr. Roosa of New York, who does not believe in muscular asthenopia, and believes the question is mainly one of astigmatism and the correction of astigmatism. I would like to call attention to some of the cases he reports. When we read by the ophthalmometer that there is a certain amount of astigmatism, it is the rule not to give a glass of just that number, but to change it a certain amount. Now it is curious to see how much he has changed in the cases which he reports. If there was a certain error of measurement caused by the construction of the instrument, it ought not to vary a great deal. I will merely give the changes from the reading which he uses in prescribing the glass: $\frac{1}{4}$, $\frac{1}{2}$, $1\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{2}$, $1\frac{1}{4}$, $1\frac{1}{2}$; that is, it shows the difficulty, which I think exists sometimes — whatever instrument we use, whatever method we adopt — of knowing precisely what glass to prescribe. The ordinary explanation of this difference would be that the astigmatism does not depend merely on the cornea which the ophthalmometer measures, but in part on the internal portions of the eye, for instance, the crystalline lens; but I think the explanation given above comes in also, that one patient corrects to a certain degree an error of refraction, and another patient to a different degree. I suggest that as a cause of the difficulty in many cases of correcting the ametropia, a difficulty I myself have experienced many times.

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[1] See page 152 of the Journal.

Dr. Standish: The question of eyes and nerves is something I have been thrown in with a good deal in the last few years, and I want to say that all these men who have a method of cure of nervous troubles by correcting errors of refraction alone, whether by ophthalmometer or otherwise, or by nicking muscles alone, are wrong, because in every case we have a different problem. In one case we cure by operating on the muscles, in another by correcting astigmatism, in another by relieving strain for distance. It is not strange that a nervous disturbance should arise from the eyes. We have an arrangement that is exceedingly complicated, two eyes working together, and these eyes accommodating from distance to near. These eyes may be alike, may be different. One may be astigmatic and the other normal. The patient may use one eye for distance and one for near, etc. Anybody who is going to prescribe a glass must know how these eyes are used; then he must exercise his wits in prescribing the glass. I have often said that refraction is divided into two parts; first, the science of finding out what the trouble is; and, next, the art of knowing what to prescribe. I think the latter is the greater part of the practice. We must know, not only the error of refraction, we must know how that patient converges his eyes and the muscular balance for distance and near.

I was struck by what was said in the paper, that an error of refraction where the patient sees perfectly well is often an error that causes great disturbance. I would go further, and say that an error of refraction which comes into play in the distance, in a patient who sees extremely well, is a sure cause of nervous disturbance. If you have a patient who sees nearly double normal vision and has a small amount of astigmatism, that patient will have headaches and nervous disturbance, and another patient with a similar ocular condition and who has a less vision will have no nervous disturbance. The patient who sees everything sharply and quickly and distinctly, desires to see everything, and is under a constant strain, while the other knows he cannot see well, and never corrects his astigmatism except when it is necessary, and is only under strain when doing near work. That I think is a factor very much overlooked. Because a man sees rather better than his neighbors, it is thought that his eyes cannot be at fault.

The only exception I would take to the paper is this: among the symptoms enumerated in these cases was a certain amount of conjunctivitis and reddening of the lids after near work. My experience, carefully noted for several years, is that patients who have red and painful eyes after reading, eyes that feel as if there were sticks in them, do not have headaches and do not have nervous disturbance. Exactly why I do not know. I have sometimes thought it might be that in cases in which the conjunctivæ were early affected the strain became so disagreeable that they did not continue their work sufficiently long to get up a nervous disturbance. I am sure it is a fact.

Another thing which is strange; how much more acute the laity are than the profession in this matter. It is the commonest thing in the world to have a patient come to my office and say he had been unsuccessfully treated by Drs. So-and-so and So-and-so for headache, and that he saw Mrs. Such-a-one and she suggested that the eyes were at fault. No one of the doctors had ever suggested that. Very often it is the eyes; not always.

Another thing, and that is the natural history, so to speak, of a case of headache or nervous disturbance from the eyes. That the headache comes when the eyes are in use, comes from the strain on the ciliary muscle, comes from the strain of convergence, but 99 out of 100 times from strain on the ciliary muscle. Now when a physician sends a patient sixty-five years of age to an oculist for headache, he forgets that such a patient has no accommodation, and when he forgets to send a patient six or seven or ten years of age to an oculist for a headache, and treats him for stomachic trouble, he has made an equal mistake. The vast majority of children at that age who suffer from headache suffer in the months that they attend school, and then alone. After a man gets on to middle life there are a great many things that may cause headache. Headaches in the child, occurring with tolerable regularity during school terms, and better in summer, almost always are due to the eyes. When is the next time in life you should have headaches? Of course if a man has an error of refraction in his eyes and is able to correct it and does not have headaches, there is no sense in wearing glasses. But suppose that man goes on to forty years of age and is beginning to lose his accommodative power for near, then comes the time that he cannot carry the burden, and then for the first time comes his headache. Consequently headaches in youth and childhood and headaches at forty to forty-five years of age are the headaches that are most likely to be eye headaches. The next general class of headaches comes in people who, at the age of twenty-five or so, adopt some new occupation which requires great use of the eyes. The patient has accommodation enough to overcome the error as long as he was walking about and selling shoes, but not enough for the thought and study necessary for civil engineering, so that I do not think that the sensation of pain in the eyes or blurring is to be depended upon. The question is this, whether the patient is at the time of life when eye-strain is of importance, or has taken up some new occupation or pastime which requires more eyesight than before. If these things are coincident with headache it may be supposed that the eyes have to do with it.

With regard to spasm of the lids, I have found spasm of the lids and put on glasses and thought I was to do a great deal, but have cured very few.

With regard to mental disturbance I think, that is a factor about which very little has been said, but about which we shall hear a great deal more in the future. There is no doubt that an uncorrected error of refraction is a great burden for any one to carry. The person gets up with a headache in the morning, goes to to bed with a headache at night, is tired if he rides in the cars, is tired if he goes to the theatre, etc. A condition like that superimposed upon a person of unstable equilibrium mentally, must be a great drag.

I think if we put atropine in the patient's eyes and the headaches cease as long as we keep it in, that correction of the refraction will stop the headache, and it is a wonder to me that the general practitioner does not oftener employ that method of diagnosis.

Dr. Webber: I am very much interested in this subject, and will call attention to a few cases that seem to me striking. One case was that of a boy who had symptoms of chorea affecting chiefly the muscles of the face. I sent him to an oculist who corrected his error of refraction and the boy was entirely cured by it. I have lately seen another similar case. I have sent several neurasthenic patients who had headaches, and patients who did not have headaches, to oculists, thinking that eye-strain was one element in their nervous condition; some have come back with the statement that there was nothing the matter with their eyes. Others have received glasses from which they got no benefit. I do not mean that I should give up sending such patients to the oculist. In a number of cases the eyes have certainly been at fault; but eye-strain is only one cause of their illness, and often not the chief cause. I have not come across any cases of mental trouble, melancholia, etc., where I thought the eyes were at fault. I shall be on the lookout for them.

Dr. E. E. Jack: Ocular headaches are certainly common. We see them every day. A great many times the headaches occur without any ocular symptom. The pain may come on in the morning even, and yet be due to eye-strain. In the greater number of cases, the eye-defect is small, vision may be normal or more than what is usually accepted as normal. Less often, I think, the pain is associated with marked defects and very poor vision. I have recently seen a case in which the use of strong compound cylindric lenses has not only improved the vision, but cured severe, long-standing headache not attributed to the eyes. It would seem that ocular strain sufficient to cause nervous disturbance would make itself known by ocular symptoms. This is certainly, though not always, the case.

Dr. J. B. Ayer read a paper on

RECUPERATIVE POWER IN ADVANCED AGE.[2]

Dr. Goss: My experience has been somewhat as Dr. Ayer expresses in his paper. It has rather surprised me that a good many elderly people recovered after the recent epidemic, when, in the beginning, I hardly expected they would survive, owing to their advanced years and seeming weakness; but those whom I have seen have almost all, I think, thoroughly recovered, though the convalescence has been slow, as the reader has stated.

Dr. Mixter: The reader has spoken of the way in which elderly persons recover from surgical operations; and, although perhaps only one of the points I have in mind has to do with influenza, I want to say what I have often thought to be a fact, and that is, that old people are like the people suffering from chronic disease, as regards surgical operations. It is perfectly surprising how a person with, perhaps, long-standing tuberculous disease of the knee-joint or of the hip-joint will stand the operation of amputation of the thigh or at the hip-joint. They apparently have very little shock, and the recovery is much more rapid and uneventful than one would suppose. In that way, I think, they correspond to these old people. Their vitality is at a low ebb, and the reaction is correspondingly low. As an example of what an old person can stand, following influenza, is the case of an old woman in Taunton, who had first, grippe, then double pneumonia, and then gangrene of the foot. I went down to Taunton and amputated the leg under practically primary anæsthesia. She was talking all the time that the operation was going on, although she felt nothing of it. I saw her the other day, some weeks after the operation, and she was practically well. In other words, that woman has been through influenza, double pneumonia, gangrene of the foot, and amputation of the leg — a woman of seventy odd.

One other thing that I may bring up about operation on old people, and that is the great value of light etherization, practically primary anæsthesia, or operations which are very mild, with solutions of cocaine. In this way very little shock is suffered by the patient, and quite severe operations can be done with perfect impunity in people seventy, eighty or ninety years old.

Another example of what can be done in the old person is a case in which I removed the breast for what I imagined was Paget's disease — at any rate, a chronic eczema of the nipple, where I removed the gland (which was small) and a certain amount of the skin, on account of the great pain and the eczema (or whatever it was) not yielding to any treatment that had been given it. I took off the breast practically under primary anæsthesia. The operation was done at ten o'clock; the patient came out of what little ether she had, and said that she would like to go down stairs, and went down two flights to her supper, and went about as usual after that operation; and the wound was dressed the first time in ten days, and she had absolutely no inconvenience from the operation, and the whole breast was removed. This is simply an example of what a person in advanced years will stand in the way of surgical treatment.

There are 139,000,000 women in India, of whom 21,000,000 are widows. Among the latter are 79,000 who are under nine years of age. Some thousands of women and girls succumb every year for want of attention, medical and surgical.

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[2] See page 158 of the Journal.

AMERICAN NEUROLOGICAL ASSOCIATION.

(Continued from No. 6, page 144.)

Eighteenth Annual Meeting, held in New York, June 22, 23 and 24, 1892, the President, **Dr. C. L. Dana**, in the Chair.

Dr. Henry R. Stedman, of Boston, presented a paper on

SEPARATE PROVISION FOR EPILEPTICS BOTH PUBLIC AND PRIVATE.

He entered a plea for the exclusive care of epileptics in special establishments on the colony plan, throughout the country. He characterized them as the most neglected class of sufferers by disease, and deplored the fact that so much attention had been paid to the pathology and medical treatment and so little to their care and protection. The amelioration, by proper medical supervision in surroundings, where their lives could be regulated, their capabilities in the way of employment developed, seemed not to attract the attention it ought. That this was practicable, the colonies for epileptics in other countries, particularly in Germany, had rendered an assured fact. The danger of these patients from exposure and accidents of various kinds was very great, while the ostracism of many of them from ordinary intercourse with their fellows, from the schools, places of worship and amusement, and, above all, the fact that they were debarred from obtaining employment on account of the malady, rendered their lot particularly hard. The danger to the community, too, from certain epileptics was also touched upon. The deplorable condition of these unfortunates in almshouses, where there were large numbers in most of the States, could not be too severely characterized. The usual practice of caring for these patients with the insane in lunatic asylums was a great disadvantage to both classes. The epileptics were not legitimate recipients of such care, and prevented the insane from receiving the full amount of attention they should rightly have, while they themselves were deprived of suitable healthful employment. Dr. Stedman also gave a short account, illustrated by charts and views, of the famous epileptic colonies at Bielefeld in Germany, which he had recently visited. He closed his remarks with the hope that some step might be taken in this country to establish like institutions.

Dr. W. N. Bullard said that in Massachusetts steps had already been taken to further the establishment of suitable special institutions for the care of epileptics. A bill had been prepared by a special committee, and presented to the proper quarter. It was hoped and believed that next year this bill would be passed, and the money be forthcoming to secure the end in view.

Dr. Frederick Peterson, who is identified as the pioneer of the present movement in New York State, urged the necessity for energetic support of the measures already taken, and said that if hopes were realized 120,000 epileptics would have opportunity for instruction and of leading useful lives.

Dr. Fisher said he hoped the movement would meet with every success. He did not know a more helpless, hopeless set of human beings than these epileptics, fed on bromides, and without occupation. Treatment did but little good. What they needed was opportunity for work.

Dr. Wm. M. Leszynsky asked if it was intended to include the care of the cases of chronic epileptic insanity. He should think these formed an undesirable class to colonize with the ordinary epileptics.

Dr. Tomlinson said there was no more unsatisfactory class of patients in institutions for the insane than the epileptics. Not one of these institutions was suitably equipped to care for them. If they were associated with the violent and demented, their lives were rendered still more uncomfortable. Unless themselves demented, the epileptics were generally alive to their condition and surroundings, and it was from them that complaints generally came.

Dr. Sachs was in favor of provision by the State for these patients, but thought that much must be done by private endeavor. There was a well-to-do class among the epileptics most difficult to dispose of. Many of the younger epileptics had no opportunity for proper education. It had seemed to the speaker that for these, there should be provided private institutions, where it would be made an object to have distinct educational advantages.

The **President** said he had made some investigations in the matter. He did not believe that there should be any State provision for epileptics, at least not at present. There were now an enormous number of defective institutions under political influence. If there were added 15,000 epileptics to the 15,000 insane, the condition of the former class would be by no means benefited. While the institutions for which Dr. Stedman pleaded were undoubtedly needed, effort should be made towards interesting private citizens in their support.

Dr. Stedman said that it would, of course, not be wise to associate the violent cases of epilepsy with those of the milder class. Buildings could, however, be provided on the colony where the severe cases could be cared for. It would not be expedient to take the mild cases from the asylums, and leave the worst cases there. He agreed as to the desirability of charitable work in the scheme, but it seemed difficult to effect the desired end in this way, from the very great lack of interest in this unfortunate class; and it was only by State care that there was hope of benefiting them.

The **President** thought that a direct opinion on the subject, by the Association, might bear weight with the legislature, and hoped that some such expression would be formulated.

The following resolution was, on motion of Dr. Stedman, then adopted: "That it is the unanimous sense of the American Neurological Association that the proper care of the epileptic class, so long delayed, be urged upon the public, upon State authorities, and especially upon all interested in the care of the sick and defective poor, whereby they may be relieved from asylums and almshouses, and may receive the required care in such separate establishments as their deplorable situations demand."

A FURTHER CONTRIBUTION TO THE PATHOLOGY OF ARRESTED CEREBRAL DEVELOPMENT,

by **Dr. B. Sachs**, of New York.

The gross cerebral lesions of childhood had received much attention of late years, and the conditions which led to the development of paralysis, of epilepsy and of idiocy, or possibly of all three conditions combined, were tolerably well understood. Among the large number of cases of this description, one small group had attracted the special attention of the speaker. It included possibly the severest form of idiocy, the palsy or epilepsy, if present, being of secondary importance. It ran in families, a number of children of the same family being similarly afflicted, the disease running the same course in each case; the children appeared to do well until about the fifth to the eighth month, when a retrograde movement would set in. All of the cerebral functions, sensory and motor gradually became impaired. The child soon became idiotic, blind, and more or less paretic, death taking place from marasmus.

The patient who was the chief subject of the paper was a sister of the child whose brain the speaker had reported upon five years ago. The history of the case was as follows: The child when first seen was thirteen months old. It was born at full term, a perfectly healthy infant, was nursed at the breast, and had appeared to be developing finely until the age of eight months; from that time on there had been steady retrogression. Close examination showed that the child could not hold up its head, nor could it sit up unless supported; it had no perception of light, the pupillary light reflex was entirely gone. There was slight sense of hearing but it could not distinguish between sounds. There was some spastic condition of the upper and lower extremities. No spontaneous movements of any sort, the child sitting listlessly on the nurse's lap. The knee-jerks on both sides were distinctly exaggerated; no ankle clonus was obtainable; plantar reflexes were also increased. The resemblance to the first child was very close in every respect, except that the paresis was more spastic in character than in the first child. The condition had grown steadily worse, and the child had died of extreme marasmus at the age of twenty months. A week before death there had been considerable fever and several convulsive seizures, but these were the only ones that had occurred during the entire course of the disease. Autopsy was performed twenty-two hours after death. In order to determine whether there was latent specific disease, the speaker had made a most careful examination of all the organs of the body and of the larger glands, with negative results. The skull was symmetrical, of good size, but was unusually thin; the fontanelles were closed, but still transparent. The dura was adherent to the skull, so that the brain had to be removed with the calvarium. As in the case of the first child, the brain was firm to the touch, almost as hard as a brain that had been in Müller's fluid for some weeks. The pia could be easily detached; and the cortex, though pale, had presented no unusual appearances. The cord had presented no abnormal conditions. Very careful microscopic studies of sections were made, of the ganglia, pons medulla and cord. The chief changes, and very marked ones, were found in the cortex, in all of its regions to an equal degree, the morbid condition being an exact reproduction of that found in the first case. In all of the sections examined not a single normal pyramidal cell could be discovered. The cell-bodies were altered either in shape or in general appearance, the cell nuclei and the nucleoli were distinct enough, but were surrounded by an altered cell-body which did not properly take the ordinary stains. The neurolgia cells appeared somewhat increased, and the tissue rather dense. The blood-vessels were present in at least the usual proportion, most of them being filled with blood; but there was no sign of any active inflammatory condition. Comparing the results of examination in this case with the facts published a few years ago, that the arrest of cerebral development was practically an arrest of cortical development, a true agenesis corticalis was made out; but by what immediate force it was brought about it was difficult to say. In the first case the history of traumatism during pregnancy was looked upon as a possible cause, but in the present instance that factor was wanting. One had to fall back upon the neurotic taint, but this could not be proven to have existed in this case. From the results of the two autopsies it might be claimed that the chief morbid changes underlying that form of idiocy which was associated with blindness and which led to a prompt and fatal termination, was to be found in the cells of the cortex. This case could hardly be dignified as a distinct type of disease, but it represented the most pronounced form of idiocy and of arrested cerebral development.

REPORT UPON THE SURGICAL TREATMENT OF EPILEPSY.

Dr. Sachs also gave a record of his joint experiences with Prof. A. G. Gerster in the surgical treatment of epilepsy. The cases which they had operated upon were selected with considerable care. They were either of distinctly traumatic origin or those in which a strictly localized convulsion pointed to a limited focus of disease. Cases of general epilepsy of non-traumatic origin were not subjected to operation. In regard to the determination of the brain areas to be operated upon, it was the custom to map out upon the skull with the greatest care, in advance of the operation, the exact site of the various divisions of the motor areas. The speaker was now of the opinion that in most cases this was quite unnecessary and that the application of the faradic current to the dura would help to localize centres much more accurately than any of the customary rules. He felt so certain of the absolute reliability of this procedure, that he would be willing to have the skull opened at any reasonable point over the motor areas, and by means of the faradic tests determine the exact location of the centres. While he was very certain that this method would be found entirely satisfactory in all cases of ordinary brain lesion, he had a suspicion that in cases of tumor, or in cases in which the brain tissue had been seriously altered by disease, the morbid brain might not respond as promptly to the current. In such cases the older method of determining the areas would have to be resorted to. The first and most notable result of the operations as recorded by these observers, was that they could not claim a single decided cure. In several of the cases there had been a marked diminution of the attacks immediately after the operation; in some the improvement had lasted a few months, but in every single case the attacks recurred after a lapse of several months or even less. If we sought for some special reason why operative procedure had accomplished so little, it was to be found in the fact that they came under notice after the epilepsy had been established for many years. It was now generally conceded that, though a focus of disease was the actual cause of the epilepsy, this epilepsy did not manifest itself, as a rule, until widespread changes had appeared throughout the entire brain. The time that elapsed between the infliction of the initial lesion and the development of these secondary changes corresponded quite accurately with the period of time between the traumatic injury or the initial disease and the development of epilepsy.

The excision of the cortical tissue after the establishment of epilepsy seemed to be of questionable merit. The only hope from surgery was in the prompt interference in all cases of traumatic injury to the skull to remove the focus of disease before secondary changes had been set up. It was the intention of these observers to continue this series of operations in the hope of being able to determine those cases in which the operation promised good results. In the state of present knowledge the prospects were gloomy, but it was the opinion that the way to cure epilepsy was to prevent its development by early operation.

Dr. Mills thought it was the general experience of most of those present that there was little new to add to the subject of Dr. Sachs's paper. They were able to report but few apparent successes. He had reported two cases at certain periods after operation, and in one the result was absolutely valueless. In the other the patient, up to the time the speaker had last heard of him, had had no return. It was now two years since the operation, prior to which, however, the patient had had but few attacks, and the disease had existed only a very few months. The speaker was surprised at the results obtained by Dr. Sachs from faradization of the dura. He had not done this much except accidentally, and then the resulting effects seemed of a general character instead of localized. He should deem faradization of the dura a somewhat uncertain guide.

Dr. Angel said that he should like to get views as to the probable after-results from pressure. In a case of his there had developed a cerebral hernia. He believed, however, that more fortunate results might have been looked for if the surgeon had insisted upon replacing the bone. He did not see the advantage of this over the tissue covering.

Dr. J. J. Putnam said that in Boston they had had some half-a-dozen cases of brain operations for epilepsy, all of them terminating in recurrences of the condition. In one case the attacks remained absent for a year and a quarter, and that patient's general condition had improved. The speaker thought that while, on the one hand, something ought to be done in early infancy to remove diseased portions of the brain, there was evidence wanting that epilepsy would be thereby prevented. Taking everything into consideration, it did not seem, except in exceptional conditions, and when patients understood that the relief would be at least but temporary, that operative procedures could be undertaken with any great enthusiasm.

Dr. P. C. Knapp had not seen any beneficial results from the treatment. From local injury there supervened a localized epilepsy, due, however, to changes in the brain; and he believed that in many of these cases by the time the first convulsion appeared there were already extensive changes in the brain itself. He had seen the condition develop after exceedingly slight trauma. The operation under the present method was not formidable, and the patient readily recovered; but the hole in the skull must be borne in mind as likely to expose the brain to future injury. It could not be denied that trephining had its dangers.

Dr. Dercum held that organic changes were probably set up by the trephine. As to the excision of portions of the cortex, he placed himself in line with the more conservative.

Dr. Sachs said that, in the event of any difficulties being met with in obtaining local muscular contractions upon faradization of the dura, there must be some mistake in the technique. It was a fact that through the dura there could be produced a series of single contractions of just these parts, the centre of which it was desired to excise. This could be done upon man just as well as upon the brain of the monkey. Dr. Knapp had spoken of localized convulsion due to general changes in the brain. The speaker did not entirely agree with this view, but thought it more likely to be localized convulsion, due to localized lesion, though there might exist changes in the brain at that time. It was a question whether operation promised much, even in traumatic cases, unless undertaken in the earliest possible stages. The question of urging surgeons to operate quickly in all such cases was the last straw he now had to cling to. He did not believe the trephine dangerous; and if abscesses of the brain developed, there was a mistake somewhere in the surgery.

(To be continued.)

Recent Literature.

Diseases of Women. A Manual of Non-Surgical Gynecology. Designed especially for the Use of Students and General Practitioners. By F. H. Davenport, A.B., M.D. Philadelphia: Lea Brothers & Co. 1892.

We are glad to know that a second edition of this valuable book is demanded within less than three years from the date of its first appearance. That such a need has existed, proves beyond a question the statement made in the preface to the first edition; namely, "That there is no book which exactly fills the gap which this one is intended to."

The rapid strides made in this department of medicine within a comparatively few years has shown the author the necessity of completely rewriting the chapters on pelvic peritonitis and pelvic cellulitis; and while the chapter on tents has been retired, the subject taking a more subordinate place, the growing importance of the treatment of diseases of the tubes has been recognized and its consideration has been extended and brought into harmony with the present views as to their pathology.

After spending a few hours most pleasantly in reading this little volume, we are impressed with the clearness of its style and the merit of its illustrations, and, in closing its pages, we arrive at the conclusion that an equally fitting title would have been, "The Diagnosis and Treatment of the Diseases of Women made Easy."

While we can heartily recommend this book to all general practitioners, we can truly say that no student of gynecology in our medical schools can afford to be without it.

Outlines of Zoölogy. By J. Arthur Thomson, M.A., F.R.S.E., Lecturer on Zoölogy in the School of Medicine, Edinburgh, etc. New York: D. Appleton & Co. 1892.

This book of six hundred pages is intended to serve as a manual which students of zoölogy may use in a lecture-room, museum, and laboratory. It is well illustrated and well printed. For one with no knowledge of zoölogy it is too condensed and technical to be interesting, but as a manual for students, or a book of reference for one who has studied zoölogy, it is well adapted.

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HEREDITARY CRIMINALS AND INSANITY.

Maudsley's researches in mental physiology and pathology, and Benedict's examinations of the brains of criminals, a score or so of years ago, directed the attention of physicians and social-science associations to a fact long recognized by students of crime, that there is a type of criminals upon whom punishment has no deterrent effect, and from whom society can secure no protection so long as they are alive and at large. They constitute a type which is peculiar to itself, whose antecedents are in crime or disease, and whose children possess the same vices of character-intellect, or whose origin is in a vicious mental organization rendered unstable from congenital or inherited defect or from injury to the brain in early life.

In families where the hereditary type of crime is found, disease and crime, both being chronic and incurable, are often found mentally interchangeable, so that what appears to be vice may be a direct descendant of what is clearly and purely disease or mental defect in parents who may be of even exceptionally high character and standards of living.

Dr. H. C. Wood[1] and Prof. E. S. Morse[2] have recently published thoughtful articles dealing with this troublesome problem. Dr. Wood well says that character is as clearly dependent upon the organization of the brain as is mental life, and that we, *a priori*, should expect to find neuropathic disorders of character as well as neuropathic disorders of intellect. Both Dr. Wood and Professor Morse recognize only one remedy for the evil and that is to isolate the neuropathic criminals for life in some public institution which is neither wholly a prison nor a hospital, whereby society shall be protected from their misdeeds and the procreation of their kind would be stopped. Dr. Wood also recommends that certain of the most dangerous of them, the homicidal, should quietly, in some way by process of law, be killed and thus be placed, as monsters, beyond the possibility of doing injury to others, thus agreeing with Maudsley, that the safety of society should be the criterion by which such cases should be judged and treated. Professor Morse suggests that the death-penalty may be done away with.

We are just now largely in the hands of the sentimentalists, who would build State hospitals for the drunkards, who would make prisons places of ease and luxury, and whose charity, praiseworthy as it is from the subjective point of view, gives to crime a vantage ground and favors the opportunity in the criminal class of indefinitely propagating its species. In England the reaction has fairly started: in this State, chiefly due to the intelligent work of the associated charities, it has begun. There is no question that society, for its own protection, will be obliged soon to demand further legislation in the same direction. This view of the case has already impressed itself upon the minds of the medical profession and of many others with regard to the treatment of inebriety. And the great difficulty of the problem is made evident by the common failure to discriminate between drunkenness, which is only a symptom of inherent brain-defect, that which should be punished, that which is susceptible of reform, and that which is the unfortunate result, in the particular individual, of inevitable wretched social conditions. The sentimental nonsense that is too often talked of them, gives the simple drunkards an excuse for not making the effort which they might make, on the ground that they are told that their drunkenness is disease.

Of course, the danger is that crime which should be punished or which is capable of being reformed by such reformatories as those at Sherborn and Concord, may be confounded with that crime which is only evidence of an incurable neuropathic taint, and for which there is no safe treatment except in ridding society of its presence forever.

It would be difficult, but quite possible, to have a commission so constituted that the dividing line could be drawn between the marked cases of the two kinds of criminals: and many of the most dangerous could thus be so placed as to be no longer a perpetual menace to society. At least the Almys and Guiteaus, some of the most violent of anarchists, and many of the most brutal of the murderers could be disposed of before they committed actual crime. With experience, too, greater diagnostic skill would come. That some such course is now desirable and will soon become necessary, there can be no reasonable doubt.

THE STUDY OF BACTERIOLOGY.

The attention of the British Medical Association has recently been called to the rapid growth and importance of bacteriological knowledge during the past few years. Professor Woodhead, in his address on bacteriology, reminds the Association that the government, usually most conservative in such matters, now requires a knowledge of bacteriology of candidates presenting themselves for examination in the Health Department, and adds that the Association cannot afford to be behindhand in such matters. He therefore urges upon them to adopt some measure whereby the members can have necessary bacteriological examinations done promptly, and not be forced to wait for the convenience of some man who is striving in his odd moments to solve some problem in which he is specially interested, and who only takes up the work thrust upon him from sheer good nature. Then, too, from this central bureau material and instructions can be sent out on application, which will enable the practitioner at the bedside to make cultures, etc., which can be later worked up in the central laboratory. By this means Woodhead is sure that the practitioner would be benefited by increased facility in making diagnoses, and the interest in the subject that would be aroused among the practitioners at large, would quickly give to the men who were interested purely on the scientific side, a large amount of valuable material with which to work.

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[1] The Relation of Neuropathic Insanity to Crime. International Medical Magazine, July, 1892.

[2] Popular Science Monthly, August, 1892.

The difficulties under which the British scientist works in being held down by an anti-vivisection law is also commented upon. It is claimed that observations embodying results which have made the great change in bacterial study were made in England before the similar work was done on the Continent, but as the investigator was so hampered by the onerous exactions of the law, he was unable to complete his work.

The Faculty of the Harvard Medical School have realized the importance of bacteriology in the new four-years' course. They have made it one of the required studies in which an examination must be passed. Henceforth no one will leave the school without being able to do the simpler methods of bacteriological research, and all will be able to appreciate and criticise in an intelligent manner, the advances which may be made from time to time in this branch of science.

The suggestion that there be some one whose duty it shall be to be ready at all times to do work and supply materials to clinicians, is one which might well present itself to our medical societies at no distant date.

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THE EVOLUTIONARY SIGNIFICANCE OF DECAY AND DEATH.

IN his lately published "Animal Life and Intelligence," C. Lloyd Morgan attempts from the point of view of evolution and natural selection to account for the introduction of death into our world. He thinks that natural decay and death may be the penalty the individual has to pay for increased strength and vitality in the earlier stages of life. Through natural selection those individuals have survived who exhibited predominant strength and vitality for a shortened period, even at the expense of natural decay and death. The increased life-power, not the seeds of decay and dissolution, was that which natural selection picked out for survival, or rather that which elimination allowed to survive.

In such ways — a short life with heightened activity being of advantage to some forms, a more prolonged existence at a lower level of vitality being essential to others — natural selection may have determined, in some degree, the relative longevity of different organisms.

This view is somewhat different from that maintained by Weissman, who believes that senility and death are no part of the natural heritage of animal life, but have been introduced among the metazoa on utilitarian grounds. "Worn-out individuals," he says, "are not only valueless to the species, but they are even harmful, for they take the place of those that are sound. Hence, by the operation of natural selection, the life of our hypothetically immortal individual would be shortened by the amount which was useless to the species. It would be reduced to a length which would afford the most favorable conditions of existence of as large a number as possible of vigorous individuals at the same time."

Seriously, the above attempted explanations of the why and wherefore of death in the animal economy seem to us to convey very vague hints. They do not suggest any good reason why an organism that can in the healthful performance of its nutritive and other functions maintain its integrity for one year or fifty, might not do so indefinitely, given a favorable environment, and serious accidents being excluded. We know octogenarians like Gladstone and Martineau who are no less useful to their species to-day than at any previous period of their lives, and they have remarkably retained their pristine strength and vitality. All that we really know of decay and death is that they come about inevitably some time, in accordance with "a law of nature," and that "dissolution is the complement and necessary sequence of evolution."

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MEDICAL NOTES.

CHOLERA. — This disease seems to be decreasing in violence in the Crimea; but it is more virulent at Teheran and Astrabad and the Caucasus, and in the northern and central portions of Russia it is increasing. Several cases "cholerine" are reported in Vienna. In Moscow many factories have been closed. The effort to cleanse thoroughly all the filthy districts of the city now being made by the authorities, is hindered somewhat by the unwillingness of the lower classes to comply with the necessary measures. The Russian official reports showed last week that the daily average of new cases in the Empire was 8,600, with 4,290 deaths. The educational establishments in St. Petersburg have been closed, and arrangements made by which medical undergraduates may be of service in the care of the sick. In Germany, thorough preparations are being made to prevent an epidemic.

Directions and suggestions have been prepared for officials, for medical men and for the people. Among the latter is the very good advice that the temptation to swallow the numerous advertised preventives be not indulged in.

Small-Pox in New York. — The Health Department has arranged for a thorough inspection of the tenement-house districts, for the purpose of finding cases of small-pox and taking the necessary precautions for preventing further spread of the disease. The infected district is not large; a systematic and careful investigation should, therefore, result in the detection of all the persons already affected.

Hot Weather, Past and Present.— The *New York Evening Post* points out that the mortality due to the recent "hot spell" is, proportionally to population, far less now than in similar hot weather twenty years ago. In one day in July, in 1872, there were 172 deaths from sunstroke, all of the cases dying within twenty-four hours. On the same day there were 357 deaths from all causes, although the city was not more than half as large as it is at present. Dr. Tracy, of the health department, attributes this change largely to the relative amount of liquor which was drunk at that time. Whiskey was the favorite drink, whereas beer and mineral waters and other milder beverages were very much less common.

Small-Pox in the United States. — At the meeting of the Illinois State Board of Health, held July 27th, it was noted in the secretary's report that small-pox had made its appearance within the last few months in Austria, Bavaria, Belgium, Brazil, Ceylon, Chili, China, Cuba, Egypt, England, France, India, Italy, the Netherlands, Poland, Russia, Spain, Sweden and Switzerland. As a natural result of its prevalence in Europe, it has been introduced repeatedly into this country. Cases are reported in New York, New Hampshire, Rhode Island, Pennsylvania, Ohio, Michigan, Wisconsin, Iowa, Nebraska, New Mexico, California, British Columbia and the Dominion of Canada, and three cases have been imported into Chicago. It may be noted in this connection that the immigration for the past twelve months has not been exceeded since 1882, which is also and significantly the date of the last small-pox pandemic, and the experience as to sanitary laches at the port of New York is similar to that recorded by Dr. Rauch concerning that pandemic. It is the infected immigrant, unprotected by vaccination and allowed to pass through the port of New York without let or hindrance who introduces small-pox into this country.

Immigration this Summer. — It is reported from Germany that the emigration, principally to the United States, will be very large this summer from different parts of Russia, from northern Germany and especially from Poland. That the Russian authorities are not sorry to lose their subjects is evident from the fact that those who return are very harshly treated, are often sent to Siberia or drafted into the army.

Vital Statistics of New York City for 1891. — According to the recent report of the Board of Health, the total number of deaths in New York City for the year 1891 was 43,695, which is equal to the death-rate of nearly twenty-six in a thousand, against twenty-four and a half the previous year. Although the epidemic of influenza was undoubtedly responsible in part for the high death-rate, the record from scarlet fever and measles was unusually high. Of the former 1,220 persons died, and of the latter, 1,663; as against 408 and 730 in 1890.

A Kleptomaniac. — According to the *Edinburgh Scotchman*, a dentist of independent means was prosecuted recently by a Scotch railway company for taking some forks and spoons from a luncheon basket which he found standing at night on the platform. When arrested, he offered the officers money and begged them to let him go, saying that he was ruined. At the trial medical testimony was introduced to establish these propositions: That "the accused is of eccentric habits, and suffers from sleeplessness, while two years ago he had a paralytic stroke; and his mother died of apoplexy." The summons was dismissed after payment of costs by the accused man.

BOSTON AND NEW ENGLAND.

Death-Rate in Boston. — From January 1st to August 1st there were about one thousand more deaths this year than last. During July there were 1,111 deaths, a number larger than in any previous summer month when no epidemic prevailed. Of these 444 were babies under one year of age, and a little more than half children under five. From cholera infantum 269 died, from consumption 137. There were 31 fatal accidents.

The Third Bulletin of the Harvard Medical School Association, which has just been issued, contains, in addition to a list of the officers and the Constitution, a report of the second annual business meeting. Then follows the account of the second annual dinner. A letter was read from President Low, of Columbia. Dr. J. T. G. Nichols read the report of the Committee on the Harvard Medical School. Speeches, which have already appeared in the Journal, were made by President Eliot, Dr. Pepper of Philadelphia, Dr. Welch of Baltimore, and Dr. J. C. White. A provisional announcement of the graded four years' course of instruction, to go into effect September, 1892, closes the bulletin.

The Murder in Fall River. — The manner in which Borden is supposed by the authorities to have been murdered by his daughter is graphically described in the formal complaint. Although differing from the description which a medical man would be likely to give, it is probably, from a purely legal standpoint, an accurate account. "The city marshal of Fall River, in said county, in behalf of said Commonwealth, on oath, complains that Lizzie A. Borden of Fall River, in the County of Bristol, at Fall River aforesaid, in the county aforesaid, on the fourth day of August, in the year of our Lord 1892, in and upon one Andrew

J. Borden, feloniously, wilfully and of her malice aforethought, did make assault, and that the said Lizzie A. Borden, then and there with a certain weapon, to wit, a hatchet, in and upon the head of the said Andrew J. Borden then and there feloniously, wilfully and of her malice aforethought did strike, giving unto the said Andrew J. Borden then and there, with the hatchet aforesaid by the stroke aforesaid in manner aforesaid, in and upon the head of the said Andrew J. Borden one mortal wound, of which said mortal wound the said Andrew J. Borden then and there instantly died. And so the complainant aforesaid upon his oath aforesaid further complains and says that the said Lizzie A. Borden the said Andrew J. Borden, in manner and form aforesaid, then and there feloniously, wilfully and of her malice aforethought did kill and murder."

NEW YORK.

A New Hospital for Consumptives. — Work has been begun on the Seton Hospital for Consumptives, which, when finished, will be the most complete institution of its kind in the country. It is to be under the charge of the Sisters of Charity of the Roman Catholic Church, and the undertaking is due to the benevolent zeal of Sister Irene, the projector and head of the New York Foundling Asylum. The building will be erected at Spuyten Duyvil, on very high ground some distance back from the Hudson, and the estimated cost is $300,000. The grounds purchased are 600 by 500 feet, and the hospital will have a frontage of 200 feet, with a depth of 140 feet. Its style will be Italian renaissance, and the principal feature of the exterior of the building will be a large portico in the centre and broad piazzas on each floor. In its internal arrangements it is designed to make this hospital the most notable in the world, and in its construction and system of ventilation every effort will be made to secure the prevention of the retention of diseased germs. Besides a large solarium on the upper floor there is to be a special antiseptic chamber the air of which can be charged with oxygen or any medicinal agent desired. Throughout the building in general also medicated vapors can be forced by the system of ventilation adopted. The hospital will contain a large number of private rooms, and great care will be taken to prevent patients in the incipient stage of phthisis from associating with advanced cases. The institution is named in honor of Mrs. Elizabeth Seton, the founder of the Order of the Sisters of Charity in this country.

Superintendent of the Insane Department in Brooklyn. — Dr. Wm. H. Sylvester has been appointed Superintendent of the Insane Department of the city of Brooklyn, which includes the asylums at Flatbush and St. Johnland. He is a graduate of Dartmouth Medical College, Class of 1878, and has had a large experience in the treatment of insanity in the Butler Asylum at Providence, R. I., the New York City Asylum on Blackwell's Island, the Worcester Hospital, the Willard State Hospital at Seneca Lake, and the Vermont State Asylum.

Miscellany.

BOSTON SEWERS.

During the past few weeks it has become very evident to all residents of Boston who have normal sense of smell, that something is wrong in the drainage of the city or of neighboring towns. The Back Bay district suffers the most, and the fault here lies partly in the condition of Charles River, and partly in certain low-lying lands. Complaints are also received from East Boston, the neighborhood of the Neponset River, and Brighton. By request of the mayor a letter has been written by the city Board of Health and one by the Superintendent of Streets and Sewers, describing the condition of these defects, and suggesting improvements. According to the Board of Health the nuisances complained of are, for the most part, occasioned by imperfect sewerage, where sewers exist, by the lack of sewers, and by low lands whereon stagnant water exists, or where the tides have polluted flats exposed to the atmosphere.

The nuisance complained of in the Charles River, arising principally from the discharge of sewage therein and the exposure of the deposits at low tide, is to be remedied only by the construction and use of the intercepting sewer now in process of construction by the State authorities. The intercepting of the sewers now discharging into the river on the north side and into the Mystic, as well as upon the East Boston flats, must await the completion of the intercepting sewer on that side, which is to discharge at Deer Island. The private drains now entering the Charles River from residences on Beacon Street, contribute more or less to the pollution of the river bed. A hearing was given to the owners of these residences recently, for the purpose of agreeing upon a general plan of action looking to the intercepting of these private drains, but, as many of the residents were out of town for the summer, a postponement was asked for and granted until November. The Neponset River can be relieved from sewage only by the extension of the intercepting system.

In the vacant lots on the Back Bay whereon nuisances have been found to exist by reason of stagnant water, a large amount of filling has been done during the present season, and the more offensive pools are now nearly filled. The rapid transformation of this territory by the building of new streets and the cutting off of the old waterways are constantly adding to the number of these places, and they will not cease to be a source of more or less nuisance until the entire territory is filled to grade. The statutes allow the Board of Health, after due hearing, to proceed with the filling or draining of wet, rotten or spongy lands where nuisances are found to exist, and the expenses of the same can be assessed upon the owner.

The Board believes that, should cholera reach this country this season, the sanitary condition of Boston at the present time is such as to prevent its obtaining any foothold here, and this department is prepared to meet it at any moment.

The Superintendent of Streets and Sewers reports that there are now left in the city proper about twelve miles of old wooden sewers, which are leaky and in a poor sanitary condition. The replacing of these sewers would cost about $700,000, and would require three years for construction. Concerning the emptying of the Brighton sewers into the Charles River, the recent completion of the metropolitan drainage system through Brighton now affords an opportunity to convey the sewage of this district to Moon Island. Three connections of sewers have already been made, and the department is now engaged on plans for the remaining sewers, which will be completed by January 1, 1893. Concerning the nuisance complained of at Neponset, caused by sewers emptying into the Neponset River, the city of Boston is now engaged in the construction of an intercepting sewer, which can be completed in the course of another year. The metropolitan State drainage system should be in operation in the course of the next three years, and would tend to do away with nuisances now existing along the Charles and Mystic Rivers.

The amount spent by the city in 1891 for the sewer department was larger than ever before, and during the current year will be still larger, amounting probably to nearly a million dollars.

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THERAPEUTIC NOTES.

Sulphonal Poisoning.— Dr. J. B. Marvin[1] describes a case where death followed two hundred and forty grains taken in five doses, two in the afternoon and three the next morning. On the following evening the patient was sleeping heavily, pulse under 100, respiration 32. When attempts were made to rouse him he would yawn and turn over. The next morning his sleep was more profound, the respiration more rapid, the pulse faster and weaker; both pupils reacted to light, and there was no paralysis; the secretion of urine was abundant. The treatment was nitro-glycerine hypodermically.

Resorcin.— Sonnenberger[2] favors the use of resorcin in the acute digestive disturbances of children where vomiting is obstinate. He employed this formula:

℞	Resorcin puv.	gr. ii.-iv.
	Infus. anthemid.	℥ iiss.
	Tr. opii. camph.	gtt. i.-ii.
	Syr. aurant. cort.	℥ ss.

Sig: One half teaspoonful every one or two hours.

No toxic effects were observed from these doses, provided the drug was pure.

The resorcin does not appear to lessen the diarrhœa, but to control the vomiting.

Bicarbonate of Potassium as an Expectorant. — Hunt[3] advises the use of this remedy instead of the chloride of ammonium in the catarrhal conditions of the respiratory tract in children. To a child one year old he gives one-twentieth of a grain every fifteen or thirty minutes till some improvement is shown. Very rarely it acts as an emetic. In that case he diminishes the dose but does not change the interval. In tablet triturates it is found to be less irritating than in any other form.

Ichthyol[4] (ammonium ichthyol sulphonate) obtained from the dry distillation of a bituminous quartz found in the Tyrol, containing fossil fish remains in great quantities, has, for sometime back, been largely prescribed for external use, but it has only recently begun to find favor as an internal remedy. Its peculiar and unpleasant odor is greatly against it, and necessitates it being given in capsules, or otherwise disguising it. About ten per cent. of oil of citronella has been used to accomplish this end, and proves of additional service in rheumatic cases, as it alone has been used with good effect. Its external use has been further pushed during the past year with somewhat varied success. Its antiseptic property is unquestioned. When given internally in conjunction with the external use, it is said to improve the digestion and appetite and makes a decided gain in the general health.

Camphor. — Dr. Karl Rosaer in *Zeitscrift für Therapie* recommends liquid paraffine as a solvent for camphor for subcutaneous injection; on warming, a clear solution is obtained which will keep a long time.

Pyoktanin for Malignant Growths. — Diakonoff[5] reports three cases of inoperable new growths treated by injection of an aqueous solution of methyl-violet, at first 1 to 1000, later, 1 to 300.

He concludes that it has the power of destroying malignant new growths, though its action is not energetic, its use is free from danger; it is indicated only in cases which are not operable.

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Correspondence.

PRESENTATION TO SIR GEORGE BUCHANAN, F.R.S.

Washington, D. C., August 9, 1892.

Mr. Editor: — The following is a copy of a circular inviting subscriptions to a fund to present Sir George Buchanan, F.R.S., late Medical Officer of the Local Government Board, some permanent memento of the esteem in which he and his work are held, which have been sent to me by the Honorable Secretaries of the Committee, with the request that the matter be brought to the attention of sanitarians in this country.

> Sir George Buchanan has lately resigned the post of Medical Officer of the Local Government Board. A Committee has been formed with a view to forwarding a movement for enabling those interested in Public Health throughout the country to give expression to the high estimation in which they hold the important work which Sir George Buchanan has done and for affording some opportunity for the recognition of his conspicuous services in the cause of preventive medicine.
>
> Under these circumstances it has been decided to open a Subscription List (not to exceed two guineas from each contributor) with a view to presenting to Sir George Buchanan some permanent memento of the esteem in which he and his work are held.
>
> The Council of the Society of Medical Officers of Health has expressed a desire to be associated with the Committee in inviting subscriptions to the Fund.
>
> J. S. Bristowe, *Hon. Treasurer.*
> W. H. Hamer,
> Ladywell, 69, Dartmouth Park Hill, London, N.W. } *Hon. Secs.*
> J. C. Thresh, The Limes, Chelmsford, Essex.

Any gentleman desiring to subscribe to the proposed memorial to Sir George Buchanan can send the contribution direct to the Honorable Secretaries mentioned in the circular, or to Dr. John S. Billings, Army Medical Museum and Library, Washington, D. C., who has been authorized to collect funds for the purpose in the United States.

Very sincerely yours, J. S. Billings,
Surgeon, U. S. A.

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[1] Medical and Surgical Reporter, July 9th.
[2] Allegemeine Medicinische Central Zeitung.
[3] Brooklyn Medical Journal, August.
[4] Squibb's Ephemeris.
[5] Annals of Surgery, July, 1892.

RECORD OF MORTALITY

For the Week ending Saturday, August 6, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	1181	518	28.00	5.76	21.28	2.64	.72
Chicago . . .	1,250,000	—	—	—	—	—	—	—
Philadelphia .	1,092,168	693	284	25.20	6.86	22.20	2.24	1.54
Brooklyn . .	955,333	604	308	31.45	6.80	26.18	.85	.68
St. Louis . . .	477,873	185	84	26.46	5.94	23.76	1.08	.54
Boston . . .	469,645	259	128	28.86	10.92	24.61	1.17	—
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	117	38	17.30	8.50	11.90	1.70	.85
Cleveland . .	281,353	134	96	44.40	5.18	39.96	2.96	1.48
Pittsburg . .	255,000	—	—	—	—	—	—	—
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	158	67	35.28	6.82	28.35	2.52	2.52
Nashville . .	87,754	40	9	35.00	12.50	22.50	—	7.50
Charleston . .	56,048	50	21	20.00	14.00	14.00	—	2.00
Portland . . .	40,000	16	7	25.00	12.50	25.00	—	—
Worcester . .	92,313	31	17	41.99	3.23	38.76	—	—
Lowell . . .	82,455	45	25	42.18	4.44	37.74	—	2.22
Fall River . .	82,128	62	42	51.52	3.22	45.08	1.61	1.61
Cambridge . .	74,644	40	23	40.00	7.50	32.50	7.50	—
Lynn	60,809	33	24	45.45	3.03	45.45	—	—
Springfield . .	47,052	26	14	42.35	3.85	30.80	—	7.70
Lawrence . .	45,910	19	13	47.34	10.52	47.34	—	—
New Bedford .	44,947	37	23	56.70	5.40	56.70	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Salem	31,495	34	26	61.74	2.94	61.74	—	—
Haverhill . .	30,065	11	5	45.45	18.18	45.45	—	—
Chelsea . . .	29,479	13	7	15.38	15.38	15.38	—	—
Fitchburg . .	27,444	11	9	72.72	—	62.63	—	9.09
Gloucester . .	26,805	8	2	37.50	—	37.50	—	—
Malden . . .	26,783	11	4	36.36	9.09	36.36	—	—
Newton . . .	26,498	5	2	—	—	—	—	—
Brockton . .	26,464	—	—	—	—	—	—	—
Taunton . . .	26,464	17	13	—	—	—	—	—
Waltham . .	20,942	5	1	20.00	20.00	20.00	—	—
Pittsfield . .	18,294	3	2	66.66	—	66.66	—	—
Quincy . . .	17,930	1	0	—	—	—	—	—
Northampton .	15,684	15	8	73.26	—	73.26	—	—
Everett . . .	14,745	4	3	75.00	—	75.00	—	—
Newburyport .	14,031	12	6	50.00	33.33	50.00	—	—
Amesbury . .	13,561	5	3	60.00	—	60.00	—	—

Deaths reported 3,900: under five years of age 1,827; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,205, consumption 270, acute lung diseases 186, diarrhœal diseases 996, diphtheria and croup 68, typhoid fever 41, whooping-cough 35, measles 24, scarlet fever 15, cerebro-spinal meningitis 14, malarial fever 9, erysipelas 3.

From whooping-cough New York 16, Philadelphia 8, Brooklyn 7, Washington 3, Fitchburg 1. From measles New York 15, Brooklyn 7, Philadelphia and Lowell 1 each. From scarlet fever New York and Brooklyn 3 each, St. Louis, Boston and Fall River 2 each, Philadelphia, Cincinnati and Springfield 1 each. From cerebro-spinal meningitis New York 7, Washington 4, Brooklyn, Worcester and Fall River 1 each. From malarial fever Brooklyn 3, Philadelphia, Nashville and Charleston 2 each. From erysipelas New York, Philadelphia and Brooklyn 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 6, 1892, TO AUGUST 12, 1892.

Leave of absence for four months is granted Major Charles Smart, surgeon, U. S. A.

The leave of absence granted Colonel Charles Page, assistant surgeon general, U. S. A., is extended one month.

The extension of the leave of absence granted Captain William C. Gorgas, assistant surgeon, U. S. A., is further extended twenty days.

Leave of absence for twenty-one days, to take effect upon the completion of the bond of Captain Harry O. Perley, assistant surgeon, U. S. A., is granted Colonel Charles T. Alexander, assistant surgeon-general, U. S. A.

SOCIETY NOTICE.

The Tri-State Medical Society of Alabama, Georgia and Tennessee, will be held in Chattanooga, Tenn., October 25th, 26th and 27th.

Frank Trester Smith, M.D., *Secretary*,
Chattanooga, Tenn.

RECENT DEATHS.

Benjamin W. McCready, M.D., died in New York, August 10th, aged sixty-eight years. He graduated from the New York College of Physicians and Surgeons in 1835. For many years he was physician to Bellevue Hospital, and from 1862 to 1875 Professor of Materia Medica and Therapeutics in Bellevue Hospital College. He was a charter member of the New York Medical and Surgical Association, and a member of the Academy of Medicine.

Peter Bryce, M.D., superintendent of the Alabama Lunatic Asylum at Tuscaloosa, died August 14th.

Samuel Lane, F.R.C.S., formerly surgeon at St. Mary's Hospital, London, died August 2d, aged ninety years.

BOOKS AND PAMPHLETS RECEIVED.

The Lacerated Cervix. By W. G. Bogart, M.D., Chattanooga. Reprint.

Prospectus of the London Post-Graduate Course. Third Year. Winter Term. 1892.

Fourth Annual Report of the Commissioner of Health of Milwaukee. April, 1892.

Bromide of Ethyl as an Anæsthetic. By E. H. Kuykendall, Chattanooga, Tenn. Reprint.

Tenth Announcement of the Medical Department of Niagara University, Buffalo, N. Y. Session of 1892–93.

Evolution, from a Scientific Standpoint. By John Pope Stewart, M.D., of Attalla, Ala. Reprint. 1891.

University of Denver Medical Department. Twelfth Annual Announcement of Lectures. Season of 1892–93.

Hysteromyomectomy, with a Report of Four Cases. By Hunter Robb, M.D., Baltimore. Reprint. 1892.

Should not Oculists be more Careful in Prescribing Colored Glasses? By W. L. Bullard, M.D., Columbus, Ga. Reprint.

Pulmonary Phthisis in its Relation to Insanity and to Other Neuroses. By Thomas J. Mays, M.D., Philadelphia. Reprint. 1892.

The Surgical Treatment of Neuralgia of the Fifth Nerve. By William Rose, M.B., F.R.C.S. London: Baillière, Tindall & Cox. 1892.

Report on Abdominal and Pelvic Surgery, Including Thirty-two Successful Cases of Laparotomy. By William H. Wathen, M.D., of Louisville, Ky. Reprint. 1892.

The Transactions of the Second Annual Meeting of the Association of Military Surgeons of the National Guard of the United States. St. Louis, Mo. April, 1892.

Proceedings of the Third Annual Meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee, held in Chattanooga, Tenn., October 27, 28 and 29, 1891.

Book on the Physician Himself, and Things that Concern his Reputation and Success. By D. W. Cathell, M.D. Tenth edition. Philadelphia: The F. A. Davis Co., Publishers.

Note on the Hysterical Concomitants of Organic Nervous Disease. Medical Manhood and Methods of Professional Success. By C. H. Hughes, M.D., St. Louis. Reprints. 1892.

Colotomy: Inguinal, Lumbar and Transverse, for Cancer or Stricture, with Ulceration of the Large Intestine. By Herbert W. Allingham, F.R.C.S. London: Baillière, Tindall & Cox. 1892.

Cancer of the Mouth, Tongue and Œsophagus: Their Pathology, Symptoms, Diagnosis and Treatment. By Frederic Bowerman Jessett, F.R.C.S., Eng. London: Baillière, Tindall & Cox. 1892.

Henry Ingersoll Bowditch, M. D.

THE MEMORIAL MEETING OF THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE OF THE MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.

ALBERT N. BLODGETT, M.D., SECRETARY.

A Special Meeting of the Society was held on March 16, 1892. Drs. F. Minot, J. C. White, C. F. Folsom, F. C. Shattuck, and R. W. Lovett constituted the Memorial Committee.

DR. FREDERICK I. KNIGHT

read the following sketch of Dr. Bowditch's life:

Dr. Henry Ingersoll Bowditch was born in Salem, Mass., August 9, 1808. His father was Nathaniel Bowditch, the eminent mathematician, and his mother Mary Ingersoll; parents who have transmitted in a remarkable degree to their descendants the honesty and strength of character peculiar to them. The father, as is well known, educated himself in hours which by others were taken for rest or recreation; and this hard experience led to restrictions in the education of the children, which, though some of them were afterwards regretted by the latter, may have been on the whole beneficent. As one instance, they were never allowed to devote any time to music, the study of which, considering the hard struggle in life before them, the father considered a waste of time, and likely to lead to greater waste in the enjoyment of it. That this and other restrictions were imposed with considerate tenderness is abundantly shown by the thorough respect and obedience of the children.

The only school in Salem attended by Henry, of which I have any positive knowledge, was the Salem Private Grammar School situated on Green St., which was kept at the time by John Walsh, son of Michael, of arithmetic fame. I know that Dr. Bowditch attended here in 1822, for I have seen a programme of an exhibition at the school in this year, on which he appears for a Latin dialogue with J. B. Bigelow. It is interesting to notice on the same programme the names of Henry W. Pickering, of this city, and Benjamin Peirce, late Professor in Harvard College. The fact that Dr. Bowditch was selected for a Latin dialogue argues, I think, that he was at this time a good deal more of a student than he used to represent himself. He was, however, not a "house-rat" (as we were accustomed to call boys who stayed in with their books all the time), but was a thorough boy, fond of outdoor exercise, full of life and innocent fun. On a photograph of the typical Salem house in which he was born and lived, he has marked an upper middle window as one from which he and his brothers used to pelt with beans the promenading boys and girls on Sunday, they themselves being allowed out on that day only to go to and from church. There is a tradition also of the subject of our sketch having had a hand in introducing some fire-crackers into a certain old lady's tea-pot.

The family moved to Boston in 1823, Dr. Nathaniel Bowditch having been invited to the Presidency of the Massachusetts Hospital Life Insurance Company, which afterward under his management attained such wonderful growth and prosperity. In Boston Henry attended the Public Latin School, entered Harvard College as a sophomore, and graduated in the class of 1828.

Dr. Bowditch always represented himself as an indifferent student, as "students" were estimated in those days, that is, he was not a dig for recitation marks. None of his teachers appear to have excited any enthusiasm or admiration except Prof. Charles Follen, to whom he was always grateful for having suggested and urged upon him the study of the German language. This was very likely the only personal interest which was ever shown him by any member of the Faculty. However this may be, and student or no student by the guage of the day, I am sure Dr. Bowditch was busy at something, for a more industrious man I have never seen. He was always occupied. I have wondered whether the non-use of tobacco might not have had something to do with this, knowing how often it serves its devotee as both companion and occupation. He apparently had one of those brains rested by change of work. He never sat still musing, or walked up and down thinking out the solution of any subject, but he thought with pen in hand.

After taking his academic degree, Dr. Bowditch entered the Harvard Medical School. What determined his choice of a profession, I have not learned, except that his mother was desirous that her sons should take different professions, and he felt himself more inclined to medicine than to theology or law. There are now few living associates who can tell us of his immediate, enthusiastic devotion to his profession when once chosen, but of the fact there is no doubt. The medical Faculty at this time consisted of Drs. Walter Channing (Dean), John C. Warren, James Jackson, Jacob Bigelow, and John W. Webster. In September, 1830, he entered the Massachusetts General Hospital as medical house-pupil, and served one year, his colleague on the surgical side being Thomas R. Thomas, Jr. He received his medical degree in 1832, and went to Paris, as was the custom in those days, to complete his medical education. It was natural that a man of his mind and home training in regard to exact truth should have been soon attracted to Louis and his teachings, and eventually to have been thoroughly devoted to them. The numerical method as it was called, the recording and analyzing of symptoms in a large number of cases without any preconceived theory of the disease, simply the recording of facts, and drawing logical deductions from them, was then being expounded by Louis, whom Dr. Bowditch delighted to call master. So thoroughly did Dr. Bowditch always practise this method, so thoroughly did he identify himself with it, and so consistent was it with his own character, that one can hardly help feeling that, even if he had not had the advantage of Louis's teaching, he would have adopted such a method himself. His friendship with Louis was kept up till the death of the latter. If asked what he had learned abroad that was especially valuable, he, while admitting the many things in clinical and pathological work which were new to him, would undoubtedly have said, "What I value most is the proper method of observation and recording of cases."

Another great good fortune came to Dr. Bowditch in Paris, in that it was here he first met Miss Olivia Yardley, who was destined a few years later to become his bride; for Mrs. Bowditch had all the qualifications for his complement; whether it was in managing the exchequer, making drawings of his microscopical preparations, or in the exercise of accomplishments which go to make up the amenities of life.

After a residence of two years in Paris, he returned to Boston (in 1834), and established himself in practice. His office was at first on Bedford Street, soon afterwards on Otis Place.[1]

With enthusiasm he devoted himself to the propagation of the teachings of Louis, and founded in 1835 a society for medical observation, on the plan of the one in Paris, for practice in the correct observing and recording of cases. Its membership was small, chiefly medical students, the only physicians at its organization being Dr. John Ware and Dr. Bowditch. This was discontinued in 1838.

Soon after this, Dr. Bowditch was associated with Drs. Marshall S. Perry, Charles H. Stedman and Henry G. Wiley in a private medical school. They had about fifteen students. There were recitations and clinical instruction. The recitations were held at an infirmary for chest diseases, with which most if not all of the teachers were connected. Dr. Stedman was connected with the Marine Hospital at Chelsea, and the students went there regularly. Dr. Bowditch, in addition to his duties as admitting physician to the Massachusetts General Hospital, made the autopsies. These the students of his private school were permitted to witness. About 1843, Drs. Wiley, Perry and Stedman were succeeded by Drs. Geo. C. Shattuck, Wm. E. Coale and Samuel Parkman. Dr. Bowditch retained the position of admitting physician to the Massachusetts General Hospital from 1838 to 1845. Exactly how long the private school was continued, I do not know.

Dr. Bowditch's first publication was a revision and alteration of Cowan's translation of Louis's "Pathological Researches on Phthisis," in 1836. His second was in 1838, a translation of Louis on "The Proper Method of Examining a Patient, and Arriving at Facts of a General Nature." His next was a long and spirited reply to some animadversions of Dr. Martyn Paine, of New York, on the writings of M. Louis. In 1842, he published probably the first case of trichina spiralis ever reported in this country. This was illustrated by excellent steel cuts, the drawings for which were made by his young wife from his own microscopic preparations.

From the moment of his settling in Boston Dr. Bowditch interested himself in all that concerned the welfare of his fellow-man. With Charles F. Barnard, John L. Emmons and others he founded the Warren Street Chapel for the education and elevation of the young. He was superintendent of its Sunday-school, and endeared himself to every one in it. The children went to his office every Saturday afternoon for books, and the young men used to meet him on the Common at five o'clock in the morning to play cricket, they being clerks in stores and not able to go at any other time. One of them, however, says in a recent letter that he used to steal time from his dinner hour to call for a talk with Dr. Bowditch, who at that time was not oppressed with patients and was always glad to see him. He well remembers that Dr. Bowditch was quite elated that his first year's income equalled that of Dr. John Ware's first year, namely, seventy-five dollars. Dr. Bowditch kept up his interest in the children of the Chapel long after they left it. One of them writes me that some years after leaving she received the present of a book from him, with a note saying he had intended to buy her a nice one, but on consulting his purse he found he could not do so and pay honest tradesmen, so he sent her a book called "Best Hours," which he for a long time had kept by his own bedside.

Dr. Bowditch had but just settled in Boston when the mobbing of Garrison occurred, and henceforth till the proclamation of emancipation he was an active, zealous, uncompromising anti-slavery man. He was the intimate friend of Sumner, Andrew, Bird, May and the other leaders of this at that time unpopular cause.

In 1846, the visiting medical staff of the Massachusetts General Hospital, which at that time consisted of three physicians, namely, Drs. Jacob Bigelow, Enoch Hale and J. B. S. Jackson, was augmented by the addition of three more, namely, Drs. Henry I. Bowditch, John D. Fisher and Oliver Wendell Holmes. He served here eighteen years. Any one who ever made a visit with him knows how thoroughly he did his duty both to the hospital and to the patient.

In this year (1846), Drs. Henry I. Bowditch, Charles E. Buckingham, George Derby, John D. Fisher, Samuel Kneeland, Jr., Fitch E. Oliver, Wm. H. Thayer and John B. Walker revived the Society for Medical Observation. This society in its early days approximated more nearly to Dr. Bowditch's ideal of what a medical society should be than any we have had since. The members were accustomed to sit around a table with pencil and paper taking notes, and when the reader of a paper had finished, they were called upon to criticise. "The criticism," as one of the original members, Dr. Wm. H. Thayer, of Brooklyn, writes me, "was courteous but unsparing, and from time to time some member resigned, being unable to stand it." Dr. Thayer also allows me to quote from a letter written to him, while temporarily absent from Boston, by Dr. Bowditch. The date of the letter is April 26, 1846. In it he says: "We have had one meeting of the Society for Medical Observation. Doctor, I have fears of that society falling into the common routine of talking societies. At this meeting we burst away constantly into a general, very desultory conversation; and when I took hold of the presented case, and said everything about it that was in my heart, whether severely critical or blandly complimentary, I saw the members were unprepared for such plain speaking. Now the doctor (that is, one of *us*) does not want another society for that purpose. He can get enough of *social conversation* at the other society; and many other things of great importance he learns there: but he does not get sterling, true criticism, a perfectly transparent truthful criticism on every paper presented, such as he *hoped* to get at the Observation Society. In our Society we must get over *desultory conversation*: read strict papers, and stick closely to them, and let mere opinions and guesses go elsewhere. Each member must not only submit to the severest criticism, but he must be *thankful for getting it*. Otherwise I would not give one farthing for our Society, and, for one, I frankly confess that I shall leave it, and attend the '*conversazioni*' at Tremont Street."

Dr. Bowditch's contributions to medical literature now became more important. It is sometimes said that a man does his best work before forty years of age, but that could hardly be said of medical men of that time, certainly not of Dr. Bowditch. They did not rush into print prematurely, but waited till experience gave them the right to speak with authority. He published "The Young Stethoscopist" in 1848, when he was just forty, and his first communication on "Paracentesis Thoracis" in 1851. Probably his communications on this subject, appearing at intervals during the remainder of his active professional life, are more widely known, and have done more to extend his reputation than anything else he has written. While Dr. Bowditch never thought of claiming the discovery of the method of removing fluid from the chest by suction, he appreciated at once the value of the method, and made such practical use of it as finally, after constant iteration and reiteration in societies and medical journals, to compel the profession not only of this country but also of the whole civilized world to the same appreciation of it.

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[1] Since writing the above, I have been informed by one of our profession, who settled in Boston about the same time, that he remembers visiting Dr. Bowditch, soon after his return from Paris, at an office on Washington Street, near the Marlboro' Hotel.

In 1852 and afterwards, Dr. Bowditch gave courses of instruction in auscultation and percussion in the Boylston Medical School. This school, as some of my hearers will remember, was a private school, which, however, gave a complete course of medical education, had its own dissecting-room, infirmary, etc., but did not confer degrees. Dr. Wm. H. Thayer, who was one of the founders and a teacher in this school till he left the city, says that it was established for the purpose of getting more thorough hard work out of medical students than was the fashion of the time, and to encourage the graded system of study. If the Faculty had held together, the right to confer degrees would undoubtedly have been granted them by the Legislature. They did not hold together, and the school was discontinued in 1855. A school whose Faculty consisted of such men as Chas. E. Buckingham, Edward H. Clarke, John Bacon, Jr., Geo. H. Gay, Henry W. Williams, Henry G. Clark and John C. Dalton, Jr., would surely have been a formidable rival of the Harvard Medical School.

Dr. Bowditch was appointed to the Jackson Professorship of Clinical Medicine in 1859, succeeding Dr. George C. Shattuck, who was transferred to the Hersey Professorship of the Theory and Practice of Medicine, vacant by the resignation of Dr. John Ware. He continued in this chair eight years. As a teacher he had as little capability for oratorical display as his master, Louis, but his careful examination of patients and analysis of symptoms rendered his exercises very attractive and highly valued by students. He continued and took great interest in the clinical conference, which had been introduced by Dr. Shattuck, and which became and has remained to this day a highly esteemed feature of clinical instruction at the school.

More than by his teaching, however, by his utterly unselfish zeal in his search after truth and the welfare of his patients, has Dr. Bowditch influenced those who came near him, and to-day hundreds are working on a higher level in consequence of their having known him.

In 1852, Dr. Bowditch wounded his hand in an obstetric operation. Septicæmia and a long illness followed. This caused him to give up midwifery, and as years went on, although he did not call himself a specialist, and although he continued to see all kinds of medical cases, especially in consultation, his practice became more and more limited to thoracic diseases, on which he had now become an authority.

In 1862, he published his exhaustive investigations on soil-moisture as a cause of consumption in Massachusetts, which, with the subsequent work of Buchanan, in England, in the same field, has proved beyond question that soil-moisture may be an important factor in the production of the disease.

During the Civil War he did everything in his power for the cause of the government and good of the soldier. Especially did he labor hard for the adoption of a proper ambulance system in our army, which was finally accomplished, largely through his efforts. He gave his first-born to the army, and bore his death in battle with heroic resignation.

My personal acquaintance with Dr. Bowditch began in 1863, when I joined the Harvard Medical School. I saw him especially at the clinical conferences which he held, assisted by Drs. Ellis, Minot and others. Here was first exhibited to me one of the many fine qualities of Dr. Bowditch's character — magnanimity to an opponent. A medical student, able, but precocious and impudent, who was a candidate for the position of house-pupil, had taken upon himself to criticise Dr. Bowditch in a very contemptuous manner in the conference, and to continue his animadversions after leaving the conference, in a way which came directly to Dr. Bowditch's ears. It was thought by all that he would not get a vote from the staff for the position. He got one, and that was from Dr. Bowditch! who said that he considered him the most capable of the applicants.

The next year, feeling that I would like an opportunity to learn something more of auscultation than I was getting in the wards of the hospital, and having heard that Dr. Bowditch had at times taken students as clinical clerks in his office, I went one afternoon to his house on Boylston Street, where he had been established since 1859, and found the waiting-room full of patients and the doctor rather "in a mess." As soon as I made known my errand he put a record book in my hand, and set me at work getting histories of cases. There are others here to-night who have held this position in Dr. Bowditch's office, and who can testify how instructive it was. We took the histories of all the men and many of the women, and when it came to the physical examination in the inner office, from how few were we excluded! He would call us in and ask us to examine, as if for consultation, except in case of some very few ladies. Dr. Bowditch thoroughly recognized a mutual obligation in this arrangement, and never begrudged the time to discuss and explain anything which was of interest. Not the least of the advantages gained by a student from being present in the office of a successful practitioner was the knowledge of how to deal with and talk to patients. In the latter part of March, 1867, I began private practice in Dr. Bowditch's office, to take charge of patients requiring laryngoscopic examination and treatment, and of other patients during his absence. During the twelve years I was thus associated with him there was never, to my recollection, an unpleasant word passed between us!

From this time on Dr. Bowditch devoted himself to private practice and State medicine, excepting a short service as visiting physician at the City Hospital. He was largely instrumental in the establishment of the State Board of Health in Massachusetts (the first one in the country), and was its chairman for ten years. During this time many reforms were carried through against determined opposition, the greatest of these being the abolition of private slaughter-houses in our neighborhood, and the establishment of the Abattoir at Brighton. He was also for a short time a member of the National Board of Health, established after the yellow fever epidemic of 1878. He contributed valuable papers in this domain, notably the "Address on Hygiene and Preventive Medicine," at Philadelphia, in 1876, and on "The Sanitary Organization of Nations," in 1880.

For many years he was a regular attendant at the meetings of the American Medical Association, and one of the most respected and beloved of its members. He was president of the society in 1877, the meeting being held in Chicago.

His spirit of reform led him in these later years to warmly espouse the cause of the admission of women to the Massachusetts Medical Society, which was accomplished in 1884, and to advocate a more liberal attitude towards educated medical men, who may profess doctrines to which we cannot subscribe. (The past, present, and future treatment of homeopathy, eclecticism, and kindred delusions which may hereafter arise in the medical profession, as viewed from the standpoint of the history of medicine and of personal experience. A paper read before the Rhode Island Medical Society in 1887.)

Dr. Bowditch, besides holding the principal positions which have already been mentioned, was consulting physician to the Massachusetts General, City, Carney, and New England Hospitals, a member of the principal medical societies in Boston, Fellow of the American Academy of Arts and Sciences, of the Paris Obstetrical Society, of the Paris Society of Public Hygiene; and honorary member of the Royal Italian Society of Hygiene, of the New York Academy of Medicine, of the Philadelphia College of Physicians, and of the New York, Rhode Island and Connecticut State Medical Societies.

In 1879, Dr. Bowditch met with an accident to his knee, which ever after gave to him an appearance of general infirmity which did not belong to him. With this exception he maintained his vigor to a remarkable degree until the last year of his life. Increasing deafness rendered his attendance at society meetings less frequent, but he maintained an intense interest in all that was going on in the profession. Within a very short time of his death, the last time but one when he was able to see me, he slapped me on the shoulder and said, "Come, doctor, tell me, aren't they going to make something out of this lymph business?" referring of course to the labors of Koch with tuberculin.

Dr. Bowditch revisited Europe three times, namely, in 1859, 1867 and 1870. These trips gave him an opportunity of renewing old acquaintances and making new ones among the profession abroad. He wrote home very full, interesting letters, which he afterwards claimed as his diary. Such vacations were enjoyed by Dr. Bowditch more than by most professional men, for he was a man of much general culture, who read and re-read his classics, was exceedingly fond and appreciative of art and of the best music, though, as I have before mentioned, this part of his education was purposely neglected by his father.

After the death of his wife, which occurred in December, 1890, his own life began to flicker; and, although he struggled heroically against the loss for the first six months, it was then evident that the beginning of the end had come to him also. After six months' tedious illness, he died January 14th, in his eighty-fourth year.

Dr. Bowditch's life was a very full one, distinguished, whether we consider him as a physician, teacher, citizen, or simply as a man, by courage, simplicity, zeal, industry, and an intense interest in progress. There never was a man who more completely disregarded consequences when he felt that duty dictated action; whether this was a criticism of current medical practice, or of the selfish motives of obstructors of sanitary legislation, the defence of a runaway slave, or the branding of a deserter from the army.

His simplicity of character was such that on acquaintance his bitterest enemies became his best friends. How true was this with regard to our Southern brethren! When the war was over, it was *ended* as far as he was concerned; and he was one of the first to welcome the grandsons of John C. Calhoun to his own hospitable fireside. Members of our profession in the South, who had regarded him as an arch-enemy, soon became his dearest friends.

As a natural result of his transparent simplicity there was a playfulness in him, which, as in his father, continued to the last.

It is unnecessary to dwell upon the earnestness of Dr. Bowditch's character before such an assembly as this. There was a reality in it which none of us will ever forget, and which never ceased till his object was accomplished, whether it was compelling the world to adopt paracentesis for the relief of pleural effusion, or the emancipation of the slaves, securing a lock of Highland Mary's hair, or disproving the authenticity of the so-called portrait of Ambrose Paré.

That his industry was remarkable, is testified by the large number of pamphlets, and almost innumerable scrap-books and manuscript notes upon all subjects left by him. This trait may have been inherited, and certainly was taught by his father, who once seeing some idlers lounging about in Salem said, "I wish I could have the time of those men."

Up to his very last years Dr. Bowditch's interest in progress of every kind was most enthusiastic. Nothing could dampen his zeal in the search of new truths. This led him to sympathy and association with the youngest of our profession. He would welcome promises of good to come from this and that new method of practice, as if he had not been already disappointed a thousand times. When they were a little past sixty years of age, a classmate came in one morning and said mournfully "We are all dying." "Hang it," retorted the doctor, "*we* are still *alive*, go to work"; and he himself continued always to act up to the well-known French proverb: "*Work* as if you were going to live forever, *live* as if you were going to die to-morrow."

Of Dr. Bowditch's religious belief a word is certainly proper, but others may know more of this than I. He indignantly repelled for himself and the medical profession the charge of atheism so often made against it. When the news of his mother's death reached him in Milan in 1834, his whole nature at first seemed to revolt against the loss, but on entering the beautiful cathedral this feeling was succeeded by a calm belief in God and his goodness, and his direction of all things for the best, which continued with him through life. On his return to Boston he diligently followed the preaching of Dr. Channing, taking copious notes, which are still extant with something like this endorsement made on them years after. "I do not destroy these notes as they are evidence of what interested me at the time, but these things (meaning theological problems) have long ago ceased to interest me." He was always a reader and lover of the Psalms and other books of the Bible, but he "did not believe in creeds made by men."

Many here to-night will express their admiration of Dr. Bowditch's character more fittingly than I, but none feel it more deeply. "He was a man, take him for all in all, I shall not look upon his like again."

DR. MORRILL WYMAN

presented the following tribute to his life-long friend and colleague:

My acquaintance with Dr. Bowditch began in 1836, when I had the good fortune to be house-physician at the Massachusetts General Hospital. He was then a frequent visitor in the wards, and his examinations by auscultation and percussion, then new here, were of great value. I saw him in Cambridge, soon after settling there for my professional life. I shall never forget his kind, affable and considerate manner, so grateful to a young physician looking with anxiety into the dubious future.

In 1850 we were brought into closer relations, which led to results the most important to me of any in my professional life; they were also of the greatest interest to Dr. Bowditch. With your indulgence I will relate the facts, as follows:

February 13, 1850, Mrs. A. F., a lady thirty-nine years of age, generally healthy, after riding, with wet feet, in an omnibus from Boston to Cambridge was chilly, had headache and pain in the back and limbs. Three days later, when I first saw her, there was oppression in breathing, dulness on percussion on the left side, egophony, absence of respiratory sound from the base of the lung to the lower angle of the scapula. No evidence of disease in the right lung. Diagnosis: pleurisy, with effusion in the pleural sac. The usual treatment gave but little relief. On the ninth day of the disease, the pulse was 130 to 135, respiration was frequent, and there was a sense of suffocation and orthopnœa. The following night, the pulse was 140, respiration 50 to 60, lips blue, hands and feet cold, with cold perspiration. Signs of increased effusion; the left pleural sac full, and the heart pushed to the right of the sternum. She was faint, requiring brandy and water; the pulse at the wrist at times scarcely felt. So alarming was this state of things that Dr. John Homans, a distinguished physician of Boston, the father of the present eminent surgeon, was summoned. He arrived at four o'clock in the morning. He agreed with me as to the nature of the disease and the danger of imminent death. I proposed tapping the chest; we discussed it: Dr. Homans had never known it done in acute pleurisy, and I requested him to meet me again at 12 M., and give me his advice on this point. At noon of the tenth day of the disease, when Dr. Homans arrived, the symptoms were still worse. The respiration was short, frequent and labored; pulse 144, small; the color of the lips and the coldness of the extremities indicated impending suffocation. The friends were again told of the danger of imminent death. They saw the terrible suffering; they were assured that the operation was almost certain to give relief, whatever might be the final result. Dr. Homans had consulted physicians in Boston; no one could from experience advise it. Nevertheless under the present state of things, he advised it, and the friends consented.

The patient was with Dr. Homans's aid seated in a chair inclined to the right and the body bent a little forward. An exploring trocar and canula one-sixteenth of an inch in diameter was then passed by me through the intercostal space between the sixth and seventh ribs (counting from above) midway between the spine and the line of the axilla; it was pushed steadily on until its point moved freely in the pleural sac; withdrawing the trocar, twenty ounces of straw-colored serum was allowed to flow. The canula was taken out; the pain was slight, the patient expressed herself as much relieved, and she was laid in her bed. The following day she slept three hours, the first sleep for thirty-six hours; respiration 36; her hands and feet were warm and her color natural. Two days after the operation, she had occasional paroxysms of dyspnœa, and at her earnest solicitation the same trocar and canula was passed near the same place as before. This time, the canula had fitted to it a pump, so arranged that fluid was continuously drawn through it without the possibility of the entrance of air, or any septic fluid. With this, ten ounces of clear serum were drawn, with immediate relief to the patient. The recovery was steady; in about three weeks after the operation she was about the house; a fortnight later she drove ten miles in a carriage, and was soon no longer under medical observation.

Six weeks after this operation, April 19, 1850, Dr. Bowditch kindly invited me to visit with him a patient at South Woburn, a small village about eight miles from Boston. This case was printed by Dr. Bowditch in the *American Journal of the Medical Sciences*, for April, 1852. I copy his words:

"The following case came under my charge, and as it was the first case of which I had control, in which Dr. Wyman's method was used, I shall enter into some detail.

"Case I. A. B., age twenty-eight, house painter, I saw April 17, 1850, at Woburn, his place of residence. His history was as follows: Five weeks before, having been previously quite well, he was attempting to raise a ladder to the side of a house upon which he was working. By accident, the whole weight of the ladder rested upon him, and, directly after a great effort to sustain it, he was seized with a violent pain in the left side of the thorax. Some cough and hæmoptysis supervened, and he was confined to his room for nearly a fortnight, under the care of a homœopathic practitioner. At the end of that time, feeling better, and all his violent symptoms having subsided, he was allowed to go about and to transact business in Boston. In a few days he became more ill than ever, and was considered by his friends and physician to be dying of "a rapid consumption." At the end of five weeks from the first attack I was called. The patient was in bed, in a semi-recumbent posture, suffering so much from dyspnœa as to be unable to easily converse with me. His pulse was 120, quite small. He was extremely emaciated. His voice was clear, and his countenance, though thin and expressive of suffering, had not exactly a phthisical aspect. It appeared that he had been unable to lie on his right side since his first attack, and not on his back until a week previous to my visit. Owing to the dyspnœa, I did not ask many questions, but on examination of the physical signs, discovered as follows:

"Intercostal spaces of the left side enlarged. Total flatness front and back, even to the apex of the same side.

"Absence of respiratory murmur in the same parts, save at the very apex. Distant egophony at the middle of the back. The heart was beating at the right of the sternum.

"My diagnosis was effusion of fluid. No *positive proof* of pulmonary disease.

"My proposed treatment, as the only means of saving life, was the puncture of the thorax.

"The friends objected but the patient consented, and allowed himself to be removed to another boarding-house. Dr. Morrill Wyman, of Cambridge, I had previously summoned in consultation as I knew that he had operated a short time previously, with success, upon a case of acute pleurisy threatening suffocation.

"Dr. Wyman agreed with me as to the nature of the case and the necessity of drawing off the fluid. Accordingly, on the second day after our first examination, Dr. Wyman used an exploring trocar, with a strong suction-pump attached thereto. The patient was placed in a chair, and a puncture was made about four inches from the vertebræ and just below the angle of the scapula. Only a small quantity of bloody fluid exuded, although the trocar seemed to be introduced as far as prudence dictated. I will now simply state that we decided that it would be well to desist. The next day, however, having thoroughly examined the case, I summoned Dr. Wyman and told him another puncture was in my opinion necessary, and that I believed that the instrument could be introduced, *capulo tenus*, without danger. No fever symptoms, and only slight fatigue had followed the first effort. Two days subsequently, April 23d, we found more fulness and great tenderness of the left breast and side. The patient had perspired freely at night. His tongue appeared healthy, his appetite was good; he was somewhat costive. His cough had been less, and the expectoration had been about two ounces of opaque mucus daily. Dr. Wyman operated a little back of the previous puncture, which was scarcely perceptible. Just before the operation was done a violent fit of coughing occurred in consequence of the effort needed to place him in a chair. The patient was completely exhausted and bathed in sweat. His pulse rose to 138, and he felt quite faint. We were obliged to allow him to lie down. After resting some minutes, he was raised again and nine ounces of pure pus drawn out through the canula. The patient bore the operation very well, was less fatigued than by the access of cough, and felt relieved in some degree, of the oppression about the chest.

"From the time of the operation, April 23d, I date the commencement of his recovery, although there was no very sudden and decided improvement in any one of the rational or physical signs.

"June 25th (sixty-two days from the operation). Steady improvement; had gained five pounds of flesh in two previous weeks, and had worked for two hours upon his farm. No cough for two weeks. No pain or dyspnœa except a little on walking. He was, in fact, so altered in aspect that I did not recognize him on his entrance into my office in Boston."

Dr. Bowditch's original notes of this case which I have been kindly allowed to consult has this caption:

"The most important of my cases of thoracentesis was the one operated on by Dr. Wyman."

These two cases were the first operated upon by what may be called the new method, that is, with the smallest trocar and canula practicable, with a suction-pump. I afterwards connected the pump and canula by a short flexible tube, with an inch or two of glass tube for inspection and a catch to hold the piston when drawn out to maintain the vacuum. It has been used in all my operations. Dr. Bowditch and others used a modified pump, but the principle is the same in them all.

At the meeting of the Massachusetts Medical Society in May of the next year, 1851, an attempt was made, under the presidency of Dr. John Ware, to secure the reading of papers on medical subjects, to take the place, in part at least, of some of the annual routine of business, and of time often spent in long discussions on the wording of by-laws and matters of discipline. Dr. Ware requested me to prepare a paper on my own experience in thoracentesis since adopting my method of the previous year.

At this meeting, Dr. Bowditch and I each read a paper on thoracentesis. In these papers are the results of 39 chests punctured; 25 by Dr. Bowditch and 12 by myself. The whole number of punctures in these 39 cases was 82; 47 by Dr. Bowditch and 35 by me. In no one of these cases could any injurious consequences be fairly attributable to the operation. It was, so far as we could see, harmless. Dr. Bowditch's paper was published in the *American Journal for Medical Sciences*, the following April, 1852, just forty years ago, and was translated in Froriep's *Tages Berichte*, four months after, in Weimar. It is by no means a report of cases only. It is an almost complete essay on effusions into the chest: whatever concerns the history, diagnosis and medical treatment and the best method of practising the operation of thoracentesis are described and discussed. My own paper was not printed, but the subject was fully treated subsequently in my annual course of lectures as Adjunct Hersey Professor of the Theory and Practice of Physic in the Medical School of Harvard University. A paper on thoracentesis was also read by me some years after at a meeting of the Middlesex South District Medical Society, cases in my practice affording illustrations of my method.

Any one conversant with the history of medicine and surgery, knows that for the past eighteen hundred years, indeed, since the days of Hippocrates, the operation for the removal of fluids from the chest has been from time to time practised, sometimes with the scalpel, sometimes with the trocar, but with results far from encouraging. Through the Middle Ages it fell into disrepute, to be revived in the fifteenth century by a bold surgeon (Jean Arculanus). I give you his own graphic description: "When you have made up your mind to do this operation, first protect your reputation with a doubtful prognosis, then, scalpel in hand, in God's name cut between the fourth and fifth ribs, and push on till the pus flows." Scultetus, in the frightful pictures of his "Armamentarium Chirurgicum," shows the kind of instruments in use in 1672, and the importance attached to the operation.

The question of the safety or danger of thoracentesis in acute pleuritic effusion is mainly a question of method. The method of free incision, practised before the use of the small trocar and canula, with suction to make it available, was dangerous and seldom resorted to. With the fine canula, or hollow needle, and exhausting syringe, it has become both practicable and safe. In the apparatus used by Dr. Bowditch and myself and others since 1850, the essential principle is the combination of a hollow needle or trocar and canula, the smallest possible, through which a fluid can be drawn by diminished atmospheric pressure. It is the principle upon which many instruments since used have been constructed. This is true whether the suction is made by a pump, by a cupping-glass, an elastic ball, a column of water in a tube, a Davidson's syringe, Dieulafoy's bottle, or any other of the fifteen different forms he has enumerated; the same principle will be found in each. As to the wound, it is hardly more than that for acupuncture.

Extravasation into cavities, for the removal of which it is used, is a symptom of many diseases for which we can do but little otherwise. Extravasation into the chest, considered as a symptom only, either by the obstacles it opposes to the functions of the heart or the lungs, or by its consequences. If not promptly relieved, it often becomes of more therapeutic importance than the disease from which it springs. "A man may often, with stricter propriety, be said to be ill of the symptoms than to be said to be ill of the disease, and, what is more, to die of the symptoms than to die of the disease."

In 1884 Dr. Bowditch reported as follows: "Since 1850, when I first began to operate with the fine trocar and suction pump, I have had under my care 253 patients with pleural effusion which required surgical interference; to relieve the fluid 395 operations were done. The vast majority of them have been that by suction above named. In a certain number a permamanent opening became necessary." To these should be added many more cases, judging from my own experience and that of others, whose cases have not been reported. Indeed the acknowledged simplicity and safety of the operation satisfied the general practitioner, skilled in physical diagnosis, that he could himself successfully treat his patients without special aid. The merit of the method at first doubted and deemed "imprudent" was thus established by a large experience.

Dr. Bowditch did more, I think, than any other to bring about this most important result. Few can know how earnestly he labored, almost to the end of his life, to disseminate the knowledge of the method. He at once saw its value and practised it. He brought the force of his position, his well-earned reputation in his specialty, and his characteristic enthusiasm, to aid in making known its usefulness. For this he deserves well of his profession and of suffering humanity.

There is another side of his character that should never be forgotten — his generosity; his candid estimate of other men's works and qualities.

Some years ago, when occasion was taken to congratulate him on his eminently successful professional life and his devotion to the interests of public hygiene, and to thank him for his much kindness, I received the following:

Boston, January 29, 1883.

Dear Doctor: Letter received. I thank you for it. In every paper I have published, or, at least, in the majority of my papers, I have endeavored to place your name as that of the person who first suggested the proper instrument for the operation of *tapping the chest*, which I had previously for many years ineffectually endeavored *in some way* to have done in cases where one pleura was full or nearly full of fluid. *I caught at your fine trocar and suction pump*, and what a blessing it has been, and will forever be, to mankind! No one, so far as I can find, ever thought of, much less proposed to the profession, your plan.

Very sincerely yours, Henry I. Bowditch.

I am reverently thankful to the Disposer of Events that my days have been so lengthened that I can offer my grateful tribute to the noble, truthful and generous character of Henry Ingersoll Bowditch.

DR. OLIVER WENDELL HOLMES

sent the following letter:

Dr. Bowditch was so well understood, so universally trusted, so generally beloved, and in his patriarchal years so deeply revered, that I feel that there is little for me to add to the judgment already passed upon him by his professional brothers and the community.

He was in the class before mine in college, and I hardly knew him at all until I met him in Paris, where he was following the teachings of Louis, the favorite instructor of American students, especially of those from Boston and Philadelphia. Louis had no more devoted and ardent disciple than Dr. Bowditch. I remember, when I first met him in Paris, asking him if he was not a firm believer in Louis's theory. "Louis's theory is not a theory," said Dr. Bowditch. I maintained that it was a theory like any other teacher's doctrines. He was right and I was wrong. It was as much a theory as a merchant's balance sheet, and no more than that. I came to a better understanding of him after that conversation with his American pupil. I met Dr. Bowditch occasionally at the Society for Medical Observation, and in 1846, he and I, with the late Dr. Storer, were appointed physicians to the Massachusetts General Hospital. All my relations with him were pleasant, but they were not intimate, so far as personal intercourse was concerned, yet I felt as if I came nearer to him than to many whom I saw much more frequently. Though I have not been a working physician for the last forty years, I have been his colleague as a Professor in the Medical School of Harvard University, and had the opportunity of justly estimating his noble and generous nature. His scientific labors have always interested me, and I recognized more especially the great value of his study of our local climates in relation to disease. It is but a small pebble that I drop upon the cairn beneath which he rests, but I could not pass it without leaving my slight tribute.

DR. THOMAS DWIGHT.

It is granted, I believe, to very few of our profession whose private lives were so secluded as that of Dr. Bowditch, to leave behind them so many, who, in all sincerity, claim the title of friend. It is as such that I wish to add a few words of kindly veneration to those which have already been spoken. But there are so many who have claims as strong, or stronger, than my own, that I shall venture to call myself a representative of his friends, and in their name to speak of him, not as of a physician, but as of a man. He was, however, so essentially a physician, his calling was so deeply stamped in his being, that he can hardly be considered otherwise than professionally. It was my good fortune, when a student, to act for a time as his assistant in his office. It was there that I learned to know him, and the more I knew him, the more to love and respect him. I saw him with his patients, rich and poor alike, always sympathetic, always kind. Each was to him a fellow-being in need, whom it was his duty to help. He was not more considerate to one than to another. If they could pay it was well; if they could not it was well; the service at least had been rendered. I shall never forget an incident, which I have treasured for more than twenty-five years, to tell to-night if I should survive him. There came in one day a feeble, haggard young woman, with cardiac symptoms, which even my inexperience recognized as functional. He spoke to her with a respect and courtesy which could not have been greater had he been speaking to a duchess. "Have you anything that troubles you? I do not ask you what it is; but is there anything?" She replied that her husband had left her. He gave her advice, and before leaving she offered him a dollar. He declined it. When she was gone he turned to me and said, "Doctor" (a title as yet unearned which he gave to his assistants), "when a young man is with me it is not merely to learn diagnosis and treatment, but the principles that should actuate us. Now if I had taken that woman's money, I feel that when I come to die I should see her face looking at me." That his charity was imposed upon we all know. His waiting-room was thronged by those who had no means even if they had the will to pay. He said to me once with momentary impatience, "This cannot go on. I do not keep a dispensary." Accordingly I asked a burly individual whose face did not inspire confidence whether he was able to pay. He said no, but that he had served in the army. I told Dr. Bowditch. "Let that count for him!" he exclaimed. It is needless to say that the poor continued to come.

"Careless their merits or their faults to scan,
His pity gave ere charity began."

He was so simple and so human that his very weaknesses were endearing. His contempt for trickery, for wrong-doing of any kind, was more appealing than a sermon. I remember his contempt for a surgeon, who, putting his reputation against the possible benefit of the patient, had refused to intervene in a desperate case "lest he should seem like a murderer." In the excitement of those days of civil war he was roused to withering wrath by tales, let us hope unfounded ones, of oppression of the helpless. Indeed to be oppressed or in need was in itself a claim to his sympathy.

Many of us can bear witness how he tried to help the students, especially the poorer ones. Of his many kindnesses to myself I say nothing, for I am not speaking for myself, but for all his associates who loved him.

There remains, however, one point on which I wish to speak as the representative of a more restricted class. About 1868, when the Carney Hospital was founded, he was the first President of the Staff, which office he held till some ten years or so ago, when it fell to me to succeed him. His position was an important and onerous one. It was characteristic of him to take it. Prejudice was stronger then than now. A hospital, under the control of a Catholic sisterhood, was to begin its work in Boston. Many and vexatious difficulties surrounded the undertaking. He had much to endure from ignorance, prejudice, and misunderstandings. In giving the support of his name and of his work he did that hospital an inestimable favor. As his successor I feel that I have a claim to rise to-night to speak, not only for his professional friends, but for all the sick and suffering who have been helped at the Carney Hospital, and who never knew how much they owed him.

DR. H. P. WALCOTT,

of the Massachusetts State Board of Health, of which Dr. Bowditch was formerly chairman, gave an account of the formation and labors of that Board, and of Dr. Bowditch's untiring zeal for the public good, as follows:

While I esteem it a personal privilege to join in these testimonials to the life and services of a beloved and wise physician, I feel it a duty as a member of the State Board of Health, of which Dr. Bowditch was the founder and the head, to say a few words about the debt that State Preventive Medicine in Massachusetts and this country owes to him.

However important the cause of Public Hygiene may have been, and though the thinking world has always written and spoken much in its favor, it is only within a generation that practical measures have been adopted by the State in a persistent and methodical way for increasing and protecting the public health.

Lemuel Shattuck, a man wise beyond the men of his day, and like his great contemporary in England, Edward Chadwick, not of our profession, had in 1850 prepared and submitted to the legislature of this State a report of a general plan for the promotion of public and personal health in Massachusetts.

Though this was the real foundation of our public-health movement, it made but slight impression on the authorities of that day. But nearly twenty years afterwards when a State Board of Health had been established by the influence of Dr. Bowditch, more largely probably than that of any other man, this report became, I quote Dr. Bowditch's own words, "the inspiration and support of the Board."

The organization over which Dr. Bowditch presided was a most efficient one. It is, I think, one of the best proofs of his real capacity for leadership that this Board, during the years of his connection with it, contributed so much to the general cause of public sanitation in this country; it was from the first permeated with Dr. Bowditch's noble enthusiasm, and in every department of hygiene has left an enduring record.

In the course of some remarks made at the first meeting of the recently established Board, September 15, 1869, he said: "I confess to you that I know of no higher office than that which we now hold, namely, that of inaugurating the idea of State medicine in Massachusetts. Upon our high or low appreciation of the position and of the duties resulting from that position, and upon our wise or foolish performance of these duties, depends the success of the object aimed at in the establishment of a State Board of Health." We who have been connected with the Public Health Service of the State, in these later years, realize, perhaps more fully than others can, how justly the difficulties were estimated and how completely success was attained.

That political schemers should have made an effort to advance themselves under cover of the well-earned position of this organization, was to be expected; that they should have succeeded, even for a brief season, was a grievous disappointment; that the Commonwealth should have finally confirmed the original constitution of the Board, with far wider functions and greater means of usefulness, was the legitimate result of the unselfish, unpaid, and most valuable services of Dr. Bowditch and his associates.

He was one of the original members of our first and only National Board of Health. Unfortunately, it soon became evident that neither the national authorities nor the people of the whole country were able to appreciate the needs of such an organization as must surely come sooner or later; and he withdrew, a veteran, from this his last public service. But if the circumstances of his life had been such that he could have taken a more active part in affairs at Washington, I do not believe that the subsequent melancholy history of national public health administration would have been written.

During these fruitful, early years of the State Board, we find him busy with the tenement-house question in our cities — himself a working member of one of the incorporated associations for the improvement of such houses; investigating most carefully the evils of intemperance and measures for diminishing them; and at all times considering the causes or antecedents of consumption. I hesitate, as I mention these most important topics, for the enumeration would seem to imply that these were the limits of his interest. It was not so; the records of the Board show him to have been an active participant in every detail of the work.

The observations, which led Dr. Bowditch, in the year 1862, to lay before the Massachusetts Medical Society, "the law of soil-moisture and land-drainage, and their influence on consumption," were undoubtedly the first made in this special field of inquiry. As is well known, Buchanan in England, three years later, arrived at conclusions substantially the same. While the exceptions found to this law are numerous and not to be dismissed as mere errors of observation; and while our later knowledge of the influence of micro-organisms in the causation of tuberculosis must be taken into account, it is still true that a considerable share of our gain in the diminished death-rates from consumption is undoubtedly due to the removal of excessive soil-moisture by more efficient drainage of the ground; and the beneficial influence of Dr. Bowditch's demonstration of the value of this process cannot easily be overstated.

In a note received from him as late as June 7, 1891, he called my attention to certain matters which he thought that the Board of Health might usefully and creditably present to the Congress of Hygiene and Demography at London. His example, his lofty enthusiasm, his words of encouragement, remained to the end of his own life, and will remain in the lives of these who knew him, as most eloquent reminders of the obligations of public service and as incentives to a more devoted application thereto.

Prefixed to some papers intended for the use of his college classmates, and now deposited in the library at Cambridge, I find the following lines, in which, I think, may be found the story of his life:

Writing in 1887, he says: "I look back now on those days of inspiration with unmingled satisfaction. Among them I call to mind the 'Latimer times' and their results in the State; the years spent in urging physicians to believe in thoracentesis; the law of soil-moisture, as provocative of consumption, first proved by me for New England, and three years afterwards rediscovered by Buchanan of London, to hold good in England. I remember with joy my necessarily persistent but successful efforts to persuade Congress to establish a proper ambulance system for the fighting armies of the republic. Subsequently to peace, I remember with joy the years of patient but delightful work which our State Board of Health carried on, by which we endeavored to indoctrinate the people with the laws of health, climate, race influences, intemperance, etc. . . .

"Finally, I cannot but remember with satisfaction the fact that the International Medical Congress, which met in 1876 in Washington, D. C., voted to send my address on "Public Hygiene in America" to public bodies in all the States of this Union, and to those of Canada. . . .

"If, according to the directions of the Delphic Oracle; I know myself, my chief, I had almost said my sole, emotion, is that of intense gratitude to God, for the beautiful and blessed boon of life, with the power and liberty to work for all, during these formative and magnificent days of youth of our Nation. . . . I trust that I may be deemed by my classmates not unworthy to use the brave words of Saint Ambrose, who to the friends around his death-bed said, 'I have not so conducted myself amongst you, that I am ashamed to live or afraid to die.'"

DR. E. H. BRADFORD.

No tribute to the memory of Dr. Bowditch would be complete unless a few words were said by one of the many who, though not contemporaries or associates or pupils even, yet owe so much to him for the example of his life. We all of us as students or physicians have had moments of fatigue and discouragements, when our art seemed long, our achievements paltry, the science we strive for far beyond our reach, and our chosen profession a pitiful trade. Whenever we fall into this mood it is well to remember what Dr. Bowditch has said so earnestly, that "the profession of medicine is man's noblest work, and the physician God's viceregent on earth." To have heard these words was more than a help, it was a moral stimulus, a tonic, for they came from the lips of one whose life made them real. In thinking of him, we can recall the words of Rokitansky speaking to a number of students who celebrated his seventieth birthday by a torchlight procession, saying "Youth should kindle its torch at the funeral pyre of the best and the noblest past." If we hope to keep our ideals bright, where can we turn to a better or nobler memory than that of Henry Ingersoll Bowditch?

DR. C. F. FOLSOM.

The elder Cato was once asked why the Imperial City had no worthy statue of him, a man who had been tribune, consul, and had received the highest honors of the State. Cato's reply was that he would much rather that men should ask why he had no statue adequately commemorating his great services to the State than that any one should have cause to inquire why he had one. Dr. Bowditch's character in many points resembles the sturdy virtues of the simple Roman, whom, with reason, as Plutarch said, every one admired. To Dr. Bowditch we owe a deeper personal debt of gratitude than to any other physician of our generation. His life work, a monument of the great moral force which a single, earnest, devoted man may be in his community, is an incentive to our best efforts. Nobody who ever knew him as teacher, counsellor, friend, can ever forget him. Like Cato, he never would have taken thought whether he were worthily remembered. His work was its own reward. His profession was to him what his art was to Angelo.

Do we not owe it to ourselves and our successors here that the question may not be asked why his fine presence has not still its fitting place with us?

DR. J. G. BLAKE.

My reminiscences of Dr. Bowditch would be without value among these valued testimonials to his worth, if even such slight and personal topics were not enlarged by having to do with so worthy a subject. I desire, besides, to place my slight tribute on record with those of others who loved him. My first memory of Dr. Bowditch dates from the time when as a medical student, a happy chance in the lecture-room of the Massachusetts General Hospital allowed me to answer correctly a question of diagnosis, and when I was fortunate enough later to mention symptoms which he had not enumerated. It was a case of pneumo-thorax, and it led to his kindly notice of me while I remained as a student.

Before the establishment of the Carney Hospital he had been for a long time physician to the St. Vincent Orphan Asylum, then on Purchase, now on Camden Streets. Sister Ann Alexis, the Superior, had inspired him with her own devotion to suffering childhood, and I think it was as a result of their consultations, etc., that Mr. Carney was first induced to form his project. Dr. Bowditch was the first visiting physician at the hospital, and I, as his colleague, can testify to his great faithfulness and care of its interests in those busiest days of his life. It is a happy memory to look back upon.

I remember, too, with pleasure, an incident during war time when thirty of us were wandering about the streets of Alexandria in search of shelter for the night. We had gone down in answer to the call for surgical aid after the second battle of Bull Run. It was late in the afternoon. Fortunately for us, Father Finotti, who accompanied the party, had at one time been Parish Priest of Alexandria, and at last he succeeded in obtaining for us a single room with one bed, in which we placed Dr. Bowditch and the elder Dr. Steadman, while the other twenty-nine slept on the floor. It was at this time that I chanced to ask him about his political opinions. "Doctor," he answered, "you know Wendell Phillips. *He is a pro-slavery man compared with me.*" Later, we came together in the Co-operative Building Company, and I remember hearing of the evenings he spent in the "Crystal Palace" on Lincoln Street, where he established a whittling school, which was one of the germs of the present system of industrial education. He had the boys gathered here out of the streets, and passed many hours with them himself, encouraging them and providing ways of selling their work — a noble thought and one that has borne lavish fruit.

Later on we were colleagues in the service of the City Hospital for three years. He enjoyed the position because, as he quaintly remarked, he liked to see people getting well under him. A specialist of his eminence and in his particular branch would be likely to have many unavoidably unsatisfactory results in private practice.

He thoroughly enjoyed the opportunity which a large hospital service and the variety of diseases coming under his care allowed for the exercise of his skill in restoring health.

The faithful, painstaking, earnest manner, and the lavish devotion of time to his work was an example and an inspiration to me that I shall remember to the end of my life.

DR. HENRY O. MARCY

sent the following letter:

Unfortunately my engagements are such as to utterly preclude my attendance at the meeting held by the profession in commemoration of one whom they have so long loved and delighted to honor.

To me the memory of Dr. Bowditch is exceptionally precious. His magnetic power and personal enthusiasm made him the centre of attraction to all the students of my period of pupilage. I never met him without imbibing somewhat of the inspiration with which he taught and practised his divine calling.

To those who evinced a desire for knowledge, he was ever ready to impart, often with a patience and tenderness, not only personal but paternal. He seemed to take his pupils, even the most humble and less promising, into his confidence, and never wearied in encouragement and personal endeavor. He cherished the memory of his great master, Louis, of whom he often spoke in terms of enduring affection and whose example he imitated.

It was due, in large degree, to Dr. Bowditch that clinical instruction in America received a new impetus, and its methods of teaching were revolutionized. *Who* that belonged to his auscultation classes can ever forget the delightful evenings of pleasure and profit combined, which were spent in Dr. Bowditch's library? There we caught glimpses of his charming home life, so often repeated and endeared to us by the long years of intimate relationship.

Dr. Bowditch also established clinical conferences, which at once became popular in the Medical School, and I esteemed it a rare good fortune that he selected me as his first secretary.

I am well aware that it needs no words of mine to attest to the patriotism and the self-sacrificing devotion of Dr. Bowditch during those years when the nation's life hung in the balance. He gave up, in large share, his very lucrative practice, in order that he might devote himself to the examination of recruits for the military service, and those of us who had the privilege of assisting him in this work, will never forget the thorough manner in which he discharged this duty. It was done in a kind and tender way, and his "God speed and bless you, my dear boy," as he grasped the hand in parting, was a benediction, given with that warmth of feeling that often drew tears in response.

During these days he frequently narrated to me, at length, his early experiences as an Abolitionist, with charming anecdotes of his intimate friends, Garrison, Phillips, Sumner, and a host of others scarcely less famous. It was my exceptional fortune to be his office-assistant for a considerable period soon after the close of the war; and, although he rarely referred to its events without a touching allusion to his own bereavement in the loss of his idolized son, he was ever proud of the privilege of being able to serve his country.

In the later years, when it was my privilege to propose his name as an honorary member in the Order of the Loyal Legion, there was not a single comrade who did not gladly couple the name of Bowditch with that of Kingsley, Brooks, Lowell, Whittier, each in their way most noble servants in their country's need. His acceptance was coupled with the statement that he regarded it as the highest honor that could be conferred upon him to be thus publicly enrolled in the order of the country's defenders.

I leave it to others to make mention of Dr. Bowditch's many contributions to the science of medicine, which will render his name immortal; his public services to the State and to the Nation in the boards of health which were established largely by his own personal endeavors, the fruitage of which laid the foundations of modern sanitary science. His interest in the advancement of his chosen profession, in which he was such a distinguished worker, knew no narrow limits. He early interested himself in the American Medical Association, of which he was elected President in 1876; and few will ever forget the splendid service which he rendered in that capacity, or the generous, loving words with which, as a patriot, he expressed his desire for harmony and union between all sections of our vast country.

Through the American Medical Association, the medical profession of the North and South were early brought into a fraternal state of union which has done much toward the re-establishment of harmony between the States. To the very end this thought was uppermost in the mind of Dr. Bowditch. Perhaps the last letter he wrote, only a few days before his death, was to me upon this very subject, the best means of uniting and fraternizing the medical profession of another State.

Such a life ends not at death. Its noble influences and power will continue to be felt; the name of Henry I. Bowditch will be referred to with pride, so long as medicine is taught as a science, as one of the great leaders of his profession in America.

DR. E. W. CUSHING.

I do not feel like letting this occasion pass without having a word to say in regard to one who has been kind to me personally, as he has been to many others. After what has already been said, it is not necessary for me to mention his distinguished medical services, but I may be allowed to recall the magnificent individuality and the moral courage of the man. The majority of the members present here can hardly conceive of the fortitude which was required to take the position he did in the times before the war, when it meant little less than the repulsion of his friends, the ostracism of society and possibly the violence of the mob. I lived opposite Wendell Phillips, when a boy; I have repeatedly seen the crowds jostling him through the street, as he tried to get home; and such treatment was encouraged and justified by those who stood high in the community. It was no light thing then for a man to sever himself from respectable people, owing to his convictions: disregarding the wrath of the vulgar, the vengeance of the powerful and the fear of ultimate consequences. Dr. Bowditch has to-night been compared to Cato; permit me to remind you how well he fulfilled the ideal of Horace:

> "Justum ac tenacem propositi virum
> Non civium ardor prava jubentium
> Non vultus instantis tyranni
> Mente quatit solida. . . .
>
> . . . .
>
> Si fractus illabatur orbis
> Impavidum ferient ruinæ."

I never had the honor of being in Dr. Bowditch's office, nor was I his student. I first knew him at the time when I had been investigating something of the relations of epidemics and sun-spots, when he asked me into his office, and, instead of discouraging me, he urged me to go on. He brought out a book, and showed me what he had done in reference to a non-medical subject, a description and drawings of some animalculæ, which he had presented to the American Academy of Sciences. I was surprised at the deep interest he took in various scientific matters not immediately related to medicine. His influence has always been felt against Philistinism. Afterwards there was an attempt to introduce a medical-practice law in Massachusetts. I, with others, was interested in that. I went to Dr. Bowditch, and he received it with enthusiasm. The first meeting was in his house, and he aided the undertaking with his advice and suggestion. I was deeply impressed with the utter unselfishness of the man, and remember well his anger at the way in which the bill was finally killed by those who should have supported it. Again, at a time when I was in a position where it was difficult to determine what I ought to do, to decide as to the relative importance of various claims which might be considered as conflicting, and between different views of the highest duties of a physician's life, I turned to Dr. Bowditch as to a man whose advice I knew would be right; and his encouragement, his kindness, his appreciation of all the various conditions, made a deep impression on me, for I had no claim on him except that which every human being had on him. I therefore desire to render my tribute to the memory of a great man whom we have had among us. We cannot see him yet in the perspective in which he will be seen fifty years from now. I wish, personally, to render thanks for his assistance, sympathy and sound advice at a time when I needed to know who my friends were; for at such a crisis, in the words of Ennius, "Amicus certus in re incerta cernitur."

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Original Articles.

THE RELATION OF BACTERIA TO INFLUENZA.[1]

BY HENRY JACKSON, M.D., OF BOSTON.

As during the last year there have been many cases of influenza, grippe, which have led to further investigations and speculations as to the cause of this interesting disease, it seems desirable to again give a brief account of the work done and the results obtained. The mere fact that in certain cases of influenza a bacillus has been isolated is not a factor of great importance, even though that bacillus differs in some of its characteristics from any germs previously described.

It is much more instructive to study the general course of the disease and observe the phenomena presented in its course, to determine if possible to what category of diseases we may relegate influenza. By comparing the symptoms of influenza with those of other diseases which we have good or fair reasons to believe to be dependent upon the invasion of micro-organisms, we obtain data sufficient to warrant us in classing influenza among the infectious diseases.

In the last hundred years several world-wide epidemics have occurred, in each instance the disease having started in the east and travelled westward by gradual steps. In the epidemic of 1889–90, such was the geographical distribution of the disease; careful investigation showed that the disease spread gradually from east to west independently of atmospheric conditions, whether of wind or weather. Furthermore, the disease spread along the lines and channels of human intercourse with the rapidity of human travel. In proof of the extension of the disease through the direct agency of infection from man to man, several factors of importance have been elicited. First, isolated cases always appeared in a town or city before the disease became epidemic; this is demonstrated by the history of the epidemic as it appeared in small and isolated places, and by the universal testimony of physicians in large cities as gathered from their individual practice. At the beginning of the epidemic of 1889–90, we all of us saw a few cases which we did not recognize as essentially different from severe catarrhal colds, if I may use this expression, and only later did we recognize the fact that we had to do with a specific and wide-spread disease. Again, this last year I saw on December 6th, in consultation, a case where the only permissible diagnosis was a "febricula," though the subsequent prostration showed that the patient had what in previous years we had recognized as a specific disease, influenza; not until the latter part of December were cases entered upon my books as influenza.

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[1] Read before the Medical Section of the Massachusetts Medical Society, June 7, 1892, and recommended for publication by the Society.

It has been demonstrated by investigation that it is possible that the disease is directly communicated from individual to individual, and, on the other hand, there is no proof that there is any causal relation between influenza and any atmospheric conditions. Perhaps the strongest practical proof of the infectious nature of influenza is to be found in the outbreaks of the disease on ship-board; I give one instance in detail. (Proust: *La Semaine Médicale*, 1890, No. 6.) The ship St. Germain sailed on December 2d from Saint Nazaire, and on the following day took on board at Santander a passenger from Madrid; this passenger had influenza the day after he came on board the ship. Four days later the surgeon had the disease, and in a few days it had spread widely through the ship's company. One hundred and fifty-four out of 436 passengers had influenza, also 47 sailors. As the whole ship's company was well before the passenger was taken on board at Santander it seems reasonable to agree with Proust that he was the cause of the outbreak.

On the other hand, Trudeau, recognizing the danger which influenza brought to persons with pulmonary tuberculosis, took great care to absolutely isolate his sanitarium from all posssible sources of infection during the prevalence of influenza; the result was that all of his patients escaped, whereas the disease was very prevalent in the immediate neighborhood. Tuberculosis offers no immunity to the disease, but rather in these cases the disease proved itself exceptionally severe.

Influenza has in different epidemics manifested itself by attacking different organs; in epidemics previous to those of the last few years, the chief local manifestations of the disease have been those of naso-pharyngeal catarrh and bronchitis. In the last two epidemics the local manifestations of the disease have not been so sharply defined; especially in the epidemic of 1889–90 the disease was divided into three essential types, the catarrhal, the gastro-intestinal and the nervous form. In spite of the varied seat of the local lesions in influenza, all forms have certain essential symptoms in common; at the height of the disease the general constitutional effects are in severity out of proportion to the local disease, prostration of greater or less degree follows the disease, and convalescence is often protracted to a considerable period.

The matter has often been discussed as to whether influenza is to be considered as a contagious or miasmatic disease. Investigations of recent years tend to show that all acute epidemic diseases, whether classified as contagious, infectious or miasmatic, are dependent upon the growth in the body of some micro-organisms, whether they are bacteria, protozoa or some more highly organized species. It seems desirable, and is certainly more simple, to classify all such diseases, whose essential etiological factor is found in a contagium vivum, as infectious. Certainly, Flint's definition of an infectious disease as one caused "by an agent which under certain conditions is capable of unlimited increase or multiplication" covers every question that can be raised as to the cause of the disease under consideration.

As in other infectious diseases, so in influenza, we find that certain diseases are often associated with influenza, either intercurrently or as sequelæ; a predisposition to infection from other diseases appears to be produced. In the epidemic of 1889–90, but more frequently in 1890–91, many cases of tonsillitis of the follicular type were observed in connection with influenza, cases whose clinical history left no reasonable doubt but that influenza was the essential disease, and acute follicular tonsillitis but a complication.

Acute catarrhal nephritis, as evidenced by albuminuria and casts, is not infrequent; chronic nephritis is an occasional sequela, as I have seen in a case that I have followed with care since the epidemic of 1889–90. I saw several cases in which the duration of albuminuria and casts and the occurrence of slight œdema made the assumption probable that the kidney lesion had passed beyond the stage which may be justly described as catarrhal nephritis. The most important complication met with in influenza is pneumonia; its frequency in influenza cannot be denied. Dr. F. C. Shattuck's paper on "The Relation of Pneumonia to Influenza in Boston," in the epidemic of 1889–90, demonstrates the association of the two diseases in Boston. I desire to quote from Dr. Shattuck's paper a few remarks.

Table I. — Deaths from Pneumonia reported at the Boston City Hall for the months of December and January, 1884–5, 1889–90, inclusive:

	1884-5	1885-6	1886-7	1887-8	1888-9	1889-90
December,	141	74	113	95	68	105
January,	103	83	91	183	92	332
Total,	244	157	204	278	160	437

This table shows us that almost twice as many deaths occurred in Boston during December and January, 1889–90, as in any previous five years during these months. Taking the month of January alone the average number of deaths is 110, while in January, 1890, there were 332 deaths due to pneumonia. Dr. Abbott's report on the epidemic of influenza of 1889–90 shows the same general ratio throughout the State; from almost every town the report is made that pneumonia was much more frequent than in previous years. Similar statistics may be found in the English collective report and in the French and German articles.

Careful clinical observation of the cases of pneumonia as seen in connection with influenza has led all observers to express the opinion that the pneumonia was not to be considered as the direct result of the influenza, but as an intercurrent disease; the influenza is the predisposing, not the primary cause of the pneumonia. Numerous bacteriological examinations have been made as to the etiology of pneumonia as associated with influenza, and the results bear out the opinion expressed by the clinizal observer that the pneumonia is not due to the influenza *per se*, as the same micro-organisms are found in pneumonia following influenza as in acute fibrinous pneumonia of the ordinary type.

All text-books of general medicine with which I am familiar, in speaking of the etiology of pneumonia, mention the bacterium described by Friedlander as an encapsulated coccus, but which is more properly a bacillus, as the organism which is generally formed in acute fibrinous pneumonia. This is a mistake. Friedlander, in 1883, described the organism known by his name and claimed that it was the cause of acute fibrinous pneumonia. In 1884 Frænkel described an organism morphologically very similar to the bacterium described by Friedlander, but entirely distinct in its biological characteristics. This is the organism known to science as the pneumococcus, and all subsequent observation has corroborated the statement of Frænkel that it is found almost invariably alone or associated with other micro-organisms in acute lobar pneumonia. This is not the place to discuss the question whether this organism is the chief etiological factor in the creation of pneumonia, but there is no scientific evidence in favor of the bacterium described by Friedlander. The pneumococcus of Frænkel bears various names, "diplococcus of pneumonia," "The pneumococcus," "lancet-shaped coccus of Talamon," etc. In 1886 Weichselbaum published the results of two years of very careful work on the etiology of pneumonia; in 129 cases he found the pneumococcus 94 times. I give a table of the organisms found in acute pneumonia as collected from the works of Weichselbaum, Wolf, Netter, Welsh, Banti and others:

Number of cases	391
Frænkel	288
Frænkel, with other pathogenic germs	7
Friedlander	62
Streptococci and stapylococci	26

Fifty of the sixty-two cases in which the Friedlander bacilli were found are described by Friedlander himself; so far as I know he has not written any article in support of his theory advanced.

We may consider that it is proved that the pneumococcus is almost always found in primary acute fibrinous pneumonia, whether or not we allow that this organism is the primary and sole etiological factor in the causation of this disease. Many examinations have been made as to the organism found in pneumonia accompanying or following influenza, and I wish to draw the attention of the Society to some of the most important contributions to this subject. Jaccoud (*La Semaine Medicale*, 1890, No. 7).

Twelve cases of pneumonia complicating influenza. In all the pneumococcus of Frænkel was found in the sputum, also several streptococci and the staphylococcus aureus were isolated.

G. Sée (Comptes Rendus. Tome CX, 1890, p. 197). The results may be tabulated as follows:

(1) In all cases of pneumonia following influenza the pneumococcus found but not in pure culture.

(2) In these pneumococcus found in pure culture in blood taken from the spleen by puncture.

(3) The identity of the organism obtained from the spleen was demonstrated by the inoculation of animals.

(4) G. Sée draws attention to the fact that the occurrence of the pneumococcus in the spleen demonstrates that pneumonia is a general infectious disease and not a local pulmonary disease.

Weichselbaum (*Wien. Klin. Wochenschrift*, 1890, Nos. 6–10).

In ten autopsies on patients who died of influenza he found acute suppurative processes in the sinuses connected with the nose; in seven of the cases there was pneumonia. In all these acute processes Weichselbaum found pneumococci, and in some of them streptococci or staphylococcus pyogenes aureus. He does not consider these organisms as the cause of the influenza, but simply as the cause of the acute processes associated with the influenza.

Prudden (*New York Medical Record*, 1890, p. 169).

In six cases of pneumonia following influenza the result was as follows:

(1) Pneumococcus in pure culture.

(4) Pneumococcus with streptococci and staphylococcus.

(1) Streptococci and staphylococcus.

I might give many more similar cases. The evidence is conclusive that in cases of croupous pneumonia associated with influenza, the same germ, the pneumococcus, is found as in cases of pneumonia occurring independently of influenza. The investigations of bacteriology lead us to the same conclusions which have been reached by the clinical observation of cases, namely, that the pneumonia found in cases of influenza is not the direct result of the disease *per se*, but that the influenza is the predisposing cause of the subsequent pneumonia.

Influenza is clinically and socially a disease of much importance and interest because of the severe and often prolonged disturbances of the system produced by it. The general symptoms are in severity out of all proportion to the local lesions demonstrated by physical examination. At the outset of the disease we have high fever, severe headache or backache, sleeplessness, or vomiting and diarrhœa; one or all of these symptoms may be present in an individual who on physical examination presents only the evidence of a pharyngeal catarrh or a bronchitis of moderate severity. As sequelæ of the disease we find as a rule protracted convalescence, often marked prostration, in some cases inability for physical or mental work, and occasionally neuritis or some systemic nervous disease. Investigation in other infectious diseases has demonstrated that these symptoms are dependent upon ptomaines, toxic bodies produced by the activity of the bacteria which are the cause of the disease. To my mind the strongest evidence in favor of the infectious character of influenza is to be found in the clinical evidence of the presence of some severe general toxic agent. Reasoning by analogy offers the only proof of the existence of such a ptomaine, as no work has been published as to the presence of any poisonous alkaloid in influenza cases.

Bacteria probably produce their injurious effects in infectious diseases in two distinct ways, first mechanically, and secondly by the ptomaines produced by their growth in the body. The bacilli of anthrax and tetanus may be chosen as representing the two extremes of these methods of action. If a susceptible animal is inoculated with the bacilli of anthrax it dies in twenty-four to forty-eight hours, and the minute blood-vessels are found to be absolutely filled with the large bacilli, often to such an extent that many of the capillaries are ruptured. The very number of the bacilli present are sufficient to mechanically interfere with the circulation, and produce a dearth of oxygen on account of the strong affinity of the bacilli for oxygen. On the other hand if an animal is inoculated with tetanus it dies just as soon, but no bacilli are found except at the seat of the inoculation. In the one instance the bacilli have caused death by mechanical interference with the oxygenation of the blood, in the other by the formation of a virulent poison. In man the anthrax bacilli do not always multiply with the rapidity that they do in more susceptible animals, and as the process is a slower one we often have symptoms of a general septic disease dependent upon the ptomaines produced by the bacilli.

Reasoning by analogy from the facts as established in other infectious diseases, we have good reason to suppose that the general symptoms of influenza, so varied in character, are all dependent upon some as yet unknown poison produced by the growth of micro-organisms.

As influenza presented many symptoms suggestive of an infectious disease on the first wide-spread appearance in 1889–90, numerous and careful bacteriological examinations were made to isolate if possible some specific germ. Many germs were isolated, but no one germ was found in a sufficient number of cases to warrant the conclusion that it might be considered as the cause of the disease. Such confusion existed that Koch expressed the opinion at the Tenth International Congress, that we must probably look for the etiological factor of the disease among the protozoa rather than among bacteria. In the light of the subsequent studies of Pfeiffer (January, 1892), it is probable that several observers found the germ which is now suggested as the possible etiological factor in the causation of influenza. Babes of Bucharest made the most careful experiments which are published at length in the *Centralblatt für Bacteriologie* for 1890, Vol. 7; he isolated seventeen germs, several of which in their morphological and biological characteristics resemble very closely the germ recently described. As a result of their investigations Weichsellaum, Prior, Strümpell, Prudden and others, all expressed the opinion that acute intercurrent diseases in influenza were to be considered as complications, and not as direct manifestations of influenza *per se*. Subsequent investigation has only strengthened this opinion. Ribbert alone (*Deutsche Medical Wochenschrift*, 1890, No. 15) expressed the opinion that the streptococcus pyogenes probably stood in an important etiological relation to influenza; his only reason offered in substantiation was that the streptococcus pyogenes was almost always found in cases of influenza. I should say that this reasoning was about as fallacious as that of the author who observed that cats were invariably found in families where cases of scarlet fever appeared.

In the *Deutsche Med. Wochenschrift*, 1892, No. 2, Pfeiffer published a preliminary report on "The Bacillus of Influenza," based upon work done at the Berlin Institute for Infectious Diseases. He published only his results, and reserves for a subsequent date the publication of the details of his work. I here insert practically a translation of the notes published by Pfeiffer, and a review of work described by his colaborators, Canon and Kitisato.

Pfeiffer.

(1) In the purulent bronchial secretion of all cases of influenza a definite bacillus was found. In uncomplicated cases these rods are the only bacteria present and are found in enormous numbers; often found in the protoplasm of pus cells, and may extend into the peribronchial tissue; in two cases found in the purulent secretion of the pleura.

(2) These bacilli are found only in influenza, as shown by numerous analyses in cases of bronchitis, pneumonia and phthisis.

(3) They disappear as the influenza passes off.

(4) Pfeiffer saw the same bacilli in the epidemic of 1889-90, in the sputum in large masses.

(5) They are very fine rods, similar to the bacilli of mouse septicæmia, but not as long; often arranged in threads. They are difficult to stain; they may be stained by a hot Ziehl solution or a hot Loeffler solution; they are more stained at the ends than in the central portion, so Pfeiffer thinks they have been seen by other observers who have taken them for cocci. [This describes an organism often called a "Belted organism."]

(6) They grow in one and one-half per cent. sugar agar as very fine colonies; they cannot be carried on beyond the second generation.

(7) Positive results on monkeys and rabbits. (What the results are remains a blank.)

(8) "From these results I consider myself justified as looking upon these bacilli as the cause of the influenza."

(9) Infection in influenza is probably through the medium of the sputum.

Kitisato. (Same journal as above.)

The colonies are so small and transparent that they may have been overlooked by previous observers. He says he has obtained pure culture of the organism directly from the sputum by a method employed to cultivate the bacilli of tuberculosis from sputum.

The colonies show no tendency to run together, but remain separate, offering a strong point in differential diagnosis. Kitisato has never seen this organism in other cases, though his experience has been large in analyzing the sputum in many cases of bronchitis, tuberculosis and pneumonia.

Canon. (Same journal as above.)

Canon has found the bacillus in the blood, and, in No. 3 of the *Deutsche Med. Wochenschrift*, reports that he has cultivated the bacillus from the blood. He employs a special stain:

Conc. aqueous meth. blue . . -	40
Eosin .5,70% alc. 100 parts	20
Aquam	40

The specimens remain in this solution three to six hours at 36° Cent., and are then washed in water. Canon reports that the bacillus may be carried on for several generations if the cultures are renewed every seven days.

Babes (*Deutsche Med. Wochenschrift*, Feb. 11, 1892) draws attention to the fact that in the epidemic of 1889–90 he found in several cases of uncomplicated influenza very fine rods in large numbers: their growth on glycerine agar was poor. Babes considers that these organisms are the same as the organisms described by Pfeiffer. Also, Klein (*British Medical Journal* of

January 23, 1892) reports that in 1889-90 he found in the blood of influenza cases fine bacilli, morphologically and biologically identical with the organisms described by Pfeiffer.

We have the following facts which strongly suggest that influenza is an infectious disease:

(1) Its appearance in epidemics; the manner in which it spreads from individual to individual.

(2) The symptoms suggestive of some toxic influence.

(3) Reduction of the general system and thereby induced susceptibility to disease.

(4) A germ has been discovered which may be the cause of the disease.

With all due respect to the exhaustive and exhausting investigations of the scientific observers, I cannot but close my paper with a quotation from Mrs. Thrale's Journal. In allusion to the rage for scientific experimentation in 1811, she writes: "Never was Nature so put to the rack, and never, of course, was she made to tell so many lies."

May not this be as true now as it was eighty years ago?

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A CASE OF SACCULATED BLADDER, WITH AUTOPSY.

BY A. T. CABOT, A.M., M.D.

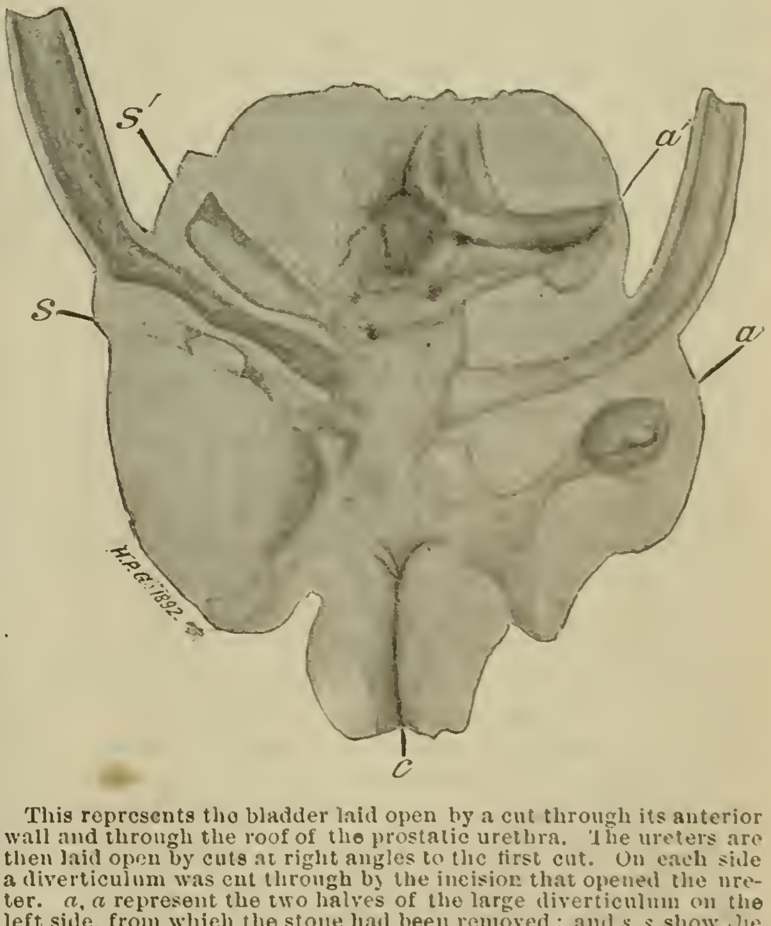
The following case of sacculated bladder presented certain points of practical interest. I will first report the clinical part of the case, and then will describe the pathological condition.

William H., consulted me first in November, 1889. He was then fifty-seven years of age, and had suffered with symptoms of stone for three or four years. As far as could be determined, this stone originated in the bladder, as he had never suffered from renal colic. In the middle of November I removed, by litholapaxy, a stone weighing 116 grains, and composed of uric acid and urates. He made a good recovery from this operation. The bladder was washed out with a litholapaxy pump on two subsequent occasions, the first time a small quantity of sand and gravel coming away, and the last time the washing being perfectly clear. He was not seen again until March, 1891.

At that time he again applied to me, and reported that, though very much more comfortable after the last operation, he was not entirely relieved of his symptoms, some frequency of passing water and slight pain, referred to the penis, continuing. He had used a catheter during this time every night, drawing each time from two to three ounces of residual urine. He had occasionally passed a little gravel. I sounded him without detecting a stone, and advised an ether examination.

This was made on the 18th of March, 1891. The bladder felt roughened to the sound, but no stone could be touched. For further exploration, I made a perineal incision, and the finger, introduced into the bladder, touched a little rough surface of stone rather high up on the posterior wall, where it could be barely reached with the aid of the hand above the pubes, pressing the bladder downward. It was made out that this bit of stone was a projecting portion of a calculus which was enclosed in a pocket, and it being impossible to dislodge it from this pocket by any manipulation of the finger, a suprapubic incision was made over the point of a sound, introduced through the perineal wound. Through this opening above, the stone could readily be reached. It was found to be about the size of an English walnut, and to be contained in a pocket, the neck of which was not larger than a small pencil, and attached to this was a little, roughened bit of bone, projecting into the bladder cavity. The neck of the sac was gradually enlarged so as to admit a pair of forceps, and after many attempts to withdraw the stone, it was finally broken by the forceps and removed piecemeal. It was difficult to remove the last fragments, but with a scoop and irrigation this was apparently accomplished. The bladder cavity now seemed to be free.

He had a slight chill the following day, with a temperature up to 102°. From this time on he did pretty well until the 6th of April; but at that time the urine still contained an abundance of pus, and it being necessary to readjust the tubes, an examination was made under ether, and the bladder was searched without anything being found. The opening into the sac had, at this time, contracted so that it could with difficulty be found. The temperature again rose to 102° after this operation, but two days later came back to the normal point. The urine, which had hitherto been abundant, began soon after this to diminish in quantity. It contained a little albumen, but no more than the pus would account for. No casts were ever detected.



This represents the bladder laid open by a cut through its anterior wall and through the roof of the prostatic urethra. The ureters are then laid open by cuts at right angles to the first cut. On each side a diverticulum was cut through by the incision that opened the ureter. *a*, *a* represent the two halves of the large diverticulum on the left side, from which the stone had been removed; and *s*, *s* show the two halves of the other pocket, with a stone still in it. The little openings into other diverticula may be seen on the posterior bladder wall. The whole specimen is much shrunken by alcohol. The granular, ulcerated condition of the right ureter is indicated. The left ureter is smooth, but also somewhat dilated. At *c* is seen the prostatic urethra.

From this time on, in spite of all efforts to assist and supplement the action of the kidneys, he gradually failed, with a progressively diminishing amount of urine; and about six weeks after the last examination he died.

At the autopsy nothing of especial importance was found, except in the urinary organs. The bladder was much thickened and inflamed, the mucous membrane being highly congested and eroded in places. The wall of the bladder was not much trabeculated. The ureters on both sides were somewhat dilated, and were slit up with the scissors directly through to the bladder. These incisions passed directly through two pockets arranged symmetrically, one associated with each ureter, lying a little above and outside of it. One of these pockets was the one from which the stone had been previously removed. It still contained a little fragment of stone. On the other side the pocket was very much more narrow, opening into the bladder by a very small opening, and this contained in the upper part a little calculus about the size of a kidney bean. This smaller pocket lay rather closer to the ureter with which it was associated, than did the pocket on the other side. A careful search of the posterior walls of the bladder revealed the existence of a number more pockets similar to the last one found, — that is, having very small communications with the bladder. A careful search among these failed to show any other containing a stone.

The right ureter, which was that one associated with the smaller pocket, which lay closer to it than was the case on the other side, was considerably distended with thick, purulent material, and the pelvis of the kidney on that side was slightly dilated and filled with the same sort of grumous material. This right kidney was somewhat shrunken, in a state of interstitial nephritis, with which was associated a pyelo-nephritis. On the other side the ureter was more nearly normal, though somewhat dilated. That kidney, the left, was in a state of moderate pyelo-nephritis.

The condition, then, which led to the fatal result was an interstitial nephritis, with a pyelo-nephritis superadded to it. The pyelitis was no doubt secondary, and was unquestionably aggravated by the obstruction to the ureters due to the pressure upon them of the sacculated stones.

The symmetrical disposition of the sacculi, and the thickness of their walls led me to think that there might be some congenital cause for them. I therefore had the walls of these pockets carefully examined under the microscope, and found that the muscular coat of the bladder ran a considerable way up on the pockets and ceased towards the apex, — the outermost part of the pockets being simply composed of the mucous membrane surrounded by fibrous tissue.

In regard to vesical diverticula, Orth says they are situated preferably on the sides and base of the bladder, and also on the posterior wall. They are either congenital or acquired. In the congenital cases, — also in the acquired cases which are brought about by the pressure of stones, — we find all the coats of the bladder in their walls, even the muscular layer. On the contrary, in the greater number of the acquired diverticula, the condition is a hernia of the mucous membrane between enlarged bands of muscular tissue. Only when they are small can a part of the muscular coat still be shown in their wall.

These herniæ of the mucosa are often very numerous in hypertrophied bladders, and may be symmetrically arranged in accordance with the arrangement of the muscular bundles. They are at first quite small and flat, but become more rounded and larger, until they reach the size of a walnut, an egg, or a child's head. The opening between the muscular fibres, at first angular, becomes more rounded with the increase of size, but may be very small, even when the diverticulum is large.

In my case the way in which the muscular coat ran part of the way up on the walls of the diverticula, seemed to show that in part, at least, they depended upon a congenital condition for their production. The openings in all of them were round and very small, instead of irregular, as you would expect if the mucous membrane had simply pushed out between the muscular bundles. The muscular tissue surrounding their necks was more abundant and ran much further up on their walls, than would be the case if it simply represented the muscular bundles which had been pushed aside as the mucous membrane forced out between them. So that I am inclined to regard this as a case of congenitally diverticulated bladder, in which perhaps the mechanical effects of the pressure of urine had some influence in enlarging the pouches. The fact that there were stones in but two of them, and that in one case the stone was very small, shows that they were not pockets formed by the pressure of stones.

This case illustrated very well the importance of making a digital exploration of the bladder in cases of uncertain diagnosis, where persistent symptoms continue, and also showed how much more easily such conditions can be reached and treated by supra-pubic incision than through the perineum.

I think there can be but little doubt that it is better practice to crush a stone *in situ*, when it is so thoroughly encapsulated as in this case, rather than to try to free it by incision. For a considerable incision in the neck of the sac would have exposed the patient to the danger of urine infiltration and perivesical abscess.

Finally, the possibility of the *symmetrical* arrangement of pockets should be borne in mind when operating on these cases, and a knowledge of this point may lead to the discovery of pouches that would otherwise be overlooked.

Clinical Department.

ACONITE POISONING.

BY SAMUEL Q. ROBINSON,
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J. A., private, Company D, Twenty-first Infantry, a prisoner in the post guard-house, recovering from a debauch, at about 4 P. M. on July 3d, took, as nearly as can be ascertained, two drachms of tincture of aconite. I was summoned as soon as the fact was known, and reached him perhaps an hour after the ingestion of the poison, the nature of which was at once determined by the tingling of the tongue produced by a remaining drop. He was recumbent, tossing his limbs about, excited, complaining of numbness and cramps in the arms and hands, but making no mention of any odd sensations about the lips or tongue until after recovery; with radial pulse imperceptible, carotid 119, respirations 19 (normal in character at first, but afterwards becoming shallow), pupils slightly dilated but responsive to light, nose pinched, extremities cold, face bedewed with cold sweat, at times lapsing into unconsciousness. It required but little effort to hold him when I passed the stomach-tube, but the muscles of the jaw seemed to be endowed with unusual power, since the gag could not be rotated when the teeth were set. The symptom-complex typified approaching dissolution.

Between a tenth and a fifth of a grain of apomorphia, hypodermatically, produced vomiting; but, as he could not be made to swallow water enough to ensure the removal of the poison, the stomach was thoroughly washed out with the pump and stiff tube. Before he was thought out of danger, at 8 P. M., there were given, at irregular intervals, as demanded by his varying condition, hypodermatic injections, amounting to, in all, twenty-five minims of tincture of digitalis, forty-five minims of aromatic spirits of ammonia, and two drachms of brandy. Hot-water bottles to the feet, and mustard plasters to the precordia, were also used.

Urine was passed in small amount at 10 P. M. on the following day, at which time the patient had completely recovered as far as the aconite was concerned. The case was so urgent that I used the *aromatic spirits* of ammonia which had been brought by mistake, and did not sufficiently dilute it for subcutaneous use. Some induration, too, followed the injections of brandy which were all made deep in muscular tissue.

Recently, I was called to a case of impending heart-failure in an alcoholic subject who had suffered from influenza in the winter and more recently from pneumonia. He had just arrived at the post, 5,000 feet elevation, after a two days' stage-ride, during which time he had scarcely eaten anything. For the relief of some pulmonary symptoms, he had taken in the preceding twenty-four hours six doses of a mixture containing four minims of tincture of aconite root to the dose, and as he had considered that "a small mouthful" was equivalent to the teaspoonful ordered, the amount taken was considerable. The symptoms came on three hours after the ingestion of the last dose. There was numbness of the limbs but no tingling of the tongue or lips. How much the symptoms were due to the aconite and how much to other existing causes of cardiac weakness is conjectural.

Atropia first, and when that proved useless, strychnia, both hypodermatically, as nothing could be retained on the stomach, produced in turn slight but characteristic symptoms in ten to fifteen minutes, but only an evanescent improvement. The effects of digitalis, which was next given, were not markedly shown for perhaps thirty minutes, but, when they did appear, resulted in permanent benefit, and a second injection of ten minims again was all that was needed. Twenty hours intervened between the acts of micturition.

So far as these two cases warrant the deduction, digitalis is superior to atropia or strychnia as a physiological antidote for aconite, but stimulation with alcohol or ammonia will usually be required to tide over the interval before digitalis acts.

I may be permitted to remark that the aconite in both cases was obtained elsewhere than at post.

In consequence of the preparations for combating a possible outbreak of cholera in Germany, the prices of disinfecting substances have risen quite materially. Crude carbolic acid has risen 50 per cent., chloride of lime 10 per cent., perchloride of mercury, 50 per cent., and permanganate of potassium about 10 per cent.

Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D.

(Concluded from No. 7, page 164.)

THE INFLUENCE OF THE DOCTRINE OF CONTAGION UPON THE DEATH-RATE FROM TUBERCULOSIS IN THE CITY OF PHILADELPHIA.[11]

Flick gives a table of the general mortality and the mortality from consumption for the years 1861–91, inclusive, together with the estimated population of Philadelphia for each year, and says that if we study the mortality-rates from pulmonary tuberculosis, side by side with the number of deaths from the disease and the population for the thirty years as a whole, we shall see that during the entire period there has been no material decrease in the death-rate from this cause until the last few years (that is, since the doctrine of contagion has been more generally accepted) and that the decrease becomes more rapid as we approach the present year, the actual decrease from 1881 to 1891 amounting to a saving of 784 lives a year, reckoning from the present population. He considers this most fortunate reduction can only be explained on the theory of the contagiousness of phthisis. Since this question has been agitated in the newspapers, most people, even though skeptical, have adopted preventive measures, while the majority of physicians have urged them, while attending persons suffering from the disease. That so excellent a result should follow such trifling efforts is in accordance with what we know about the preventability of tuberculosis. All that is necessary is to confine and destroy the pus, and the most intimate relations between sick and well can be safely maintained.

A STUDY OF THE PROCESSES WHICH RESULT IN THE ARREST AND CURE OF PHTHISIS.[12]

In a paper with this title, Dr. H. P. Loomis thus summarizes the results obtained from the study of the records of 1,146 post-mortem examinations made at the dead-house of Bellevue Hospital.

(1) Out of 763 persons dying of a non-tubercular disease 71, or over 9 per cent., at some time in their life had phthisis, from which they had recovered.

(2) The new fibrous tissue by which the advance of the disease was apparently checked, and the cure effected, developed principally by round-cell infiltration of the interlobular connective-tissue, which in some instances had increased to an enormous extent. Some of the new fibrous tissue was formed later by round-cell infiltration in the alveolar walls and around the blood-vessels and bronchi. Pleuritic fibrosis appears to be secondary to tubercular processes in the lung-substance. The interlobular connective-tissue is the primary and principal source of the fibrosis.

(3) Tubercle bacilli were present in the healed areas in three out of twelve of the lungs examined. These healed areas did not differ in their gross or microscopical appearances from those in which they were not found.

(4) Thirty-six per cent. of all cases where the lungs were free from disease, showed localized or general adhesions of the two surfaces of the pleura.

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[11] Medical News, May 14, 1892.

[12] New York Medical Record, January 9, 1892.

THE CONDITIONS OF CURE IN CONSUMPTION.[13]

Burney Yeo says that it is generally admitted that pulmonary tuberculosis in certain forms and under certain conditions is commonly and spontaneously cured, and, secondly, that phthisis is rarely cured, meaning by phthisis pulmonary tuberculosis which has reached such a degree of development as to seriously affect the general health and to give rise to easily recognized physical signs. Yet whenever a new remedy is announced it is seriously tested in many cases in which cure is inconceivable, and these hopeless cases are brought into the statistics to discredit the remedy. One of the chief conditions for cure is, of course, its early recognition, and for that reason he is disposed to consider the early occurrence of hæmoptysis as favorable, in that it calls attention in an impressive manner to the disease in a stage where it might otherwise be overlooked. At the same time he warns against considering those cases phthisis in which marked physical signs are found at the apex, due to a dry pleurisy of rheumatic origin. Other conditions which favor cure in the more advanced stage, are the natural tendency in the evolution of tubercle to fibrous change, the absence of tissue irritability — the absence of that tendency to acute inflammatory reaction to the bacillary infection, or of marked hereditary predisposition — and the possession of a sound, vigorous constitution. Another possible condition is a mitigated virulence of the bacillary infecting agent and the small number that originally gain access to the lungs. The channel by which the bacilli reach the lungs has also a modifying influence, the conditions being much more unfavorable when they enter by the blood-vessels or lymphatics than with the inspired air, owing to the wide diffusion of the infecting agent. Another condition is the selection of a proper climate; but the most essential of all is the ability to digest and assimilate nourishment, for the therapeutic measure in which the most faith must be placed is hyperalimentation. In treatment by drugs, repeated and continuous counter-irritation is almost universally esteemed as curative, and in his experience the diligent use of antiseptic inhalations has almost invariably been followed by considerable, and in some cases by lasting, benefit. Of antiseptics given internally, none have seemed so uniformly beneficial as creasote or guiacol. He has seen some good results from tuberculin and thinks it will survive in a modified form the temporary opposition to it.

ACUTE PULMONARY ŒDEMA.[14]

A. A. Smith says that hydræmia, changes in the walls of the blood-vessels, an enfeebled heart and an obstruction to the blood flow from any cause are well recognized causes for the occurrence of œdema in any part, but he is convinced that interference with the functional activity of the nerve supply to the blood-vessel wall plays an important part in the production of œdema, and is the only satisfactory explanation of its cause in many cases. Especially is this true of pulmonary œdema. In the sudden attacks of this sort which come on suddenly in the various forms of Bright's disease its occurrence must be attributed to the influence of the uneliminated poisons in the nervous system and especially the ganglionic system. As regards measures of relief the orthodox treatment by dry cups can be of very little value. Alcoholic stimulants may actually do harm by increasing the difficulty, the left ventricle trying to force the blood into an arterial system already obstructed because of the stasis in the venous system. The most successful treatment in many cases he has found to be a combination of strychnine and atropine hypodermically, and nitro-glycerine by the mouth. One-hundredth of a grain of atropine and one-fiftieth of a grain of strychnia are combined, while one-hundredth of a grain of nitro-glycerine is given by the mouth. These are usually repeated in two hours. After the first repetition the atropine is stopped, but the other drugs are continued every two hours till relief is marked. When it occurs as a complication of acute renal disease and in renal disease accompanied by hypertrophied heart, opium and nitro-glycerine have given the best results; one-sixth of a grain of morphine and one-hundredth of a grain of nitro-glycerine every two hours till relief.

When cyanosis with pulmonary œdema is very marked, oxygen has seemed to give relief to the dyspnœa if cautiously administered. The most satisfactory results have been obtained by mixing it with atmospheric air by holding the tube perhaps two inches from the patient's mouth. Quickly acting cathartics will aid in giving relief. In the acute general pulmonary œdema occurring in connection with pneumonia, the strychnine, atropine and nitro-glycerine have often been of service.

A CASE OF SPONTANEOUS PNEUMO-THORAX AND PNEUMO-PERICARDIUM.[15]

Lundie records an interesting case which occurred in a lawyer's clerk, twenty years of age. While sitting quietly at home after dinner the patient felt a sudden severe pain in the region of the left shoulder-blade, which rapidly spread downward to the axillary region and was followed by so much breathlessness and distress on the slightest exertion that he was forced to lie in bed, but while there was very comfortable. On that day he had had to carry a number of heavy books at the office, and had also been swinging by his hands from a door, but had felt no discomfort at the time. Signs of pneumo-thorax were found on examination, the chief peculiarity being a displacement of the heart backwards instead of to the right. In ten days he returned to work, no unequivocal signs of disease being found in the chest after recovery. About two months later, while walking quietly home from his office, he again felt pain in his left side, but the onset was more gradual than on the previous occasion. A tympanitic area was found which occupied the position of a slightly enlarged pericardium, the heart falling to the most dependent portion of it in each position of the patient. The heart sounds were obscured by irregular tumultuous tinkling accompaniments with intense metallic resonance. Recovery gradually took place and when seen a year later he was leading an active life, doing his office work regularly and playing cricket each evening. Lundie thus summarizes the most remarkable points in the history of this case.

(1) The presence of a chronic morbid process in the chest sufficient to lead ultimately to rupture of the pleura and pericardium with an almost entire absence of symptoms.

(2) The occurrence of pneumo-thorax in conditions of apparent health.

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[13] British Medical Journal, January 16, 1892.

[14] New York Medical Record, December 19, 1891.

[15] Edinburgh Medical Journal, 1891, vol. xxxvii, p. 220.

(3) Backward displacement of the heart while pneumo-thorax was present.

(4) Recovery from pneumo-thorax without any signs of inflammation or effusion.

(5) The occurrence of pneumo-pericardium after an interval, also in conditions of apparent health.

(6) The entire absence of irregularity of the pulse, disturbance of the circulation or interference with the general health while air was present in the pericardium.

(7) Recovery from pneumo-pericardium without any signs of inflammation or effusion except the small, perhaps normal, amount of fluid in the pericardium, indicated by the auscultatory signs.

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RECENT PROGRESS IN MEDICAL CHEMISTRY.

BY WILLIAM B. HILLS, M.D.

(Concluded from No. 6, page 141.)

ACTION OF MICROPHYTES ON SOLID COMPOUNDS OF ARSENIC.

Selmi was the first to advance the idea that the injurious effects produced by arsenical colors in wall-papers and fabrics may be due to the action of volatile compounds of arsenic produced by the vital processes of micro-organisms. The results of most of the experiments that have hitherto been made for the purpose of testing this theory have been adverse; at the same time it is a matter of common observation that gases having the odor of garlic and the characteristics of arseniuretted hydrogen may under suitable conditions be evolved when organic mixtures containing arsenious oxide undergo putrefaction.

Dr. B. Gosio, assistant in the scientific laboratories of the Italian Bureau of Health has recently made a very interesting and important preliminary communication, bearing upon this question, in a paper presented to the last Congress of Hygiene held in London, and later issued by the Italian Ministry of the Interior.[17]

Gosio first prepared some potato pulps containing from 0.05 to 0.1 of arsenious anhydride to 1,000 of pulp. These, distributed in several broad Petri capsules, were kept for some days uncovered in a cellar. Soon the growth of moulds and of the common bacteria of the air was very abundant, and at the end of one week a strong smell of garlic began to be perceived, showing that gaseous arsenical emanations were taking place. The cultures were then placed in a large damp chamber, from which, by means of an automatic pump, a continuous current of air was drawn, and this was made to bubble during about two weeks through a solution of nitrate of silver. A strong reduction of this salt, together with the formation, in Marsh's apparatus, of arsenical rings and spots obtained from the liquid after the removal of the silver, were the indisputable proofs, that the cultures had developed a reducing arsenical gas.

While this was a positive indication of great value in reaching a conclusion, other arsenical pulps in which also germs of many species had been developed, gave no evidence of having undergone a similar decomposition. This disparity of results, while on the one hand justifying the discordant conclusions reached by the various investigators, must, on the other hand, necessarily be accounted for by the generic diversity of the germs developed in the two cultures, since all the other conditions of temperature, humidity, atmosphere, nutrition, etc., had remained unchanged. Here began the work of separating the germs, and the series of experiments on pure cultures, of which the author will treat in detail in his larger work. Of the germs isolated, some belong to the moulds, others to the schizomycetes; among the former are noted penicillium glaucum, aspergillum glaucum, and, above all, as greatly predonderating in the mother culture, mucor mucedo.

Each of the germs obtained in pure culture and others also which are most commonly kept in the laboratories (B. radiciforme, B. prodigiosum, B. subtile, yellow sarcina, etc.) were cultivated separately in sterilized potato pulp rendered arsenical by 0.05 gram per 1,000 of arsenic acid. The cultures were kept at the temperature of the surrounding air (20–27° C.), and in diffused light. After one month of observation the author was able to ascertain that the production of arsenical gas had taken place only in the cultures of mucor mucedo and, in a far less degree, in those of aspergillum glaucum. It was not perceived in any of the other cultures.

In view of these facts, special importance attaches to mucor mucedo, a mould very widely diffused in our atmosphere and capable of reducing remarkable quantities of arsenic acid, as the author has been able to ascertain by strict chemical researches on the abundant cultures carried on in the presence of arsenic anhydride and of alkaline arseniates.

In another series of experiments, the author inquired whether the activity of the mucor could be extended to those preparations of arsenic which are utilized as colors. To this end the cultures were carried on in the presence of Scheele's green, Schweinfurth green, realgar and orpiment. He sums up his conclusions as follows:

(1) Mucor mucedo tolerates remarkable quantities of arsenic not only without injury, but with advantage to its nutrition, for it grows more vigorously.

(2) Many solid compounds of arsenic are, through the biological activity of the fungus that vegetates in contact with them, transformed into gaseous combinations, of which arseniuretted hydrogen is certainly one.

(3) This transformation is brought about more or less rapidly, but is constant and lasting in the case of all the oxygen compounds of arsenic, including arsenite of copper, which is the basis of the green arsenical colors. It does not appear to take place in the case of the sulphides of arsenic although the presence of these in the cultures is not at all detrimental.

(4) In given conditions of humidity, temperature, and light, arsenical gases may be given off from hangings colored with Scheele's and Schweinfurth green, through the vegetation of the mucor; the author cannot yet say whether of all the mucorini.

The author does not deny the possibility that poisoning from arsenical hangings may be caused through inhaling the fine dust. But he thinks that this can happen only as an exception, since the poisonous character of arsenical hangings is generally favored by a certain degree of humidity, while one essential condition of the production of the fine dust is a certain degree of dryness of the walls to which the papers adhere.

His investigations do not yet permit him to say whether the product of the action of mucor mucedo on the oxygen compounds of arsenic is entirely arseniuretted hydrogen. But he has reason to think that it is not. Special studies have been entered upon for the purpose of elucidating this point.

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[17] Science, February 19, 1892, p. 104.

Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

(Continued from No. 7, page 170.)

Eighteenth Annual Meeting, held in New York, June 22, 23 and 24, 1892, the President, Dr. C. L. Dana, in the Chair.

Dr. G. J. Preston, of Baltimore, read a paper on

SOME CONTRIBUTIONS TO THE MUSCULAR SENSE.

He thought that it might be considered definitely proven that the muscular sense, or at least one part of it, was composed of afferent impulses which were entirely independent of general sensibility. The next step that suggested itself was the starting-point of these afferent impulses. Clearly, as several observers had noted, the muscles alone (that was, sensations coming from them) could not give us the information we required as to the position of our limbs. How, for example, could we be made aware of the position of the forearm produced by contraction of the biceps if the impressions came solely from this muscle? We might obtain in that way some general information as to the position of our limbs by means of the memory of the muscular contraction and the result produced, but it was impossible to conceive that we could in this way be kept informed of the exact position of our limbs. That the muscular element was a very important factor was proven by the fact that the muscular sense of the ocular muscle informed us of the degree of convergence of the visual axes, and consequently was a most necessary element in our appreciation of the size and distance of objects. Undoubtedly the tendons, the joints and their coverings, and perhaps the bones, all aided in producing the posture sense, or rather from these proceeded nerve fibres conveying posture-sense impressions. The course of these impressions was almost certainly through the posterior columns of the cord. The loss or impairment of posture sense was an almost constant symptom in sclerosis of the posterior columns. If it were admissible to draw conclusions regarding the muscular sense from the symptomatology and pathological anatomy of tabes, it would seem that posture-sense impressions ran a continuous course in the posterior columns. At all events, we found in tabes loss of muscular sense, with often little or no involvement of skin sensibility, and only the posterior columns involved. It seemed to the speaker probable that the fibres conveying posture-sense impressions passed into the restiform body, thence to the cerebellum, and on to the great brain. In three cases of tumor of the cerebellum with autopsies, he had observed loss of posture sense without impairment of general sensibility. In one of the cases the loss of posture sense was practically absolute, and the tumor was found to involve the middle lobe and superior peduncles, pressing also on the corpora quadrigemina. In the other two cases the loss of posture sense, while not nearly so marked as in the case related, was yet decided. It remained, finally, to consider the probable centre for posture-sense impressions, and here speculation was most rife. Following Ferrier and his school, we should place this centre in the hippocarpal lobe. This, however, would be assigning to it a closer relationship with general tactile sensibility than the facts would seem to warrant. A far more reasonable supposition was to consider this centre to be in the closest possible relationship with the motor centres. He would be inclined to place it in either the convolutions continuous to the parietal convolutions, or what seemed still more reasonable in one of the several distinct layers of cells which went to make up the cortex of the motor area.

A summary of the speaker's deductions was as follows: (1) The posture sense was composed of afferent impulses derived from muscles, tendons, articulations and their coverings, and bones. (2) It was independent of and separable from general tactile sensibility, and possibly could be distinguished from the other members of its class, as the pressure sense, for example. (3) The course of these impulses through the cord was almost certainly by means of the posterior columns. (4) They probably passed into the corpus restiform and cerebellum. (5) In all probability they passed through the anterior portion of the posterior third of the posterior limb of the internal capsule, occupying an intermediate position between the motor and sensory fibres in this region. (6) Without positive data on either side it would seem most probable that the centre for the posture sense was located in one of the cell-layers of the motor cortex.

ON THE EXTENT OF THE VISUAL AREA OF THE CORTEX IN MAN, AS DEDUCED FROM A STUDY OF LAURA BRIDGMAN'S BRAIN.

Dr. H. A. Donaldson, of Worcester, made some remarks on this subject.

Vision in Laura Bridgman's case had been lost in the left eye at twelve years of age. The right cortex was found to be thinner than the left when first examined. Compared over the posterior portion of both hemispheres, it was found that on the right side the cortex was thinner over an area which corresponded pretty nearly to that described by Jones as representing the visual area as determined by study of isolated lesions. A study of cases in which the sense organs had been lost in early life, as in animals where it had been experimentally removed, might materially aid in marking the sensory areas.

THE CRIMINAL BRAIN; ILLUSTRATED BY THE BRAIN OF A MURDERER.

Dr. Donaldson read an additional paper on this subject. He said that a specimen obtained from Dr. Van Gieson had been examined with a view to determine whether it corresponded with Benedict's notion that confluent fissures were characteristic of criminal brains. Examinations of this particular brain, that of a murderer, of undoubtedly criminal characteristics, showed that it did not correspond with the type as described by Benedict. As against the idea of this observer, Eberstaller had advanced the fact that many of Benedict's so-called characteristics were to be found in the normal brain. Giacominni had determined by comparison that there were more confluences in normal brains than in those of criminals. If increased fissuration was a criminal characteristic, this, other things being equal, implied an increase of gray matter; and, therefore, low-type brains might be said to have proportionately a larger amount of gray matter. Undoubtedly, the criminal brain could be picked out of a mixed lot, but only by virtue of general characteristics and there could be no certainty that all criminal brains could be thus selected. The characteristics of degeneracy were such as were to be found about the rest of the body, and were not yet sufficiently marked to be expressed in a systematic manner.

Dr. Collins said, that, from a somewhat limited experience at three or four autopsies on murders, he was not prepared to say that there was a criminal brain, although there was often found in such, fissural and gyral peculiarities which merited study and observation. In the autopsy on a murderer who had lost his life in attempting to take that of a New York financier, the speaker had found really remarkable structural changes; and whether these were the result of retrograde changes during the life of the murderer, or an inherent structural absence from the beginning, he could not say. The fissure of Rolando was very shallow; the gray matter thinner than normal; the ascending parietal convolution was small; and the entire left hemisphere gave an idea of changes from the normal in conformation. Further careful comparisons between the brains of the known criminal class with those of a known high order, was necessary before any valuable conclusions could be drawn.

Dr. Charles K. Mills believed that there were many misconceptions on the part of those who criticized the observers who had reported aberrations and irregularities in the brains of criminals. No one believed that all criminals presented a brain anatomy that would enable them to be ranged under a special type. Criminals belonged to very different classes. A criminal type of brain could be expected from those who were victims of a bad heredity or very early arrest. Paranoiacs, criminals, idiots, imbeciles, those generally who were victims of arrested or abortive development would probably present brain abnormalities even of a gross kind. The brain shown by Dr. Donaldson exhibited what seemed to him to be evidences of aberration, particularly in the parieto-occipital region. The subject was one, however, that could only be settled by careful and prolonged investigation. He could not believe with Professor Wilder that it was best to disregard altogether the study of the brain of lower animals, as a help to a proper comprehension of human cerebral anatomy. The study of fœtal brains was, of course, of the greatest importance, but so also was the study of the brains of apes and those of the lower animals.

Dr. Knapp had nothing to say as to the anatomical conditions, but he wished to support Dr. Mills's views as to the distinction between criminals. It was as vague to speak of a criminal brain as it would be to speak of an insane brain, classing together indiscriminately mania, melancholia, paranoia, and general paralysis. Before we could speak definitely as to the criminal brains, we must study the criminal history and the condition of the criminal himself, supplemented by a careful anthropometrical examination, as well as a study of his brain.

Dr. Donaldson was glad to hear that those who had discussed the question did not consider Benedict's view as tenable. The main advance would probably be when they could say that such and such were factors of the criminal brain, and then proceed to test this with statistical records.

DESCRIPTION OF A CHINESE BRAIN.

Dr. F. X. Dercum, of Philadelphia, gave the record of such an examination. The measurements of the skull gave twenty-one inches, or 53.3 cm. as the greatest circumference. Naso-occipital arc 32 cm.; naso-bregmatic arc 13 cm.; bregma-lambdoidal arc 12 cm.; and lambdo-occipital arc 7 cm. The brain weighed, without the dura and without draining, 47 ounces. It was anæmic but not œdematous. In the right cerebral hemisphere, the fissure of Sylvius was very short, and turned sharply up, ending at a point just vertically below the lower end of the inferior retrocentral fissure. The fissure of Rolando was normal. It did not quite reach the longitudinal fissure above. The central convolutions were narrow, measuring about two cm. in width. The first and second frontal fissures were distinctly outlined, and did not run into other fissures. The inferior and superior præcentral fissures were distinct and normal. The interparietal fissure was anteriorly connected superficially with the retrocentral, but was separated by a low, bridging convolution. It did not run into the occipital lobe, but curved up and dipped into the longitudinal fissure. The anterior occipital was plainly marked. The parieto-occipital fissure was deep and wide, and on opening it, a small convolution laid at the bottom. There was no inferior *pli de passage.* The first temporal fissure ran into the fissure of Sylvius. In the left hemisphere the fissure of Sylvius was normal. The first temporal fissure ran into it, as did the fissure of Rolando. The fissure of Rolando was marked, not broken, but ran into fissure of Sylvius. First and second frontal and præcentral, normal. Interparietal, marked, and ran into occipital lobe. Parieto-occipital fissure resembled that on right hemisphere. Anterior occipital fissure marked. No inferior *pli de passage.* First temporal ran into fissure of Sylvius, and was broken in two places.

In addition to the above enumeration of confluences, it should be stated that in all of the brains of Chinese so far examined an unusual tendency to transverse or perpendicular fissuration was present. There was also unusual sinuousity of the fissures. Of the gross peculiarities there was a marked obliquity or eversion of the basal surface of the frontal lobe. In both of the previously described specimens of the writer, complexity was given to the frontal lobes by the appearance of well-marked medi-frontal elements. In the present specimen an added frontal fissure was present on the left lobe, but was comparatively short. In the right lobe traces of it only were found. In both of the former specimens the cuneus and the occipital lobe were noted as rather small; this held good in regard to the present case.

In conclusion, these brains, owing probably to the unusual sinuosity of some of the fissures, together with the excessive transverse fissuration, had a physiognomy, as it were, of their own. They certainly, in general appearance, looked different from the average white brain that we handled, and very different from the brain of the negro.

Dr. Wilder thought that certain of these investigations might be upon a somewhat illogical basis, in speaking of the confluence or continuity of fissures, without being sure what was the depth of the fissures throughout their whole length. Dr. Dercum had said, with much frankness, that in nothing connected with this line of study was the personal equation so present or so dangerous as in the study of fissures. Where a number of brains of different races could be got together, the fissures in various parts should be accurately measured and sounded, and composite photographs should be taken; and in this way, perhaps, it would be possible to generalize. Dr. Dercum said he had occasionally seen in the white brain the identical characteristics found in his Chinese brain. This brain was that of a Coolie, certainly, that of a Mandarin might be different. Dr. Wilder added, that, though it might not be possible out of a number of brains of different races to single out any considerable number of factors which might be deemed as undoubtedly characteristic of race, there might be found combinations of factors which would assist in designating certain brains as conforming to a true type.

Dr. Dercum desired to express surprise at the stand taken by Dr. Wilder in reference to the value of studies in comparative anatomy. He did not wish to underrate the importance of embryological studies, but it must be remembered that in the higher organisms the tendency was for the embryo to accomplish by short cuts the final differentiations. And we could not hope to trace the philogeny of any animal, much less so complex a one as man, from studies of the embryo.

Dr. James Hendrie Lloyd, of Philadelphia, read a paper on

THE ASSOCIATION OF HYSTERICAL TREMBLING AND ANOREXIA NERVOSA, WITH REPORT OF A CASE.

He reported the case of a young woman who had been first observed at a remote farm-house in Pennsylvania. She had then been ill for two years. She was suffering with a peculiar, rhythmic, constant tremor, which was, however, not paralysis agitans. The tremor occurred in waves of exacerbation and opisthotonic spasm every minute or so. The patient had hysterogenic zones, pressure over which caused the spasm. She had also the condition described by Gull as anorexia nervosa. By a mistake, a large dose of ordinary saltpetre had been given instead of sulphate of magnesia. While no harm had directly resulted from this error, the mental disturbance had been such that regurgitation of food had set in, and this had become the most pronounced complication in the case. The patient was found lying upon her side, with cloths under her chin to catch the regurgitated material. She was emaciated to the last degree. There was no atrophy, but simply inanition. This condition was followed by true hysterical retention of urine, lasting sometimes for two days. Upon removal to a private hospital, the tremor had greatly subsided, and the regurgitation of food had entirely stopped.

Dr. Riggs cited the case of a woman under his care, believed to be suffering from hysterical tremor. It was peculiar, in that the attack came on only during the morning hours. He was unable to find any of the stigmata commonly present. There was persistent nausea and continuous headache. Under the usual therapeutic endeavor, patient had steadily improved.

Dr. Webber said that these patients did not really swallow, at least the food did not pass into the stomach. If a tube was passed into the stomach, and food was made to pass down it, they did not vomit. If taken away from home for a time, the symptoms ceased, and they were able to take food.

Dr. Preston said it was necessary to distinguish between hysterical tremor and the *tremblement nerveuse* of Charcot. There was an hysterical tremor due to distinct cortical inhibition; an absence of stimuli sufficiently close together to ensure summation, and hence there was a series of movements which resulted in tremor. In a case of his, of hysterical anorexia with nervous tremblings at intervals, the patient had lost fifty per cent. of body weight.

Dr. Mills had seen Dr. Lloyd's cases, and considered the diagnosis correct. He thought it important to determine that tremor or abnormal movements were not purely hysterical or associated with melancholia or some organic disturbance. A diagnosis of the hysterical character of the tremor was to be made chiefly from the association of other hysterical conditions. As to the prognosis, many of such cases would outlast the medical observers. A case of demoniacal trembling, with choreiform and other movements, of which he knew, had lasted already thirty years, and would probably persist during the patient's life.

Dr. Sachs said, that pronounced cases of hysterical anorexia, with trembling, were to be met with here, as in Paris. The former condition was extremely frequent. In the public institutions in which these cases were seen, both among males and females, the condition was evidently due to different causes, in some the etiology could not be made out. He might cite one case, that of a young female who had absolutely refused to take food, upon the plea that she could not swallow. Efforts were made to administer food by force. She would keep large quantities of food in her gullet, and then go into a corner of the room and eject it. When fed, she would gag and regurgitate a little, but it was not believed that she emptied the contents of the stomach entirely, and it was agreed that it was not true vomiting. The male hysterical patients were much more difficult to handle than the female. He believed that the majority of these patients did swallow, and the best proof that they were not without food lay in the fact that they increased in weight in spite of the assertion that no food was taken. As to prognosis, the hystero-epileptic regimen had been followed in these cases by brilliant results. He believed that few of these hysterical anorexia cases would be found to resist cold water, applied under considerable pounds of pressure.

(To be continued.)

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Recent Literature.

Treatise on the Diseases of Women, for the Use of Students and Practitioners. By Alexander J. C. Skene, M.D. Second Edition. New York: D. Appleton & Co. 1892.

We have very little to add to what we said of it on its first appearance, and we still regard it as one of the few foremost books in this department in the English language. The addition of chapters on diseases and injuries to the ureters, and on ectopic gestation, make it more complete. Too much praise cannot be given to the illustrations, which are models of clearness, and, as is not always the case, show what is meant. We still think that the recital of so many illustrative cases complicates the text, and adds to the size of the book out of all proportion to their value, but that is a minor point.

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283 Washington Street, Boston, Mass.

THE *LANCET* SPECIAL ANALYTICAL COMMISSION ON ARSENICAL WALL-PAPERS.

In the *Lancet* of July 2d, there is an exceedingly encouraging report as to the prevalence of chronic arsenical poisoning from wall-papers and fabrics in England, as compared with 1860, when attention was called by the *Lancet* and by the medical profession to the dangers from arsenical wall-papers, cretonnes, chintzes, table-cloths, lamp-shades, tapers, etc. Authenticated cases of poisoning from such sources were to be found in the columns of the *Lancet* from 1860 up to a few years ago. Consequent upon the publication of these cases, the medical profession and the public have been vigorously warned again and again to exercise the utmost caution in the choice of paper intended for decorative purposes, and the attention of manufacturers has repeatedly been called to the fact that they were responsible in some measure for the mischievous and often alarming symptoms arising from the presence of arsenic in the paper.

Specimens of paper analyzed in and about the years of 1870 and 1880 were found to contain, in some instances, as much as from nineteen to forty-five grains, or even more, of arsenious acid to the square yard. This was found mostly in green colors, and was there due to the presence of Scheele's green and Schweinfurth green. Of sixty papers analyzed in 1877, only ten, as recorded in the *Lancet*, could be regarded as harmless in that respect. But in spite of many warnings by the *Lancet*, arsenical pigments continued to be used down to 1888 and 1889. Since that time cases of arsenical poisoning have been so much less seldom reported that the *Lancet* has reinvestigated the subject, to ascertain whether any improvement has been effected in the manufacture of papers.

The result has been to find that the green arsenical pigments have virtually disappeared from wall-papers to such an extent that the *Lancet* is inclined to the belief that in England the public may be fairly confident that papers of a green color generally contain no arsenic at all. Excellent green pigments are now made without arsenic entering in any way into their composition. But small and variable quantities of arsenic may be found in many colors, due chiefly to dyes used in the staining process. A prominent firm, which has for a number of years paid particular attention to the manufacture of absolutely non-arsenical papers, states that, although various manufacturers supply patterns guaranteed free from arsenic, yet, on examination, many of them are found to contain minute quantities of arsenic, which is not wilfully introduced into the paper but which is contained in the dye as an impurity.

The *Lancet* has examined papers guaranteed, and those not guaranteed, to contain no arsenic, and has the satisfaction of reporting that respectable manufacturers do not use arsenic at all, at least knowingly or willingly. Some papers were found to contain arsenic in varying minute quantities and others to contain absolutely none. Their statement is certainly safe that none of the papers found to contain arsenic were dangerous, their standard of probable safety being one-five-thousandth of a grain of arsenious acid to five square inches or, in round numbers, one-twentieth of a grain in a square yard. Many of their papers failed to react to their test by which one-tenth of that quantity of arsenious acid may be detected.

The Journal, since 1858, has repeatedly called attention to the dangers from arsenic and to cases of poisoning by it from wall-papers, fabrics, etc., in this community; our State Board of Health has published two exhaustive reports on the subject, and the medical profession has labored earnestly in the same cause. Strong appeals to the legislature have twice been made by leading citizens, among whom were many chemists and physicians, for the protective legislation which they considered imperative. The failure of these efforts was thought to be in a large measure due to the testimony of a distinguished professor of chemistry from another State, to the effect that chronic arsenical poisoning does not occur from wall-papers containing arsenic.

We have accomplished the fact that the public has become aroused, so that the prominent dealers are obliged to provide analysts for their wares, although the unwary purchaser who does not ask for guaranteed paper may be more in danger than before of having the arsenical papers, which are not so salable as the others, thrust upon him. It is also a gratification to report that at least one large woollen mill and some few others for papers, have ceased using arsenic as a pigment.

We hope that, if we cannot secure proper legislation, we can at least soon say, as the *Lancet* says now: "Owing, doubtless, to the action of the medical profession in unanimously condemning the practice of employing arsenical colors in wall-papers (an action in which the *Lancet* took no small part) wall-papers loaded with arsenical pigment have apparently become a thing of the past, for among many specimens obtained by us from several respectable makers, those containing any arsenic at all contained it in almost imperceptible quantity, while others (five square inches), gave no response to a test which served to detect the one fifty-thousandth part of a grain." It is recommended, however, that a careful examination of wall-papers selected hap-hazard, should from time to time be made in order that such a satisfactory state of things might be maintained.

We commend this report to the attention of those physicians in other States who profess to regard the danger to health from arsenic in papers and fabrics as a Boston fad.

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THE TREATMENT OF DYSENTERY.

ONE of the diseases peculiar to hot weather is dysentery. Sporadic cases are seen in all seasons, though rare in the winter, while epidemics prevail only in the summer time.

The name dysentery may be considered as applicable to several different forms of intestinal flux, characterized by frequent stools, and in the acute stage, by tormina and tenesmus (Osler). The authors of the new French treatise regard it as "an endemo-epidemic, infectious and contagious disease, characterized anatomically by an ulcerous inflammation of the large intestine, and clinically by particular alterations of the stools and by intestinal colic."

There is more evidence to prove the infectiousness of the disease than its contagiousness; at the same time there are many facts connected with epidemics that seem to show the possibility of its communicability from person to person. Dysentery has been in this respect compared to diphtheria, to the contagion of which very many persons are little susceptible.

The microbiology of dysentery is not yet settled. The bacillus of Chantemesse and Vidal has not been constantly found; the *anguillula* of Normand seems peculiar to certain tropical forms, and has not yet been proved to be etiological, while the relationship of the *amœba coli* to dysentery is still uncertain. It seems to be invariably associated with tropical dysentery (called amœbic dysentery by some late writers). Kartulis says that he has cultivated the dysenteric amœba in straw infusion and reproduced the disease in cats, but the results were not constant.

With regard to the treatment of this disease, late writers continue to emphasize the importance of the evacuant treatment; whether by purgatives or lavements; a mode of treatment which has always had the highest empirical warrant.

"The ancients," says Heubner, "believed that the good effect of cathartic treatment consisted in its removing the acridity which gave rise to the dysentery. With our present knowledge we must give up this idea. We cannot, however, replace it by any other satisfactory explanation, and must rest contented with the fact as it is."

Dujardin-Beaumetz, recognizing the fact that in dysentery "we have not to do with ordinary diarrhœa, and that the duty of the physician consists rather in encouraging the appearance of fæcal matters which are very scanty in the stools of dysenteric patients, however abundant these evacuations may be," believes that purgatives should be chosen for a substitutive or derivative effect. Drastics are to be avoided on account of their irritant action on the mucous membrane, and only the mild purgatives, salines and cholagogues are eligible. He gives his preference for cholagogues; insists upon the absence of bile in dysenteric discharges, and declares that the physician may regard his patient as cured "when once the bile appears anew in the stools." Calomel as a purgative stands deservedly high, and should be administered in large doses (five to fifteen grains) or in minute doses — from three to five grains a day in powders containing one-third of a grain given every hour. He, however, considers calomel inferior to ipecacuanha, which "is the medicine *par excellence* in dysentery, being almost as much a specific for this disease as is quinine for intermittent fever." Ipecac is only useful in large doses; the usual method being first to give a full dose of opium, then in half an hour twenty to sixty grains of ipecacuanha.

The ipecacuanha treatment is endorsed by all recent writers on tropical dysentery, but certainly does not seem well adapted to the sporadic dysentery of temperate climates; according to Woodward, it did not prove satisfactory in the epidemic dysentery of the late Civil War. We do not, in fact, know of any physicians in this country who habitually treat their dysenteric patients by these nauseating doses of ipecac.

Of all the purgatives, perhaps none is more generally used than castor oil. A common way of administering it is to give every day a full dose of an ounce till the blood and slime disappear from the discharges and the stools become fæcal or bilious. It is a good plan to give along with the oil fifteen to thirty drops of laudanum.

Castor oil is, however, so objectionable to the taste, and frequently so nauseating, that the saline cathartics are generally preferred. Flint recommended Epsom salts, to be given in sufficient doses to produce abundant dejections, then discontinued. It sometimes happens that after free purgation, the dysenteric evacuations do not return, and recovery at once ensues.[1] After purgation, opium in some form, in dose sufficient to relieve pain may be given.

A recent writer in the *Bulletin de Thérapeutique*[2] advises sulphate of soda associated with intestinal antiseptics. The sulphate, he says, is absolutely innocuous, and is always well supported, but when employed alone, it is open to two objections: it acts too slowly, and proves insufficient in certain forms of the disease. "On the other hand, when associated with intestinal antiseptics, it becomes the basis of a kind of treatment capable of combating rapidly and efficaciously most if not all cases of acute dysentery observed in temperate and even in tropical regions."

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[1] Flint's Practice, p. 353.

[2] Bulletin Général de Therapeutique, July 30, 1892.

His method consists in giving every day in four doses, three hours apart, the following solution:

℞ Sulphate of sodium . . . . . ʒ x.
Water . . . . ʒ cc. M.
Sig. Dose. One-fourth part.

This solution is alternated with a powder of naphthol, seven and a half grains, to be given every three hours in some convenient menstruum. If a little milk be given just before and after the naphthol, it will be better supported.

One antiseptic lavement is given every afternoon. This consists of a quart of warm water, in which is dissolved the first day, five drachms of boric acid; the second day, five grains of naphthol or twenty of phenic acid; the third day, five grains of nitrate of silver may be substituted for the other antiseptics, etc. These lavements are to be kept up as long as possible. If there be reason to suspect the existence of profound ulcers or excessive friability of the walls of the intestine, it will be prudent to reduce the quantity of the lavement to one pint. A starch and laudanum enema at night relieves the tormina and tenesmus, and gives quiet sleep. The diet should be milk throughout the sickness.

It is worth remembering in this connection that in the Journal for April 28, 1877, page 507, Dr. Stedman recommends treating dysentery by a combination of sulphate of soda and morphia, and has usually found it to quiet the pain and change the character of the discharges after one or two doses. The severest cases in forty-eight hours seemed to lose their virulence. For a child three years old, three grains sulphate of soda and one-thirty-second of a grain of morphia was a dose; for an adult, one drachm with an ordinary dose of morphia. This treatment was endorsed by Dr. Hooker and others.

Doubtless antiseptic irrigation is coming more and more into use in acute dysentery. Dr. W. W. Johnston, in the *American Journal of Medical Sciences*, for August, 1892, treats of the subject exhaustively, and describes his method of washing out the lower bowel in dysentery. All that is needed for the operation are a fountain or Davidson syringe, attached to a small rubber tube and an escape tube of large size of soft rubber, made long enough by the attachment of a long piece of tubing so that the fluid escapes into a vessel on the floor. The hand holds and guides the tubes, and changes their position from time to time. If it is desired to irrigate the colon, this must be done with one tube. It is not, however, generally necessary to flush the colon, for the local and general symptoms are relieved by washing the rectum.

The *quantity* of water depends upon the circumstances of each case; as a rule, it should pass in and out of the bowel until it runs clear.

The *frequency* of irrigation is to be regulated by the number of the stools, state of decomposition in the bowel and other conditions. At first, irrigation may be performed every three hours, later, three times a day, as the outflowing fluid contains less blood and has less odor.

As an *irrigating fluid*, water may be used hot or cold, or may contain in solution any good antiseptic. Lemoine treated fifty-four cases of dysentery with solutions of corrosive sublimate, 1 to 5000. Fifty-three cases were treated at the Military Hospital at Oran, with the same solution. After the first day, the stools were fewer in number, and in three or four days the mucus disappeared, and the tenesmus and pain were soon lessened.

Boric acid and carbolic acid are the only antiseptics which Dr. Johnston has used frequently, and the results have led him to think that the former, or both together, give all that is desired, as doubtless the principal benefit comes from the cleansing and complete emptying of the rectum, and the least irritating and least dangerous germicide ought to be preferred.

MEDICAL NOTES.

New Lunatic Hospital for Boston. — The Board of Aldermen have concurred with the Common Council in appropriating $200,000 for a new lunatic hospital.

Gladstone's Health. — The *British Medical Journal* says that, in spite of reports to the contrary, Mr. Gladstone is as sound and as able to do work as any other man of his age has been or could be.

Unfit for Colonization. — An agent of Baron Hirsch reported that the Jewish peasants in the Odessa district are so degraded that the Argentine Republic would not allow them to be sent to the Jewish colony there, and that it is therefore expected that they will be sent to the United States.

Cholera. — It is reported that the Russian official record of cholera, which gives the daily number of cases as five to eight thousand, with three to four thousand deaths, is much below the actual numbers. There is a report that certain cases in Hamburg, supposed to have been cholera nostras are now known to be Asiatic cholera. A similar report, which has not yet been authenticated, announces an outbreak at Havre. Cases of so-called cholerine still occur in the vicinity of Paris, but the number appears to be diminishing.

The Requirements of the Illinois State Board of Health. — The Illinois State Board of Health have for some years furnished valuable information on the subject of medical education and medical colleges. In the report published last year by Dr. J. H. Rauch, a list of medical colleges in the United States and Canada is given. The total is 148, but of these four do not grant degrees, three have suspended, and four are not recognized by the Board; of the remaining, nineteen are supposed to require four or more terms of lectures and four years of medical study; of these last all but six are in Canada. Twenty-seven require four years of study and three terms of lectures, and fifty-five require three years of study and three terms of lectures. By this showing, over one-third of the established medical institutions of the country now require four or more years of professional study, and three or more terms of lectures as conditions of graduation. The State Board of Health has decided that for the purpose of registering in Illinois, the diploma which must be presented to the Board as a warrant for the State certificate allowing the holder to practice, must come from a legally chartered medical institution whose requirements of medical education are equal to that of the majority of medical institutions of the country. That is, they must require at least three years of study and three regular terms of lectures; and that no medical college can be held in good standing, until it has established its claim by an active existence of at least five years. Graduates of schools not up to the standard must pass an examination in different medical subjects.

Cervical Ribs. — At a recent meeting of the Berlin Medical Society, Aron showed two specimens and also two patients with ribs attached to the last cervical vertebra. In the living patient the rib appeared as a small bony tumor in the supraclavicular notch. The cervical rib in this position, he said, may cause such pressure upon the nerves and vessels of the neck, that a resection is indicated.

Paper Money and Bacteria. — Drs. Acosta and Rossi, of Havana, have made a series of examinations of the paper money issued by the Bank of Spain, which is current in Cuba. Every one who has been in Havana will remember the filthy condition of the small denominations of bills, especially those representing but a few cents. Two of these notes, contained more than 19,000 germs of various kinds. Cultures were made on different media, and injected into the peritoneal cavity of rabbits and guinea-pigs, most of which died within twenty-four hours.

NEW YORK.

Mortality for the Week. — Notwithstanding the hot weather prevailing, there has been a very gratifying decrease in the death-rate of the city during the past week. The mortality, which reached 1,434 during the week ending July 30th, and 1,181 during the week ending August 6th, declined to 854 during the week ending August 13th. This shows a decrease of 327 deaths compared with the preceding week, is 68 below the average of the corresponding week of the past five years, and represents an annual death-rate of 24.28 per thousand of the estimated population. During the week ending August 20th, the mortality further declined to 789, which represents an annual death-rate of only 22.42, and is 60 below the average of the corresponding week for the past five years. Small-pox still exists in the city, but is not as prevalent as it was. During the week ending August 20th there were four deaths from the disease, as against seven during the preceding week.

Glanders. — Last week glanders was discovered among the horses of the Third Avenue Railroad Company, and the veterinary surgeon of the Board of Health has been kept busy inspecting the 1,700 horses belonging to the line. In two days 19 horses were killed on account of the disease.

St. Luke's Hospital. — The competitive plans for the proposed new buildings for St. Luke's Hospital, to be erected on the grounds now occupied by the Bloomingdale Asylum, have just been placed on exhibition. A year ago, when it was decided to move the institution from its present location, Messrs. George E. Harney, James Brown Lord and Heims & La Farge were paid $400 each to present plans for the new buildings. In addition to these, any other architects who chose were invited to present plans, and seven firms have responded to the invitation. Accompanying each plan is a type-written description, which includes the methods of heating and ventilation proposed. In the plans of Messrs Heims & La Farge, who are the architects of the neighboring Cathedral of St. John the Divine, it has been a special aim to make the architecture harmonize as perfectly as possible with that of the cathedral.

Miscellany.

THE ORIGIN AND DIFFUSION OF CHOLERA.

Surgeon-General Cornish of the British service, in a paper on the present epidemic of cholera, describes the spread of the disease, and the similarity to other epidemics.[1]

So far as can be gathered, the epidemic which now threatens the whole of Europe, appeared in March or April of the present year, in the north-western provinces of India; attacked with great violence the pilgrims at the great Hurdwar fair, near the source of the Ganges, spread through Cashmere and Afghanistan, reached Persia in May or June, crossed the Caspian Sea, and spread amongst the population of Asiatic Russia, from whence it is making rapid progress in European Russia. The epidemic since April has travelled in a north-westerly direction, and has covered or overflowed many thousands of square miles of territory. The history of the progress of the great epidemic of cholera of 1829–33 should be closely studied by those who wish to understand the signicance of the present epidemic. Cholera history is very apt to repeat itself, and the circumstances which happened in 1831 are therefore very likely to happen again in 1892 and succeeding years. The route taken by the present epidemic is almost identical with that which invaded Europe in 1831.

It is quite a mistake to suppose that since India is the mature home of cholera the disease is everywhere present there and ready to take an epidemic form. An epidemic of cholera follows the same laws in India as in any other country. It is endemic only in certain and limited parts, from which an epidemic advances occasionally, with intervening intervals of uncertain duration. Its progress is influenced by season and atmospheric conditions and after lasting a period of about three years the epidemic dies out. Surgeon-General Cornish alludes to Russia's half-civilized acquisitions in Asian soil as a source of difficulty and danger in this direction. As regards land quarantine and sanitary cordons, which European nations are so ready to enforce against their neighbors, these have never been successful in keeping out cholera. In India, with ample military aid at hand, they have been tried again and again unsuccessfully. The only provisions on which any reliance can be placed are sanitation, a good water-supply, efficient drainage, surface soil cleanliness, wholesome food and habitations. The invading cholera, if it does not reach England in the present autumn, is, in Surgeon-General Cornish's opinion, likely to do so in 1893.

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[1] Lancet, August 13.

The reported out-break at Hamburg and Havre, if true, increase much the danger that the disease may be imported into the United States, especially as large numbers of Russian Jews are constantly coming through the former port to this country. The Marine-Hospital Service is now taking active measures to strengthen the quarantine of our sea board.

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THE OFFSPRING OF MULATTOES.

Dr. W. A. Dixon[1] comes to the conclusion from observations extending over a period of more than thirty years, that the popular impression is correct that the offspring of mulattoes are the subjects of constitutional disease to a greater degree than those of unmixed blood; and when confined entirely to their own class, that is, without the admixture of pure negro or white blood, they scarcely ever reach the fourth generation in descent. In the community in which his observations were made, there were a large number of persons whose parents on the father's side were white men of wealth and position. These mulattoes were for the most part tall and muscular, and perfectly developed, and many lived to an old age. They commonly married mulatto wives, and their children intermarried. In many instances those of the first cross were robust; those of the second paler, more ash-like in complexion, of slender form, and showed tendencies of diseases of a strumous type. The third generation showed less fertility and greater predisposition to disease; whereas the fourth were still less fertile, and their progeny suffered commonly from rickets and similar weaknesses. Scarcely any of this generation are in good health although they have the same advantages of living as the healthy mulattoes of recent generation; and the negro and white families in the same community are perfectly healthy.

Tuberculosis exists to an excessive degree among the descendants of mulattoes; they are inferior in vitality, intelligence, and morality, and show a high rate of mortality. The author has found it quite noticeable that mulatto girls develop younger than either white or negro girls, and that as women they fade much sooner. Also that after the second generation of pure mulatto breeding practically all the children born are girls. The author remarks that it has already been proved in other races that human hybridity cannot be maintained without reversion or fresh supply from parental blood. He suggests the possibility of the danger that tendencies to tuberculosis and other strumous diseases may be increased in the United States by the large mixture of nationalities which is taking place in it; and points to the immunity of the Jews, and other unmixed races, to these affections.

Whether the differences existing among our white population is sufficient to produce degenerate stock, will probably not be determined for some time; but there seems to be no doubt that the weakness of mulattoes will prevent any large amount of mixture of the negro in the future American citizen.

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DISEASES AMONG INDIANS.

Dr. A. B. Holden,[1] in an article on the sanitary effects of civilization, calls attention to the fact that it is the "transition period" in which the Indian constitution suffers. If he could be given at once a knowledge of the laws of health and then have the best hygienic surroundings he would undoubtedly be better off than in a state of savagery. "The evils of imperfect civilization and misapplied efforts at civilization, however, are serious enough to deserve careful attention."

The gradual, though slight decrease in the numbers of the Dakotas, illustrates the truth of this proposition. Living in the tepee or lodge it was easy to move away from any place as soon as it became too dirty for comfort. But now they remain in their houses in the same place no matter how filthy the neighborhood becomes. They have never learned to cook the new food properly, so that there is much indigestion. Moreover the cabins on the reservations are often built so that there is one room sixteen by eighteen feet, with one door and one window in a single fixed sash; in this room there are usually two stoves, one for cooking and the other for heating. Frequently, in winter, such a cabin is occupied by ten to thirty people and by all the dogs and cats about the place. When children are brought from camp to the boarding-schools there is always seen a marked improvement in their condition. While they very often suffer from a return to camp life.

A decided change of climate, however, does not seem to benefit the Indian; this is shown by many who have been elsewhere to school, and by those tribes that were transferred from one territory to some distant reservation.

The author then considers tuberculosis among the Indians. Consumption and scrofula were the causes of 900 out of 1,453 deaths reported in 1888. The death-rate from consumption alone is stated by different physicians at from forty to seventy-five per cent. "The savage is less liable to become sick or to be injured, but when sick or injured to the same degree is more liable to die than the civilized man." In this respect he resembles the negro. Tuberculosis is found in every Indian tribe. In a few places malaria causes more deaths than consumption. From statistics gathered from Agency physicians it appears that scrofula is often very prevalent where no syphilis can be found, and that scrofula may not be encountered at all in tribes where syphilis is common.

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[1] Medical News, August 13th.

[1] Medical Record, August 13th.

In the life of the Indian the sanitary evils are those of dress, dwelling and diet. These evils increase the natural tendency to tuberculosis and serve as exciting causes where such a tendency already exists.

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THERAPEUTIC NOTE.

Iodophenin [1] is obtained by the action of iodine on phenacetin under certain definite conditions. It was introduced by Scholvien, of Berlin, as a powerful bactericide. It has a crystalline form; a heavy odor like iodine; an acrid, burning taste; and is practically insoluble in water. It is said to act promptly in as weak a solution as 1 to 5000. Besides its bactericidal property, it is said to possess antiseptic and febrifuge properties as well.

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[1] Squibb's Ephemeris.

RECORD OF MORTALITY

For the Week ending Saturday, August 13, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	854	429	32.40	10.32	22.92	2.64	1.44
Chicago . . .	1,250,000	654	342	33.90	7.05	21.30	1.80	8.10
Philadelphia .	1,092,168	504	215	26.22	7.41	18.62	3.61	1.33
Brooklyn . .	955,333	848	264	18.26	4.07	12 54	1.65	1.10
St. Louis . . .	477,873	206	90	22.54	8.82	18 62	1.96	.98
Boston . . .	469,645	257	125	31.98	11.31	26.91	1.95	1.17
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,100	118	54	17.00	7.65	11.90	2.55	2.55
Cleveland . .	281,353	136	86	42.18	5.18	37.74	2.96	.74
Pittsburg . .	255,000	114	58	40.94	7.12	28.48	3.56	5.34
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	110	37	29.12	3.64	17.29	.91	7.28
Nashville . .	87,754	33	8	24.24	6.06	12.12	—	9.09
Charleston . .	56,048	33	22	24.24	12.12	21.21	—	—
Portland . . .	40,000	17	7	35.28	5.88	29.40	5.88	—
Worcester . .	92,313	42	22	47.60	4.76	42.84	—	2.38
Lowell . . .	82,455	50	31	42.00	8.00	38.00	—	2.00
Fall River . .	82,128	—	—	—	—	—	—	—
Cambridge . .	74,644	32	19	25.00	—	21.91	—	—
Lynn	60,809	41	24	34.16	4.88	29.28	2.44	—
Springfield . .	17,052	28	13	57.12	12.85	35.70	—	14.28
Lawrence . .	45,910	22	14	45.50	—	36.40	—	—
New Bedford .	44,917	25	10	16.00	8.00	16.00	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Salem	31,495	21	12	42.84	4.76	42.84	—	—
Haverhill . .	30,065	9	5	22.22	22.22	22.22	—	—
Chelsea . . .	29,479	16	9	43.75	6.25	43.75	—	—
Fitchburg . .	27,444	12	7	33.33	8.33	33.33	—	—
Gloucester . .	26,805	10	6	50.00	—	40.00	—	—
Malden . . .	26,783	20	11	25.00	5.00	25.00	—	—
Newton . . .	26,498	15	7	26.66	26.66	26.66	—	—
Brockton . .	26,464	16	12	43.75	6.25	43.75	—	—
Taunton . . .	26,464	19	13	52.60	—	52.60	—	—
Waltham . .	20,942	8	4	50.00	12.50	37.50	—	—
Pittsfield . .	18,294	7	2	14.28	—	14.28	—	—
Quincy . . .	17,930	1	0	—	—	—	—	—
Northampton .	15,681	10	4	30.00	40.00	20.00	10.00	—
Everett . . .	14,745	5	3	40.00	20.00	49.00	—	—
Newburyport .	14,031	11	6	45.45	9.09	36.36	9.09	—
Amesbury . .	13,561	3	0	—	33.33	—	—	—

Deaths reported 4,024: under five years of age 1,999; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,268, consumption 328, acute lung diseases 195, diarrhœal diseases 928, typhoid fever 116, diphtheria and croup 93, scarlet fever 32, cerebro-spinal meningitis 32, whooping-cough 24, measles 18, small-pox, erysipelas and malarial fever 7 each.

From scarlet fever New York 10, Philadelphia 7, Boston 3, Chicago, Brooklyn, St. Louis and Pittsburgh 2 each, Cleveland, Worcester, Lowell and Waltham 1 each. From cerebro-spinal meningitis Brooklyn 13, New York and Chicago 6 each, Washington 3, Philadelphia, Lynn, Gloucester and Everett 1 each. From whooping-cough Brooklyn 7, New York 6, Chicago 4, Philadelphia 3, Pittsburgh 2, Cambridge and Lawrence 1 each. From measles New York 7, Chicago 5, Brooklyn 3, Philadelphia 2, Boston 1. From erysipelas New York and Brooklyn 2 each, Chicago, Boston and Washington 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending July 30th, the death-rate was 17.3. Deaths reported 3,374: acute diseases of the respiratory organs (London) 155, diarrhœa 286, measles 127, whooping-cough 56, scarlet fever 54, diphtheria 41, fever 18, small-pox (Bradford 2, London 1) 3.

The death-rates ranged from 6.3 in Burnley to 25.9 in Liverpool; Birmingham 17.9, Blackburn 13.2, Brighton 10.3, Croydon 11.8, Hull 17.1, Leeds 13.7, Leicester 20.6, London 17.5, Manchester 17.4, Newcastle-on-Tyne 14.1, Nottingham 16.5, Sheffield 19.3, Sunderland 22.8.

METEOROLOGICAL RECORD,

For the week ending August 13, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 7	30.10	71	80	62	65	57	61	N.W.	S.W.	10	12	C.	C.	
M.. 8	30.04	74	85	63	74	70	72	S.W.	S.W.	13	15	C.	O.	
T.. 9	29.86	80	87	71	81	76	78	S.W.	S.W.	15	20	F.	R.	
W .10	29.98	85	94	76	63	68	66	S.W.	S.W.	9	12	F.	O.	
T ..11	29.92	84	94	75	79	83	81	S.	S.W.	10	12	F.	O.	
F ..12	29.81	72	77	66	88	85	86	S.	N.E.	10	10	O.	O.	2.29
S..13	29.89	65	69	62	87	90	88	N.	E.	5	5	O.	C.	
☞	29.98	76	83	68	77	76	76			10	12			3.27

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 13, 1892, TO AUGUST 19, 1892.

Leave of absence for one month to take effect about September 1, 1892, is granted Captain Adrian S. Polhemus, assistant surgeon, U. S. A.

The leave of absence on surgeon's certificate of disability, granted Captain Marcus E. Taylor, assistant surgeon, U. S. A., is extended four months on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 20, 1892.

Richard Ashbridge, passed assistant surgeon, detached from Navy Yard, New York, and wait orders.

RECENT DEATH.

Thomas F. Wood, M.D., secretary of the North Carolina Board of Health, and editor of the *Wilmington Medical Journal*, died in Wilmington, August 22d.

BOOKS AND PAMPHLETS RECEIVED.

Hygienic Requirements of School Furniture. By G. A. Bobrick, New York.

Transactions of the Medical Society of the State of New York for the Year 1892.

University of Michigan, Department of Medicine and Surgery. Annual Announcement. 1892-93.

Human Monstrosities. By Barton Cooke Hirst, M.D., and George A. Piersol, M.D. Part II. Philadelphia: Lea Brothers & Co. 1892.

Three Cases of Cranial Surgery. I Linear Craniotomy for Defective Mental Development. Report of a Case Thirteen Months after Operation. Decided Mental Improvement. II. Exploratory Trephining for Epilepsy. Negative Results. III. Trephining for Abscess of the Brain. Evacuation of One Ounce of Pus. Recovery. By William H. Morrison, M.D., of Holmesburg, Phila., Pa. Reprint. 1892.

Original Articles.

THE DIFFERENTIATION OF THE BACILLUS OF TYPHOID FEVER.[1]

BY GEORGE W. FULLER, S.B.,
Bacteriologist, Lawrence Experiment Station, State Board of Health of Massachusetts.

For several years it was believed that the most marked and sufficiently diagnostic characteristic of the typhoid fever bacillus was its growth on sterilized potato. In two days at blood temperature, or in three to four days at room temperature, the inoculated potato gives a luxuriant, but to the unaided eye, completely invisible growth. The entire surface assumes a moist, shining appearance but is not otherwise changed. If a small portion of the surface is removed with a sterilized platinum needle, and examined in a drop of water under the microscope, a large number of bacilli moving about very energetically are to be seen. It was thought for some time that this was a means of differentiation from all other species of bacteria. The results of many months' work in this laboratory, however, confirm the conclusion of several investigators abroad which have indicated that this is not the case, and for two reasons: first, because the typhoid bacillus does not invariably give this invisible growth, and, second, because there are several species very similar to the typhoid bacillus in their growth on the usual culture media, which under some circumstances present the same appearance when grown on sterilized potato. Of these so-called "pseudo-typhoid" bacilli there are at least five species in the water of the Merrimack River at Lawrence. Like other observers, I have found that this characteristic of the typhoid bacillus is obtained only when the potato is slightly acid; slightly alkaline potato giving a gray or yellowish growth along the inoculation line. Moreover, as different specimens of potato appear to vary in their acidity or alkalinity, and as the same variety changes in this respect during the different seasons of the year, the potato test is not only to be no longer considered diagnostic — it is often contradictory.

At the Lawrence Experiment Station of the State Board of Health of Massachusetts, under the direction of Mr. Hiram F. Mills, many experiments have been made upon the life-history of the typhoid bacillus in milk and in water, and upon the possibility of its passage through sand-filters. Realizing the uncertainty of the differentiation of this micro-organism by means of the potato test, a comparative study of the different species of bacteria in the water of the Merrimack River at Lawrence, of which there are more than thirty, was systematically undertaken side by side with cultures of the typhoid bacillus. To this end it became necessary to make a thorough investigation of the typhoid bacillus itself. The numerous special methods and media proposed for its differentiation were studied and their diagnostic value ascertained. The observations of its characteristics and its behaviour upon the various culture media now employed in this laboratory are as follows:

Morphology.— When grown on agar in tubes for one week at 20° C. it appears to be a plump bacillus, with rounded ends, about 1μ long and 0.6–0.8μ in diameter. When grown in bouillon at blood temperature for two days it is a bacillus 1.5–2.5μ long and 0.5–0.6μ in diameter. Spore formation and involution-forms under the above conditions, have never been observed. Hanging drop preparations from bouillon cultures, at blood temperature, show that the bacilli possess very lively movements both of rotation and translation. The motility of the bacilli, when taken from agar cultures grown at blood temperature, is very constant but somewhat less marked, but from agar cultures grown at 20° C., it is not only less marked but it is not uniformly present.

While the motility of the typhoid bacillus is one of its most marked characteristics and is an essential number in the series of characteristics which enables the bacteriologist to identify this micro-organism, yet in water, sewage and other sources are found species of bacteria which possess this characteristic to a very similar degree. Moreover, it has been learned from the repeated determinations of the species of bacteria in numerous samples of water that an element of variability in the morphological appearances of bacteria arises when cultures are grown on media of different composition, of different degrees of alkalinity, for different periods of time, at different temperatures. Accordingly, in order to make microscopical observations of value, a standard method of procedure should be adopted, making all conditions as nearly parallel as possible.

Relation to Temperature. — The typhoid bacillus can be grown in culture media at temperatures varying from 10° C. to 45.5° C. Its optimum temperature lies between 37° C. and 39° C. It has been found that at the extreme limits of temperature the bacillus grows better in liquid than in solid culture media.

Description of Growth on the Different Culture Media.— On the gelatine plate the bacillus grows and forms colonies in the usual time, namely, forty-eight to seventy-two hours, at 20° C. The colonies lying deep in the gelatine are small, white, spherical or spindle-shaped and sharply outlined. Those on the surface are larger, bluish-white, with slightly irregular outline; under the microscope the colonies often appear to have ridges or folds. In some cases a centre is visible but it is the exception. The gelatine is never liquefied. It was thought at one time that the typhoid colony was very characteristic with its yellowish centre, and bluish veil of irregular outline with ridges like the veining of a leaf. It is now known that the colony does not always present this characteristic appearance and, further, that there are several species of bacteria in water which cannot be distinguished from the typhoid bacillus by their growth on the gelatine plate.

When grown in a gelatine tube a moderately conspicuous, gray growth appears along the inoculation line, while at the surface there is a thin, gray skin of irregular outline which spreads toward the wall of the tube.

On the agar plate incubated at 38° C. the surface colonies are slightly irregular, bluish-white, sometimes having a white centre. Those below the surface appear yellowish-white and are usually oval. On the inclined agar tube the typhoid bacillus gives a well-defined, smooth, moist, grayish growth.

When grown in sterilized milk the typhoid bacillus produces no coagulation and but a slight amount of acid. It is not possible to detect the acid with litmus but with phenolphthalein which is a more delicate indicator for organic acids than litmus, it can be shown that a slight acid fermentation takes place. The milk test is manipulated as follows: The milk, drawn fresh from the cow and as nearly sterile as possible, is taken at once to the laboratory, tubed and sterilized — five cubic centimetres being carefully measured into each test-tube. The tubes are sterilized for three-quarters of an hour on three successive days. From time to time the apparatus and doubtless the atmosphere of the laboratory contain spore-forming bacteria which are killed with great difficulty at steam temperature. Notwithstanding the precautions mentioned above, I have frequently found that many of the tubes of milk were not sterile. It was also observed that the species which were not killed at steam temperature produced coagulation. Accordingly after the tubes have been sterilized three times they are placed in a thermostat at 38° C. for twenty-four hours. After another sterilization the tubes which had a growth in them are found to be coagulated and are discarded. Although many weeks may go by without having difficulty in this direction, the importance of having sterile milk, and of knowing that it is such, well repays the additional labor.

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[1] From a forthcoming Report of the State Board of Health.

The tubes are inoculated and the cultures allowed to grow for two days at 37° C., or for four days at 20° C. At the end of this time they are examined for coagulation, after which they are placed in boiling water for five minutes and the coagulation, if any, again noted. The second observation gives uniformly constant results for the same species, whereas, before boiling, the coagulation by many species is sometimes positive and sometimes negative even after they have grown in the milk for a much longer time. The great advantage of this procedure is well illustrated in the case of the bacillus coli communis which ordinarily takes from two to seven days to coagulate milk. If, however, a culture is allowed to grow for twelve hours at 38° C., and is then placed in boiling water coagulation at once follows. In explanation of this fact it is to be remembered that the caseine of milk is precipitated by acid (and re-dissolved by alkali) and that it is coagulated by heat in the presence of acid; therefore, in some cases, probably, the acid although unable to precipitate the caseine is sufficient to coagulate it in the presence of heat. The fact, however, that in some cases a small amount of acid effects precipitation before heating, while in other cases a comparatively large amount of acid produces no coagulation after prolonged heating, points to further chemical changes.

After noting the coagulation, the milk is placed in an evaporating dish and the amount of acid determined by titration against a twentieth-normal solution of caustic potash using phenolphthalein as an indicator. As is well-known, normal milk is acid with this indicator, the five cubic centimetres of milk requiring about two cubic centimetres of a twentieth-normal solution of caustic potash for neutralization. This blank, which is determined for each lot of milk, is of course deducted from the amount of caustic potash required to neutralize each tube of milk after the bacteria have grown in it. It will be readily seen that there is a great advantage in using this indicator, inasmuch as the blank is sufficiently great to enable alkali, if present to a moderate extent, to be estimated as well as if the fermentation had been an acid one.

When grown in a peptone solution containing potassium nitrate, the typhoid bacillus reduces the nitrate to nitrite. The explanation of this fact seems to be that, among the decomposition products of the peptone, some reducing agent or agents are formed — the nitrate being used simply as an indicator. It is not clearly known what the reducing agents are, but the test is of great value to the bacteriologist as the works of Heraeus, Frankland and Jordan have indicated. After many hundreds of trials upon the typhoid bacillus the test has never been known to fail, if made with proper manipulation. This method is also of great service in the differentiation of other species, as from the single test three possibilities may result:

(1) The nitrate may remain as such. (2) It may be reduced to nitrite. (3) It may be reduced completely; that is, to ammonia or to free nitrogen.

The solution is prepared by dissolving one gramme of peptone and two-tenths of a gramme of potassium nitrate in one litre of city water. The reason that this water is used rather than distilled water is because it contains the phosphates and other inorganic salts which appear to be necessary for the growth of the bacteria. The solution is rendered alkaline to the same degree as ordinary nutrient gelatine, tubed, sterilized, inoculated and the bacteria are allowed to grow for one week at 20° C. To determine in what condition the nitrogen is present, after the growth of the bacteria, a test for nitrites is first made. A cubic centimetre of the solution is removed to a clean test-tube, containing about ten cubic centimetres of distilled water free from nitrites. One cubic centimetre each of strongly acid, sulphonilic acid and of napthylamine hydrochlorate solution are added; and nitrites, if present, are indicated by a pink color. If nitrites are present, then the determination is sufficient; but, if they are absent, a determination of nitrates must be made in order to learn, by their absence or presence, whether there has been a complete reduction, or none at all. To make the nitrate determination, the tube containing the solution is inverted and the small amount of solution remaining is evaporated to dryness. Phenolsulphonic acid, water and caustic soda are successively added and the presence of nitrates is indicated by the production of a yellow color.

For some time it has been known that the presence of glucose enables facultative anaërobes to grow luxuriantly in the absence of oxygen. Taking advantage of this fact, Dr. Theobald Smith,[2] of Washington, has devised a method which we have found to be of the greatest value for the diagnosis of the typhoid bacillus. The solution used contains two per cent. glucose, one per cent. peptone, five-tenths per cent. common salt, and is rendered alkaline to the same degree as the nutrient gelatine used in this laboratory. In place of the U tubes, such as are used in the determination of sugar in urine, recommended by Smith, small test-tubes bent have been found to answer the purpose very nicely. The tubes are bent at about one inch from the closed end, forming an interior angle of 75°. The solution is poured into the tube till the closed arm is filled and there stands about a half-inch in the open one. The tube is plugged, placed in a wire basket so that the closed arm will be in an inclined position, and sterilized in the usual manner. After boiling, the air in the closed arm rises to the upper end and must be removed at once to prevent reabsorption. The tubes are again placed in a basket, after inoculation, so that the closed arm shall be in an inclined position.

There are three ways, as Smith has shown, in which bacteria may grow in this tube: (1) obligate aërobes, and facultative anaërobes which are not motile, do not grow at all in the closed arm. (2) Facultative anaërobes which are motile grow into the closed arm and produce a turbidity. The typhoid bacillus is an example of this class. (3) Some facultative anaërobes, which are motile, grow into the closed arm producing a turbidity as do the last class, but they also liberate gas. Bacillus coli communis is an example.

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[2] Centralblatt für Bakteriologie, Bd. vii, p. 502; *Ibid*, Bd. xi, p. 367.

This test has been found to be of special value in this laboratory as there are very few non-liquefying bacteria present in the water of the Merrimack River which belong to the same class as the typhoid bacillus.

The observations obtained from the above tests, taken altogether, have proved sufficient to differentiate the typhoid bacillus beyond all reasonable doubt from every species of bacteria yet met with in the water of the Merrimack River at Lawrence. By these means, also, there was isolated from the fæces of a patient sick with a typical case of typhoid fever, at the Lawrence General Hospital, a bacillus which, after long and careful study, appeared to be in every way identical with typhoid cultures obtained from Prudden of New York, and from Chantemesse of Paris. The fæces were passed on the fifth day of the patient's illness. In the course of these investigations eleven examinations of typhoid fæces and three of typhoid urine were made in which the specific organism could not be found.

Of the various other special culture methods and media which have been suggested for the diagnosis of the typhoid bacillus, none have proved to be of sufficient value to warrant them a position in the scheme for the differentiation of this bacillus. This does not necessarily indicate, however, that these special methods and media are valueless when working with waters differing from the Merrimack River in their flora, nor is it claimed that the observations outlined above are sufficient to differentiate the typhoid bacillus from all other species of bacteria. The work of many months goes to show that before any degree of certainty can be reached in the identification of the typhoid bacillus a thorough knowledge must be had of the ordinary species of bacteria present in the source under examination. Until recently the potato test was used to differentiate the bacillus coli communis from the typhoid bacillus. At the present time, after careful work by several investigators, it has been found that this test is untrustworthy, and in its place there are, as is well known, three apparently unfailing tests, namely: (1) when grown in sterilized milk the bacillus coli communis produces coagulation — the typhoid bacillus does not; (2) in sterilized milk the bacillus coli communis forms acids — the typhoid bacillus forms a very slight amount or none; (3) in the Smith test the colon bacillus forms a turbidity with gas — the typhoid bacillus a turbidity without gas. (Both bacilli reduce nitrate to nitrite in a peptone solution.)

In obtaining a knowledge of the species of bacteria in the source under examination an opportunity is afforded to ascertain the limits of accuracy of the methods employed. It will also appear if there are any species regularly present which are identical, within the limits of variability, with the typhoid bacillus in all the tests employed. If such species are present then new methods for differentiation must be devised; if they are absent there can be developed, from a classification of the data, a scheme of procedure which will enable the typhoid bacillus to be most readily differentiated. Thus it has been learned after frequent examinations covering considerable more than a year, and involving more than twenty-four hundred species determinations, that there appear to be no other non-liquefying bacteria in the water of the Merrimack River which coagulate milk and also produce a turbidity, without gas, in the Smith test. Accordingly, when a sample of this water is to be examined for the typhoid bacillus, "fishes" are made from the non-liquefying colonies upon the gelatine plate into Smith tubes. Those cultures which produce a turbidity, without gas, are transferred to milk and to the gelatine tube. From the data thus obtained those species which are not typhoid are readily thrown out, while the typhoid bacilli are subsequently passed through all the tests described above and their identity is established.

Much labor can often be saved by the use of the agar instead of the gelatine plate culture grown at 38° C. which is the optimum temperature for the typhoid bacillus but is so high as to inhibit the growth of many water species.

SUMMARY.

(1) After prolonged investigation it has been found that it is possible to separate the typhoid bacillus from all other bacteria hitherto encountered in the water of the Merrimack River.

(2) The potato method of differentiation is of no diagnostic value.

(3) The three tests which have been found to be highly diagnostic are (after non-liquefaction): (1) non-coagulation of milk; (2) non-formation or formation of a very slight amount of acid in milk; (3) production of a turbidity without gas in the Smith test.

In closing, the writer wishes to express his obligations to Prof. W. T. Sedgwick and Mr. Allen Hazen for many valuable suggestions.

BACTERIOLOGICAL AND CLINICAL INVESTIGATIONS INTO THE NEW ANTISEPTIC, DERMATOL.[1]

BY ARTHUR K. STONE, M.D., OF BOSTON.

Last August, while looking over the *Berliner klin. Wochenschrift*, I saw the statement by Heinz in regard to an antiseptic powder which was to take the place of iodoform. And as the report showed that material, a sub-gallate of bismuth which he called dermatol, had been produced after a long course of experimentation, during which many compounds had been tried, but rejected as unsuitable, I determined to try the dermatol during my dispensary service, and see how my results would coincide with the claims made for it by Heinz. Accordingly I secured a quantity and I began its use about the middle of September, 1891, and continued until January 1, 1892.

During all this time I used the gallate of bismuth in practically all the cases that presented themselves, at the Boston Dispensary, where iodoform, aristol, or a simple, inert powder would have been indicated. During this time there were over 1,300 new patients treated in the surgical department, so that I had abundant opportunity to observe where the new powder was useful, and where it was useless.

I purposely avoided reading any articles which appeared at various times upon the subject, so that I might be able to form an unbiased opinion as to its working. I found that my clinical observations were in almost complete harmony with the work already reported, while my laboratory experiments showed some points of difference.

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[1] Read before the Massachusetts Medical Society June 7, 1892, and recommended for publication by the Society.

The sub-gallate of bismuth was first produced in the Pharmatological Institute of the University of Breslau, and the preliminary report was made by Heinz and Liebrecht. They had set themselves the task of producing a non-poisonous, bacteriacidal powder, which should aid wound healing after the manner of iodoform and aristol. To accomplish this, they tried, first of all, the other iodine compounds, and though many were found which were valuable in destroying germ life, yet the great ease with which they are broken up and yielded their iodine made them too dangerous to patients. Iodoform alone appeared to have any stability. In none of their animal experiments were they able to find free iodine in the urine. The change probably only takes place if certain decomposing, aromatic bodies are present which cause iodine to be set free.

After iodine, the phenol bases were tried throughout a long list, but these, too, had to be rejected, because of their irritating properties. Finally gallic was selected as the reducing agent, as it was non-poisonous, and present in 1-10 per cent. solution it was found to check entirely bacterial decomposition. Bismuth, after many experiments, was found to be the best element with which to combine the gallic acid.

That this compound was non-poisonous was proved by a large number of feeding experiments supplemented by subcutaneous and intra-peritoneal introduction of the material into animals, before it was used in the clinic.

The result of this patient, painstaking work was that the profession was given a saffron-yellow powder—

Insoluble in water, alchol or ether,
Odorless,
Non-hygroscopic,
Astringent,
Non-poisonous,
Non-irritating,
Stable, being unaffected by steam or dry heat, in the process of sterilization, and having the power to check bacterial growth to a certain extent, though this was not claimed for it by its sponsors.

The opinions of various men who have used the sub-gallate of bismuth in their clinics is briefly as follows:

(1) Dr. Sackur surgical assistant at Breslau, considers it a ready, odorless, harmless material for advancing healing in all fresh, *aseptic*, and well-granulating wounds. On account of its drying properties and being absolutely non-irritating and non-poisonous, a sufficient quantity can be used to secure almost complete dryness of all wounds, and thus make the probability of healing without suppuration much greater.

(2) All phlegmonous conditions and freshly opened abscesses should, after being treated by free incision, be cleansed and dressed with moist antiseptic dressing before dermatol can be used. But when the wound is once cleansed, the healing is materially hastened by the dermatol dressing.

(3) It is of no value in torpid, slow granulating wounds and ulcers.

(4) No specified working against tubercular disease has been observed, as in the case of iodoform.

(5) Rogner of Vienna, after six weeks' use of the material in all cases where he would have used iodoform, writes that dermatol is a splendid wound-healing material, best in superficial and fresh wounds, but of great value in abscesses and phlegmonous wounds that have been thoroughly opened, the necrotic tissue removed, and washed with corrosive. Such wounds clear themselves in a short time, the secretion quickly disappears, and a dry, red, granulating surface presents itself. On the whole he considers dermatol the best dry antiseptic we possess.

O. Rosenthal, in a paper before the Berlin Dermatological Society, reported cases of hard and soft chancres, balanitis, purulent lymphangitis, burns, gonorrhœa, leg ulcers, etc., all treated with this material, and all giving very satisfactory results. But the best results which he obtained were in moist eczemas, of which he treated a large number of cases. He concludes by stating that in his opinion dermatol will prove of great value in dermatological practice.

In latter paper Rosenthal speaks of his further use of the sub-gallate of bismuth in his clinic, and states that it has fully come up to all that was anticipated of it. He claims an almost diagnostic value for it in cases of ulcers of the penis, specific ulcers healing very rapidly, while chanchroids healed not nearly so rapidly as under other dressings. This latter does not coincide with my own observations.

Dr. F. Glaeser, of the gynæcological department of Breslau, considers that dermatol is no subsitute for iodoform in foul, necrosing wounds, but is of great value in fresh wounds, granulating wounds and well cleansed cavities. Its superiority lies in the fact that no drying antiseptic so completely favors the primary union of aseptic wounds, especially in all plastic, and fresh post-partum and perineal wounds, where the primary union is always in danger from abundunt secretion. In foul abortion cases, Glaeser still holds to the use of iodoform.

Robert Asch (Breslau) writes that, although the sub-gallate of bismuth appears to possess only slight antiseptic properties, through its eminent drying powers it is able to promote indirectly the aseptic healing of wounds, and has besides the excellence of being non-poisonous and non-irritating, and is unchanged by sterilization. In cervix tears it is much superior to iodoform, because it prevents the large amount of secretion that is usually present. On the other hand, in inoperable, sloughing carcinomata uteri where great numbers of bacteria are present, the sub-gallate is of little use. Most notably dermatol shows its powers in fresh tears of the vagina and perineal plastic operations. Here it protects the wound and stitches from being soaked. One can let silk stiches lie loosely under a thick layer of dermatol, covered with dermatol gauze, for days at a time, and they will remain dry and without stitch abscesses. Asch has also used the dermatol gauze in vaginal tamponade and in vaginal catarrh with good results.

Bluhm has used the sub-gallate of bismuth in cervicitis, but with varying results. In other respects his results do not differ from those already quoted, and he is an enthusiastic advocate of its use in minor surgery and dermatitis.

Dornberger has used the sub-gallate of bismuth in a number of cases in a children's clinic, and reported the same. He found it of special value in cases of moist eczema, and in fifteen cases all were quite dry in one or, at the outside, two days. Burns and scalds healed quickly and with little formation of serum, and he was favorably impressed with the way that tubercular ulcerations acted under dermatol dressing; and in all cases where these dressings were used there was no appearance of dermatitis, — something of special importance in the delicate skins of children.

Dr. Powers, of New York, practically agrees with the foregoing expressions of opinion. He saw no irritation caused by the material, but on the other hand any irritation present quickly disappeared. He reports one case where symmetrical ulcers of specific origin were treated one with iodoform and one with dermatol, the latter healing in less than one-third the time of the former.

Davidsohn reports the use of dermatol in fifty patients at the ear clinic in Berlin. While some of the cases improved very rapidly and a few cases improved, when before they had been unsuccessfully treated with boracic acid, on the whole he is inclined to the opinion that the results in purulent otorrhœa were no more satisfactory than those obtained by treatment with boracic acid.

Dr. F. L. Jack, of the Massachusetts Eye and Ear Infirmary, has told me that in his opinion healing was materially hastened in cases treated with the sub-gallate of bismuth where formerly he would have used boracic acid.

Prof. Everbusch of Erlangen has used the sub-gallate of bismuth in wounds of the eyeball ever since its introduction, and finds it of special value in aiding to get good results; and he much prefers it to iodoform, which he formerly used.

None of the writers thus far quoted have seen anything to lead them to believe that the dermatol was at all poisonous. One case of diarrhœa and one of jaundice occurred in the hospital at Breslau, while the experiments were being made, but in both these cases the trouble persisted for some time after the use of the dermatol was given up. It was not considered as proved, therefore, that they were caused by the dermatol.

Dr. Weissmüller reports seven cases of ulcer of the leg where dermatol was used without success, all of which quickly healed under his own powder. While under the dermatol treatment one of the men complained of vertigo and itching skin. As there is no further mention of these symptoms, the author would have us infer that they disappeared when the use of the dermatol was abandoned; but he does not state it. The second case was that of a woman who had a moist, painful ulcer on the foot. The author strewed dermatol over a large area. Three days later he found her in bed, temperature 39° C.; headache, general lassitude, and without appetite. There was also itching over the whole body, and a burning eruption. On the foot there were blisters filled with serum. The dermatol was removed and his own powder substituted. Two days later the eruption was less and the burning gone, but the patient was weak, restless and sleepless, and complained of headache. At the end of four days she was able to attend to her daily duties.

My own experience began, as I have said, about the middle of September. One of my first cases was very striking. I opened a large bubo in the groin and evacuated about four-fifths of the pus, and without waiting to wash out the remainder I packed the whole cavity with dermatol. At the first dressing, two days later, was surprised to find only a thin, sero-purulent discharge and a good, clean, granulating surface; and a week later the patient was discharged. I found that this did not take place every time; that unless the abscess cavity was thoroughly curetted and cleaned out, the secretion of pus still persisted and the old, slow process of healing followed. Six or eight Cotting's operations for ingrowing toe-nail granulated quickly and were so dry throughout that they allowed a very light dressing to be worn, which was great gain for the convenience of the patient.

I laid open and curetted a sinus with multiple pockets in the neck, caused by suppurating glands. The wound was about four inches in length and three-fourths to one and one-half inches in depth. I had hoped to close the wound by sutures, but the pockets made it seem best to allow it to granulate up. So I filled the wound with dermatol, and at the end of two weeks the patient came again to see me with the wound entirely closed, it having been dressed twice in the meantime by Dr. Richardson of East Boston.

In case of specific or tubercular diseases of the testicle, where removal was necessary, I found, on taking off the dressing on the third day, that everything was soft and moist, and the scrotum was distended with a sero-hemorrhagic fluid. Along the whole length of the wound the stitches seemed moist, and the whole appearance was that of a wound that was going to gape open in a few hours; and a general moist eczema threatened the whole scrotal surface. But the removal of as many stitches as possible and the bountiful application of dermatol made the whole skin nearly dry at the next dressing, and enabled me to get a primary union along the cut surface. From my experience with such cases I am sure that I should not have accomplished this result with any of the other active or inert surgical powders.

Crushed fingers healed very kindly under the powder, and the checking of the secretion tends to make the danger of infection much less. Of course, all such fingers were at first treated to a prolonged antiseptic bath.

The non-irritability of the bismuth compound may be seen from the following case. I removed a wen from a woman's head. The sac had been inflamed and was adherent, so that I was not sure I had removed all. To check possible suppuration I filled the cavity left with dermatol, and sent the woman away. For reasons known only to herself, she did not come back again for three weeks. At the end of that time, she returned and said that the wound had never closed. I looked to see what was the matter, and found the cavity full of dermatol that was nearly dry, and there were no signs of inflammatory reaction about the wound.

Sores of the penis I found could be kept dry more easily than with aristol, but I could see no gain in the time of healing, only the gain of having less secretion. The same I found true of sores in the vagina, — after one or two treatments the discharge was less; but the patients rarely stayed long enough to allow completed observation.

Superficial excoriations and burns of the first degree yield very rapidly to the use of dermatol, the surface drying quickly and thus allowing the epithelial growth to take effect; while with other dressings, the moisture often macerates the epithelial layers almost as rapidly as they are formed. A case in point is that of an old man who had been struck by a locomotive and had a large excoriation on his right shoulder. Dermatol was plentifully scattered over the surface, and over this was a dry gauze dressing, held in place by plasters. On the second day, all but a surface of about an inch square was healed, and this yielded, in spite of the old man's wishes, in a few days more.

In chronic, moist eczematous ulcers of the leg, the soft, boggy skin surrounding the ulcer, after a few dermatol dressings, usually became dry and tough enough to allow the tin plates or stimulating applications to be made to the ulcer proper, to establish granulation.

Irritation of the skin, starting from the heat of a heavy dressing, I have repeatedly checked by the single application of dermatol; and moist, oozing eczema usually yielded to a few dressings of powder.

In no case that I treated did I see any signs of poisoning, either local or general, although half a dram to a dram was repeatedly used, and I was spared the mortification of having to battle with an almost irresistible dermatitis, something that never happened to me before in the same length of time of out-patient service.

Dermatol I found absolutely useless to start granulation in any case where the wound has become sluggish. Indeed, in all such cases it tends to increase the trouble.

One thing must be guarded against. A thick, dry crust of serum and dermatol may form over a wound, and make a perfect little culture chamber for any bacteria which may chance to be on the surface of the wound below. And an accumulation of pus may thus be pent in below the crust, when externally the wound looks to be in a perfect condition.

My clinical observations having on the whole coincided with the work of the men whom I have already quoted, my next point was to carry out some laboratory experiments, to see whether the dermatol really hindered bacterial growth, or acted simply by its (so to speak) mechanical astringent properties, checking secretion and thus depriving the plants of the moisture necessary for their development.

The results of those who have already experimented with dermatol on its bacterial side may be summarized as follows:

(1) Bacteria, mixed with the dry powder and allowed to stand for twenty-four hours, grow when planted on agar or gelatine; though in an experiment, where a mass of staphylococcus pyogenes aureus was mixed with dermatol and put into a pocket beneath the skin of a rabbit, no abscess resulted, while in the "control," when the aureas alone was used, an abscess developed in the usual time.

(2) Thread experiments gave no better results than the control, when inert powder was used.

(3) When the sub-gallate of bismuth was mixed with gelatine or agar, growth usually took place unless the amount of dermatol present was very large, when it was partially or wholly checked.

(4) When dry dermatol was strewn on the surface of tubes of gelatine or agar which had been planted with bacteria, the results have differed. In many cases no growth appeared; in others apparently no hindrance to growth was present. Bluhm gives a list of twelve different varieties of bacteria which he has experimented with, and his results were decidedly in favor of the destruction from the dermatol. In many cases he was unable to find live bacteria on the surface after a few days.

(5) Bluhm also obtained positive results of the retarding action of the dermatol in tubes where the nutrient medium had been colored with an indigo-carmine solution, which is decolorized by the products of bacterial growth. The color disappeared in the control tubes on the third day, and in the dermatol tubes from the tenth to the fifteenth day, according to the amount of the powder used. In these experiments the absence of air was secured.

(6) In fluids the growth of bacteria was not influenced, so far as was observed, by the presence of the dermatol.

The late Dr. John A. Jeffries, in his able paper on the "Antibacteriological Action of Iodoform," exposed the fallacy of deduction made from tube and thread experiments. He also showed that iodoform did have some effect in checking bacterial growth, and suggested as an explanation of this, that was later confirmed by Behring in Germany, that the favorable action of iodoform was doubtless due to its chemical combination with various products of bacterial growth,—the so-called ptomaines. I shall endeavor to show that a similar change takes place when bacteria are grown in the presence of the sub-gallate of bismuth.

In the first set of experiments I planted four gelatine tubes with pus from a newly-opened abscess, and keeping a control tube, dusted the surface of the other tubes respectively with iodoform, aristol and dermatol.

No difference could be seen in the rapidity with which the bacteria grew and liquified the gelatine in all the tubes.

A series of experiments were made where the sub-gallate of bismuth and iodoform were added to equal amounts of melted gelatine and agar. The contents of the tubes were then cooled so that the powder should be mixed as thoroughly as possible through the nutrient media, when cooled. In some half-dozen comparative series, I found that there was practically but little difference in the amount of growth on the variously modified media. Sometimes the growth appeared equal in all respects to the control, while at others there was a marked hindrance to the growth.

In several instances there was a change of color produced by the presence of either dermatol or iodoform. This was most marked in one case, where an orange coccus, grown on gelatine and dermatol, became a dark brown, and the same plant, grown on gelatine with iodoform, lost its color and was white. Planting again on agar, the brown returned at once to its original orange, while the plant grown on iodoform only showed traces of color in the second generation. In another case, where I planted a white coccus taken from a wound, probably a staphylococcus pyogenes albus, on gelatine to which dermatol had been added, the liquified portion became gray, and finally inky black, due in all probability to the presence of the sulphide of bismuth.

These observations go to show that bacteria grown in the presence of sub-gallate of bismuth and iodoform are able to change the chemical combination of the powders present; and in order to bring about this change, it is fair to suppose that the products of bacterial growth, the so-called ptomaines, are also changed.

As the ptomaines are now recognized as the probable cause of septic conditions, and as frequently the poisonous differ from the innocuous only by the change of the arrangement of a few atoms, the fact that the modification of the ptomaines does occur is a fact of

CULTURE-TUBE EXPERIMENTS.

Gelatine.	Control.	Dermatol.	Iodoform.
Staphylococcus pyrogenes aureus. (?)	Slow-growing, liquefying the gelatine. Color, light orange.	Strong growth, slowly liquefying. Color, dark brown.	Fair growth, slow-growing, slightly liquefying. White.
Mixed culture from pus.	Slowly liquefying. Color, yellow and white.	Less liquefaction. Color brown.	Thin line of growth. White.
Pus from suppurating wound.	Growing and liquefying the gelatine with equal rapidity.		
Albus (?) fr. sloughing wound.	Rapid growth, liquefying.	Growth and liquefaction more slow than control. Fluid gray; later, black.	More slow than control. No change in color.
Light yellow coccus from syphilitic testicle.	Heavy and rapid yellow growth	Very slight growth. Color, yellow.	Growth about like control. Color white.
Deep orange coccus.	Small growth, not liquefying.	Very slight growth. Brighter orange.	No growth.
Agar agar tubes. Red yeast.	Small growth.	Less growth.	
Aureas.	Heavy growth.	No growth.	
Crookshanks.	Good growth. Color only at edges at first.	Equal growth. Color, stronger; later, fading.	
Green pus bacillus.	Good growth. Mass of bacilli white.	Tube *a*, growth like control; *b*, no growth: *c*, mass of bacilli black.	
Staphylococcus cereus flavus.	Heavy yellow growth.	Tube *a*, very slight growth; *b*, no growth; *c*, less than control, mould contamination.	
Gelatine tubes planted with pus from abscess of the hand, and the powders dusted on.	All grew and liquefied the gelatine with equal rapidity.		

QUANTITATIVE EXPERIMENTS.

Remarks.	Control. (First 5 estimated.)	Dermatol.	Iodoform.
In first five experiments, .5 c. g. dermatol or iodoform used.	32,400 colonies.	Sterile.	1,123 colonies.
		Sterile.	1,991 colonies.
		5 colonies.	2,475 colonies.
Same as example 1.	12,600 colonies.	Sterile.	336 colonies.
24 hours later.		Sterile.	142 colonies.
			Diminution due to starvation in distilled water. (?)
	9,020 colonies.	2 colonies.	1,920 colonies.
		28 colonies.	
Same bouillon tubes 5 days later.	23,400 colonies.	2,937 colonies.	2,194 colonies.
	Heavy growth.	2 colonies.	Plate spoiled.
		1 colony.	
.2 c. g. used yellow coccus from syphilitic testicle.	Plate destroyed.	Sterile.	
Aureus, old culture.	233 colonies.	3 colonies.	
Crookshank's purple.	1 large colony.	Sterile.	
Aureus, recent culture.	10,000, estimate.	Sterile.	
Albus.	50 colonies.	Sterile.	
.3 c. g. used. Staphylococcus cereus flavus.	82 large colonies.	*a*, 61 small colonies; *b*, sterile; *c*, sterile.	
Green pus.	Very heavy growth.	*a*, *b* and *c*, very heavy growth.	
Anthrax.	Heavy growth.	6 colonies.	

importance in considering the merits of any antiseptic powder.

I lastly made a number of quantitative experiments, following the line of Dr. Jeffries in which he obtained most positive results in his work on iodoform. My method was as follows: I added a small number of bacteria to tubes containing 10 c.c. of bouillon, and bouillon to which equal amounts of iodoform and dermatol had been added, and let the tubes of the same series remain under similar conditions, that is, some series remained twenty-four to forty-eight hours in the constant temperature apparatus; others stood at the room temperature; and some were left partly at room temperature and partly in the thermostat. When ready, I took accurately measured amounts from each of these tubes and added this to tubes containing 10 c.c. of sterilized water; and taking a measured amount of this dilution, I added it to agar tubes where the agar was just on the point of cooling, and made agar plates. These plates remained in the thermostat a sufficient time, and the colonies were then counted. By this means I was able to get a fairly accurate quantitative result, and a comparison between the free growing bacteria and those grown in the presence of iodoform and dermatol.

The conclusions that I have drawn from my investigations are, that the sub-gallate of bismuth, called dermatol from its astringent properties in checking secretion—also, its odorless, non-irritating, non-poisonous properties—has proved itself to be a valuable addition to the surgeon's armamentarium. And the laboratory experiments show that in addition to its mechanical power of repelling water, and thus producing a food famine and consequent death of many of the bacteria, that it has active powers in hindering bacteria growth, although it does not have bacteriacidal action. The method by which this hindrance is accomplished is probably due to its chemical combination with the ptomaines produced by the growth of the bacteria, forming compounds hostile to their rapid development.

Note.—I use the word ptomaines according to the definition of Brieger, and they include all nitrogenous bases that are formed by the action of bacteria.

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THE KIND AND AMOUNT OF LABORATORY WORK WHICH SHALL BE REQUIRED IN OUR MEDICAL SCHOOLS.[1]

BY VICTOR C. VAUGHAN, PH.D., M.D.,
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IT will not be necessary for me to give the arguments in favor of teaching medical students, by the laboratory method, many of the sciences which must enter into the curriculum of study. I will take it for granted that all reputable teachers of medicine understand that analytical chemistry, practical anatomy, bacteriology, histology, physiology, analysis of urine, pathology, etc., must be taught in the laboratory, in part at least, if taught at all. How can you expect the practitioner to tell whether a given bit of tissue is from a malignant growth or not, when he has never seen a cancer-cell? How could he be trusted with such an examination when he has never used a microscope, cut a section, or made a microscopical mount? How can the young practitioner diagnosticate tuberculosis in its early stages, when he has had no practical experience in staining germs and when he could not recognize the bacillus tuberculosis should it be placed before him? How can he detect tyrosine or leucine in the urine, when he does not know a crystal from an air-bubble? How can he recognize structural disease of the kidney when he does not know a cast from an epithelial cell? These questions suggest their own answers. It might be said, possibly, that many of the older men now practising medicine and doing so satisfactorily (and, indeed, with credit to themselves and to the profession) never had laboratory instruction in these branches. This is true, but these men have been compelled to take up these new studies and methods for themselves. Besides, more is expected in these directions from the recent graduate than from the older man. Medical schools should always give the best and the most recent information, and every fact which may possibly aid in the diagnosis and treatment of disease should be made known to the student. The student has the right to expect and to demand this of teachers, and all intelligent and conscientious students will do so. The time once was when the teacher was a model from which his students copied. The student measured his own success by the extent to which he imitated his master. Now, that teacher who does not give his student opportunities for independent and original work in science is to a large extent a failure. Just as in the general progress of the race one generation should be wiser than the preceding, so every class should contain one or more students who will at maturity be wiser than the best teacher.

I will presume that all of us here agree that laboratory instruction should be given in medical schools; and with this presumption I will now turn to the question of what in kind and amount, should this laboratory teaching consist.

We will suppose that the student has had a course in a good high school, or an equivalent of this. (The best medical colleges are not satisfied with a less requirement for admission.) The student is able to use the English language correctly, and he has had a good drill in mathematics, including arithmetic, algebra and plane geometry. He has had, we will suppose, fair instruction in systematic botany and zoölogy. He is acquainted with the general classification of plants and animals, and knows the meaning of the general terms employed in the natural sciences. He has some knowledge of physics, knows what is meant by the conservation of energy, and understands the fundamental principles underlying our knowledge of heat, light and electricity. I am aware of the fact that many medical schools admit students who have not these qualifications, but such a school does not comply with the rules of this Association, and I am to discuss the question of laboratory teaching in those colleges which belong to this Association and which live up to the requirements to which we have mutually and voluntarily pledged ourselves.

In the first place, it will be convenient to specify what I mean when I speak of the number of hours, days or weeks given to a subject. We will suppose that there are five teaching days in the week, that the forenoons of these days are devoted to class instruction given in the form of lectures and recitations, and that four hours of each afternoon are spent in laboratory work. In certain schools, this order may be reversed, or some of the laboratory instruction (practical anatomy, for instance) may be given in the evening. With the understanding then that four hours shall constitute a day of laboratory work, I will outline such a course as I conceive to be essential to the student.

The courses of laboratory work which should be embraced in the medical curriculum are: (1) Analytical Chemistry, (2) Practical Anatomy, (3) Bacteriology, (4) Physiological Chemistry, including the analysis of urine, (5) Histology, (6) Physiology, (7) Pathology.

(1) Analytical Chemistry. The medical student should become acquainted with the physical properties, solubilities and general reactions of the salts of silver, lead, mercury, copper, arsenic, antimony, bismuth, iron, zinc, cobalt, nickel, barium, calcium, potassium, sodium, lithium and ammonium, which are employed in medicine. This knowledge cannot be properly acquired from a study of books alone. The student must see these compounds, must dissolve them, and must ascertain their incompatibles by precipitating the bases and acids with various reagents. To do this properly, experience has shown that a course of twelve weeks is required. If a shorter time is given to this branch, the work must be done superficially, and the knowledge is but imperfectly acquired.

(2) Practical Anatomy. Each student should first

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[1] Read before the Association of American Medical Colleges, and published in the JOURNAL at the request of the Association.

have a thorough drill in osteology. With the bones before him, he must study their size and shape, the nature of their articulations, the points of origin and insertion of ligaments, tendons and muscles, and the location of foramina. Then he should carefully, slowly, intelligently, under the eye of a demonstrator, dissect every part of the body; and, in doing so, he must not only study the position, size and physiological office of each muscle, but of the viscera, the blood-vessels and nerves. My observation has led me to believe that too often dissection means nothing more than a study of myology. If the student is to become a surgeon, it is quite as important that he should know what blood-vessels and nerves are to be severed in a given operation as to know what muscles he must traverse with his knife. If he becomes a general practitioner, he will need to recall the anatomy of the viscera more frequently than that of the muscles. Every medical school should also offer a course in surgical anatomy. Of course, the professor of anatomy dissects before the class, and gives especial attention to the hernial region and other parts of the body upon which surgical operations are often necessary, but this is not enough. Such knowledge as this is what our legal friends would designate as hearsay. The positive knowlege can be gained only by the student using the knife himself. Knowledge thus gained becomes a part of himself, and arms him with a consciousness of its own resources when he is called upon to do the operation for the first time upon the living body.

The osteology should be taught during the first part of the first year. Then the courses in dissection may follow while that in surgical anatomy is of most benefit when given later in the curriculum and at a time when the student is in attendance upon the surgical clinics.

I think that twenty weeks' time is none too long for the osteology and the dissections, while four weeks more might be given to the operative work.

(3) Bacteriology. Practical bacteriology is taught as an undergraduate course in only a few medical schools, but this is not as it should be. The germ theory is now, and has been for some years, much more than a theory, and the causal relation of certain bacteria to certain infectious diseases has been demonstrated with all the certainty of direct scientific experimentation. We all teach that tuberculosis, diphtheria, typhoid fever, etc., are caused by bacteria; that the detection of these bacteria, in many cases, offers the only early sure means of positive diagnosis; and yet only a very few colleges give positive and demonstrative instruction in this branch. Every sanitarian speaks of the spread of typhoid fever by contaminated drinking-water; and still, of the hundreds of medical students graduated in this country within the past three months, only a very small number have any conception of the method of procedure necessary to detect the typhoid germ. The surgeon dwells upon the fact that the pyogenic germs give rise to suppuration, and seldom demonstrates these organisms to his students. Great stress is placed upon the necessity of examining the sputum in suspected tuberculosis; and yet hundreds of graduates of the present year would not know how to stain the germ, nor would they recognize it were it stained and placed before them. We teach that in many cases the recognition of the Löffler bacillus is the only means of the positive recognition of diphtheria; and yet how many teachers make their students acquainted with the practical means of recognizing this organism? There is just cause of complaint on this point. Schools which neglect this branch of instruction are not giving their graduates the proper equipment.

A course of bacteriology embraces the methods of the preparation of the various culture media, of the process of obtaining pure cultures, of the nature of growths on the various media, of the effect of pathogenic germs on animals and of the detection and identification of the germs in tissue, in sputum, in drinking-water, and elsewhere. Such a course should begin with a study of the non-pathogenic, and proceed to that of the pathogenic bacteria. I have tried the teaching of bacteriology in all the classes of a four-years' course, and find that I can teach this subject to students of the first year as satisfactorily as to those of the fourth year. Indeed, there is an advantage in having the instruction given early in the course. The student who has studied the diphtheria bacillus or that of tuberculosis in the laboratory, and knows the manner of their growth, and has watched their effects upon animals, will listen to his clinical lectures upon these diseases with greater interest and more intelligence than the student whose only knowledge of these organisms is confined to that of their names with some imperfectly understood text-book or lecture description of them. Ten or twelve weeks should be given to this course.

(4) Physiological Chemistry. This course should embrace a chemical study of the most important secretions of the body. The tests for hydrochloric and lactic acids in vomited matters, the recognition of the digestive ferments, and the method of the determination of the activity of the same, and an analysis of the urine and the bile should be included. The student should be made perfectly familiar with the constituents of normal urine. In most medical schools, the analysis of urine is limited to the detection of sugar, albumin and bile. Students with such training often mistake epithelial scales for casts, and pronounce every reducing substance found in the urine, sugar. I meet with mistakes of this kind frequently, and have known more than one physician to lose the confidence and respect of the patient and his friends by mistaking an epithelial scale for a cast. A physician is often pardoned for overlooking a serious trouble when it exists, but it is a sad mistake to tell some man that he has an incurable form of Bright's disease or diabetes when nothing of the kind exists. The patient gets over his fright after a while, but he is not likely to forgive the doctor who has made the blunder.

I believe that analysis of urine should form a part of clinical instruction, but this work should be preceded by a scientific study of normal urine and the scientific methods of estimating the most important normal and abnormal constituents of the urine. The course in physiological chemistry will occupy not less than ten or twelve weeks.

(5) Histology. The medical man certainly must be able to recognize the various tissues of the body by their microscopical appearance. He must be acquainted with the methods of hardening specimens, making sections, mounting and staining the same. This knowledge cannot be acquired from books or in the lecture-room. Laboratory instruction in this branch is a necessity. This knowledge can be gained in a course of six weeks.

(6) Physiology. All medical teachers admit the

necessity of practical dissection in acquiring anatomical knowledge, while but few schools give practical courses in physiology. Notwithstanding this, it is certainly true that the medical man needs to employ his physiological knowledge as often as he does his anatomical learning. When such instruction is properly given we will have much more intelligence displayed in the practice of medicine. One needs to know the anatomy of the heart in order to detect valvular disease of that organ, but the number of functional diseases of the heart which one is called upon to treat is certainly greater than that of structural diseases of the same organ, and yet the student in most of our schools, has no practical instruction on the innervation of the circulatory system. How many of us were able from knowledge gained from our undergraduate course to intelligently apply electricity to any part of the body, to mark out anæsthetic areas which would result from injury to or disease of any nerve, to intelligently interpret the reactions obtained in testing the knee reflex, to properly ascertain the degree of sensation in any muscle, to explain the relation between injury to the floor of the fourth ventricle and the glycogenic function of the liver, or in short did we have any positive physiological knowledge other than a general idea of the processes of digestion, absorption and elimination? Do we not feel the want of this training in the work of every day? Should we not see to it that our students have this instruction? A six weeks' course in laboratory physiology will in my opinion be of great service.

(7) Pathology. The necessity of practical instruction in this branch will be admitted by all. Such a course should embrace both gross and minute pathology. The bungling way in which post-mortem examinations are often performed, and the little information which the medical man usually gets from such an examination, afford abundant evidence of the fact that gross pathology is too much neglected in our schools. Without microscopical pathology, the determination of the nature of many growths in quite impossible. Let us give six weeks to the dead-room and laboratory courses in pathology.

To sum up I would say that the following laboratory courses are essential:

(1) Analytical Chemistry, twelve weeks.
(2) Practical and Surgical Anatomy, twenty-four weeks.
(3) Bacteriology, ten to twelve weeks.
(4) Physiological Chemistry, ten or twelve weeks.
(5) Histology, six weeks.
(6) Physiology, six weeks.
(7) Pathology, six weeks.

This makes a minimum of seventy-four weeks. The greater part of this work should precede clinical instruction. Besides the above mentioned courses, therapeutics, including electro-therapeutics is now being taught in some schools largely by laboratory methods, and this tendency will grow.

Laboratory methods will soon largely modify clinical teaching. Ampitheatre clinics are giving away to bedside and section instruction. Laparotomies and other capital operations are now made by the student in some of our schools on dogs. The surgeon as well as the chemist has his laboratory. The student delivers the alcohol baby from the rubber mother before he is permitted to enter the lying-in-room. It is no longer necessary to spoil a hatful of human eyes before one becomes a skilful ophthalmologist.

Clinical Department.

PAIN IN THE SOLE OF THE FOOT ON WALKING.

BY J. J. PUTNAM, M.D.

At a meeting of the Society for Medical Observation of April 6, 1891,[1] I mentioned a mode of treatment which I had found effectual in several cases of a painful affection of the sole of the foot. The communication was unpremeditated, and I had not posted myself particularly upon the literature of the subject, but I presumed that the affection was the same as that which has been admirably described by Dr. E. H. Bradford[2] under the name of Morton's affection of the foot.

I write now mainly to enclose a spontaneous tribute to the value of the treatment which I suggested.

I may say that I do not claim any originality for the treatment, but that having been myself a sufferer for many years and having therefore tried various modifications of the plan suggested, my experience may be worth recording.

The affection as I have seen it consists in a tenderness of the sole, usually most marked opposite the space between the distal ends of the third and fourth metacarpal bones. In walking there are often referred sensations along the corresponding toes. If walking is persisted in, soreness often ensues, which finally may give rise to dull pain throughout the whole leg. It is worse in wet and cold weather.

The treatment consists in protecting the tender point, either by putting a thin but stiff leather inside-sole into a broad shoe, with a hole cut of appropriate size and shape, or else by making a depression at this point in the sole of the shoe. This can be done by having the last made with a projection on it at the proper place.

I have found it very important to make the hole in the inner sole of oblong shape, the long axis (which I think should be an inch or an inch and a half in length) running parallel with the metatarsal bone. In my own case the opening begins within about a quarter of an inch of the outer edge of the sole, and then slants forward and inward. The space between the heads of the third and fourth metacarpal bones lies opposite the opening. I find the proper place to make the opening by putting aniline ink over the tenderest spot on the sole of the foot, and then letting the patient put his naked foot into the shoe containing the inner-sole, which has been moistened with water so as to absorb the stain. Of course, there is some smearing, but the most anterior point is obtained in this way.

After a time, the leather of the boot-sole is pressed up into the hole in the inner-sole, and then it may be necessary to renew the boot or shave off the elevation.

In my own case, I have had my boots made for many years on a last which has a prominence on the sole corresponding to the hole in the inner-sole which I had formerly worn. Except when wearing a shoe made on this last, I can rarely walk a mile without great discomfort; and it must be admitted that in wet weather, which invariably makes the trouble worse, walking is still painful.

The letter to which I referred is as follows, from Dr. Frank Holyoke, of Holyoke, Mass.:

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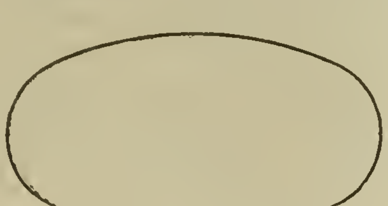
[1] Boston Medical and Surgical Journal, June 18, 1891.
[2] Ibid, July 16, 1891.

"In the *Boston Medical and Surgical Journal* of June 18th, 1891, page 607, I was delighted to find your reference to 'cases of pain (on walking) in the sole of the foot, radiating out to certain toes,' for I was at the time much embarrassed in my attempt to relieve the above complaint in two ladies, both of whom had been sufferers for many years; one having had two joints of the fourth toe amputated by some physician who thought in so doing to afford relief. Since the operation (one year ago) however, she has suffered even more.

"I had your treatment carried out immediately in both cases.

"The shoes fit nicely about the ankle and instep, but are broad enough for all five toes to lie flat, without lateral pressure. They afforded no relief until the oval of about this size



was cut out of the inner sole, following your directions.

"No. I put on her shoes ten days ago. On the fourth day, being so pleased with the instantaneous relief, she walked up Mount Tom and back, a distance of five miles, and says, 'I did not know that I had any feet. I felt as though I had wings.' Hers are buttoned shoes.

"No. II (the one where the toe was so stupidly amputated) had a pair of shoes made to order which lace down to the toes, by which means she can regulate the pressure. She has worn them for six days now, and reports equally satisfactory relief.

"From your few lines I have made enough to keep me in shoes for a year, and I wish to extend to you my most hearty thanks! If you care for a sober report on these two cases, I would be happy to send it."

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Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY CHARLES M. GREEN, M.D.

CHOREA GRAVIDARUM.

Riche[1] concludes, in his thesis in this subject, that although this affection is very rare, the etiological influence of pregnancy in the production of chorea is incontestable. It is seen to occur in the course of pregnancy in women at other times unaffected, to recur only in successive pregnancies in the same persons, and to get well before delivery. Riche believes that the prognostic importance of the affection has been much exaggerated. He thinks the administration of chloral in large doses in an efficient means of treatment.

THE IMMEDIATE CLOSURE OF LACERATION OF THE CERVIX.

Garrigues[2] (New York) reports a case in which his patient nearly lost her life by arterial hæmorrhage from a torn cervix: hot water and styptic iron injections failed to arrest the bleeding, and finally a tampon was used with success. Garrigues remarks that when such an accident occurs in a hospital, it is a small matter to unite the cervix and effectually arrest hæmorrhage; but that in private practice such a course is not always feasible, and then a well-applied tampon is of the greatest value.

In 1874 the late Dr. Pallen (New York) recommended and practised the immediate closure of the badly lacerated cervix with silver wire, whether or not there was hæmorrhage. Garrigues, however, believes that hæmorrhage should be the only indication for immediate closure, his own experience being that many lacerations heal spontaneously, so that an operation would be superfluous. On general principles, too, he believes that post-partum operations on the cervix expose the patient to a possible infection; but if there is hæmorrhage which resists hot water and stypics, he holds that primary suture, under proper asepsis, is preferable to the tampon.

[As was pointed out in a previous report, if a vaginal tampon is used to control hæmorrhage from a torn cervix, it is wise to plug the uterus with sterilized gauze, after the manner of Dührssen, before applying the vaginal tampon; but at the best, the most that can be said in favor of tampon treatment for cervical hæmorrhage is that in private practice it is of somewhat easier application than the suture. The latter operation is not so difficult, however, as it might seem to one who has never performed it. The writer has done the primary operation four times, — three times to arrest hæmorrhage, and once for experimental purpose. In these cases he operated with the patient on the back, cross-bed, forceps position; the anterior and posterior cervical lips each seized with a volsellum forceps. The cervix was thereby easily drawn to within easy sight and touch at the ostium vaginæ: this traction on the cervix has the further advantage that cervical hæmorrhage is thereby checked or much diminished, as was explained in a previous report. If necessary, retractors may be held by the two assistants supporting the legs, by which means the cervix is sufficiently exposed; no speculum is used.

The cervix once exposed, the operation of suturing is extremely simple. In his four cases the writer used a curved needle and continuous cat-gut suture: there seems to be no necessity of using silver wire. From his present point of view the writer is strongly in favor of the suture in preference to the tampon in checking hæmorrhage from a torn cervix; but he proposes after a more extended experience with the primary operation to report his cases and results. — Rep.]

FURTHER EXPERIENCE IN THE USE OF THE UTERINE TAMPON IN POST-PARTUM HÆMORRHAGE.

Stäheli[3] (Berne) reports that in the years from 1880 to 1888, in the Clinic and Policlinic of Berne, six cases were lost from acute anæmia *post partum*, which in his opinion could probably have been saved by the intra-uterine tamponade. Since 1888, in these clinics, this tamponade has been used forty-nine times, partly on account of active hæmorrhage, partly as a prophylactic. Of these cases one ended fatally from sepsis after Cæsarean section.

The chief indications for tamponing the uterine cavity were atony of the placental surface, whether the placenta be normally or abnormally seated, general uterine inertia after Cæsarean section, atony in uterus subseptus or bicornis, failure of contractions after removal of hydatidiform mole, and hæmorrhage after labor in fibroid uteri. The tamponade was also employed for severe hæmorrhage from tears in the vagina and cervix. Stäheli testifies that by this method hæmorrhage was always surely and promptly checked.

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[1] Thèse de Paris, 1891: Revue des Sciences Médicales, April 15, 1892.

[2] American Journal of Obstetrics, November, 1891.

[3] Korrespondenzblatt für Schweizer Aerzte, 1891, No. 21; Centralblatt für Gynäkologie, 1892, No. 21.

[It is gratifying to know that in the uterine tamponade with iodoform gauze, or, failing this, with sterilized strips of bandage or other suitable material, we have a sure means of arresting post-partum bleeding, when the common methods fail. But it is hard to realize why in some clinics there should be so many cases of hæmorrhage not readily controlled by uterine massage, ice, hot water, and other familiar measures. In fibroid uteri, or after extreme cervical tears, or perhaps after placenta prævia and removal of hydatidiform moles, any one may have alarming hæmorrhage which the usual measures will not control; but there are many obstetricians who in a large experience rarely see a severe post-partum bleeding (except in the classes of cases above mentioned), provided the labor, *including the third stage*, has been properly managed. However, an obstetrician should have many expedients and a readiness for prompt action in the face of hæmorrhage which may soon prove fatal; and it is therefore well to know that in the uterine tamponade we have a hæmostatic which has stood the test of experience. — REP.]

THE MANUAL RECTIFICATION OF OCCIPITO-POSTERIOR POSITIONS.

Grandin[4] (New York) in a recent paper, raises this query: "Given the diagnosis of occipito-posterior position at the brim, is it not advisable often to convert it at once (whilst the conditions are favorable) into an anterior position?" Realizing that a posterior occiput carries with it, as a rule, slow engagement, protracted descent, and possible non-rotation to the pubic arch; further, that after descent to the pelvic floor, operative interference is often called for by fœtal or maternal exhaustion to the frequent detriment of maternal soft parts, or injury to the fœtal head, Grandin believes that in many cases it is good practice, in the interest of *preservative* obstetrics, to introduce the entire hand, explore the pelvic brim, and in the absence of contraindication to grasp the head, rotate it to an anterior position, and then leave the case to nature unless speedy delivery is indicated, when forceps may be used with ease and safety. In the discussion of the paper Grandin pointed out, in reply to a criticism that the head thus rotated would not remain anterior, that it was his practice to rotate the body as well as the head, and that when the trunk had been rotated the head would remain anterior.

Grandin by no means claims that all occiput posteriors should be rotated manually at the brim, since many cases descend into the pelvis without undue delay, if the head is kept flexed; but he presents this expedient as safe in aseptic, skilled hands, and preferable to any form of instrumental interference after the mother is exhausted, and the head perhaps impacted in an unfavorable position.

[The writer is glad to add his approval of the measure advocated by Grandin: for several years he has practiced manual rectification at the brim, and has taught it to his classes. There is, however, another expedient which the writer has often found successful, and which should be resorted to before manual rectification when the head is still disengaged; namely, *postural* treatment, whereby advantage is taken of the force of gravity. The writer has often found that a disengaged occiput-posterior, with unruptured membranes, would rotate to an anterior position, if the woman is placed in a latero-prone posture, on the side towards which the occiput is directed. Where this posture has failed, he has found rotation to occur on placing the woman on her knees by the bed side and having her remain leaning forward on the bed for a time. But when these postural methods are not successful, the reporter firmly believes in the wisdom of high manual rotation of the head, the body being at the same time rotated by the disengaged hand externally, or by the hands of an assistant. The writer would have it clearly understood, as did Grandin, that this method is not advisable or by any means necessary in all cases. Generally the head engages and descends without difficulty, if the pains are good and the head is kept well flexed. But there is a certain proportion of cases in which the biparietal diameter will not pass through the sacro-iliac arch without long delay, if at all; and in such cases manual rectification is much safer than high forceps and much easier than internal podalic version. — REP.]

SUBNITRATE OF BISMUTH AS A DRESSING FOR THE UMBILICAL CORD.

Stuart[5] recommends the following plan of dealing with the funis: A piece of lint, with a hole just large enough to permit the cord to be passed through it, is applied and pushed well down to the abdomen, the skin around the cord having been previously dusted with subnitrate of bismuth. The same powder is then applied sufficiently to cover the stump of the cord, the lint is folded over it, and the binder applied.

The advantages claimed for this method are that the application has to be made only once, as the parts need not be disturbed till the cord drops off. The method is absolutely safe and quite cleanly, the cord separates more speedily than by any other method, and the resulting cicatrix is firmer.

THE TREATMENT OF ASPHYXIA NEONATORUM.

W. E. Forest[6] (New York) has written a valuable paper on this subject, in which he describes a new method of artificial respiration which is well worth a general trial. Forest divides cases of asphyxia neonatorum into two classes: (1) Those that can be resuscitated by simple measures that excite reflex action; (2) those that absolutely require ventilation of the lungs through artificial respiration. The first class includes those cases in which the muscular tonus is not lost, and which readily respond to the reflex irritation of slapping, the alternate hot and cold plunge, and other simple and familiar measures: such cases come under Lusk's classification as instances of livid asphyxia.

The second class of cases includes those known as instances of pallid asphyxia, in which the reflexes are lost, and which, for successful treatment, require a maintenance of heat and artificial respiration. Of the various methods of artificial respiration Champney has found by experiment that there are only three by which an appreciable amount of air can be introduced into the unexpanded lungs of an asphyxiated infant; — Sylvester's method, Schultze's swinging method, and the direct introduction of air through a catheter or by mouth to mouth insufflation. Forest, while admitting that the Schultze method is occasionally effective, considers that it is open to great objections; partly because the swinging movements entail a loss of heat which may be fatal to success, and partly because the method is too rough: the nervous shock is believed by him to be sufficient to stop the heart's action in feeble infants, and moreover Champney found that the inspiratory movement was so violent as to cause frequently lesions in the anterior mediastinum.

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[4] American Journal of Obstetrics, May, 1892.

[5] Medical News, December 19, 1891; British Medical Journal, April 16, 1892.

[6] New York Medical Record, April 9, 1892.

The well-known Sylvester method, Forest believes to be far more safe than, and equally as effective as, the Schultze method: by the former about the same amount of air is drawn into the lungs and expelled as by the latter method, without the risk of fatal nerve shock or injuries in the anterior mediastinum. [As ordinarily practised, however, this method has the disadvantage that no adequate provision is made for maintaining the infant's heat; the mere covering with warm blankets is not as effectual as immersion in hot water.]

Forest objects to the method of insufflation through a catheter, that the introduction of a catheter through the larynx is by no means easy, that there is risk of injuring the delicate vocal cords, and that if the catheter fits the larynx at all snugly air cannot escape around it and that consequently there is risk of injury to the air cells by undue zeal of the operator. Further, by this method as usually practised, there is no provision for expanding the chest in a physiological way by raising the ribs and sternum, but only by the pressure of air from within.

The new method proposed by Forest aims at uniting the advantages of the Sylvester method with direct insufflation after the chest is expanded, while at the same time provision is made for maintaining the vital heat. Forest's method is as follows:

(1) Lay the child on its face for an instant with the head and thorax lower than the pelvis, and make quick, but not violent, pressure on the child's back. This is done to expel any fluids that may have been drawn into the child's mouth during labor. [The reporter has found that a very efficient method of removing inspired mucus and liquor amnii is to suspend the baby by the heels and extend the head; an assistant may, if necessary, remove viscid detritus from the mouth with a towel or the finger. This method effectually drains the throat and bronchi, and has a further beneficial effect in directing blood to the brain.]

(2) Place the child in the sitting posture in a pail or tub containing six or eight inches of water as hot as can be borne comfortably by the operator's hand. [It would seem more advantageous to have the water of sufficient depth to reach the infant's neck.] The child is supported in this position by one of the operator's hands across the child's back, the infant's head bent back and resting in the crutch between the thumb and forefinger of this hand. The child's hands with the palms to the front are held in the other hand of the operator.

(3) The child's hands are carried upward until the infant is suspended by the arms, the buttocks just raised from the bottom of the pail. The head now falls back, and the operator leans forward, and, mouth to mouth, blows into the child's lungs.

(4) The child's arms are then lowered until the hand of the operator holding them rests across the front of the child's thorax. Then the body of the child is doubled forward, and, at the same time, its thorax is compressed between the operator's hands, one in front, the other behind. This expels the air from the lungs and completes the movements.

Forest believes that artificial respiratory movements should be made at the rate of forty per minute instead of twenty, as usually taught: further that the physician should not depend upon palpation, but upon auscultation, to determine whether or not the infant's heart beats, as the stethoscope often reveals a faint pulsation not perceptible by the fingers.

[For a long time the reporter has relied upon hot water immersion and mouth to mouth insufflation in all cases of pallid asphyxia. The method of Forest combines with the advantages of this method that of expansion of the chest, in a physiological, *vis-a-fronte* manner, prior to each inflation of the lungs: his method seems easy of application, rests on a sound scientific basis, has proved very effectual in his hands, and deserves to be generally tried.]

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Reports of Societies.

NEW HAMPSHIRE MEDICAL SOCIETY.

The annual meeting was held in Concord, June 20 and 21st, President, Dr. Moses W. Russell, in the chair.

TUBERCULOSIS.

Dr. S. W. Roberts, of Wakefield: Tuberculosis is that pathological condition of the system which has its nidus in the nervous system, by which tubercular matter is secreted from the blood. Just what this pathological condition is, accepting or not accepting the germ theory, we know nothing. The development of the tubercle is only more proof that the condition exists. If the germ is the sole cause of tuberculosis, why is there so much irregularity in the length of time it takes to destroy it, for it to produce fatal results? Why not the regularity in this as in the self-limited diseases, such as scarlatina, diphtheria and typhoid fever? Why should there be such a variety and apparently so many diverse channels in the incubative stage, on the germ theory, in this disease and so totally different from the diseases referred to? Why has the germ never been seen in the blood, and seen only in tubercular matter?

Whether the germ is the cause of the effect, it is certain, as the Irishman said of the chipmonk, that it commences to dig its hole at the inner end The means by which a habitable home is prepared for the bacillus are predisposing and exciting. Inheritance is a great predisposing cause. Mothers, especially if they nurse their children, are morally certain to communicate to them something of any constitutional chronic disease they may have. The late Dr. Bancroft said that in nine times out of ten mania was inherited. I know of no case where the children of insane parents did not show signs of insanity and frequently become maniacs.

Malnutrition is an exciting cause. Given the predisposition, this may produce in one child cancer or scrofula, and in another child of the same parent, Bright's disease, or chronic rheumatism. The late Dr. Amos Twitchell cured the malignant growth of his eye by an exclusive diet of bread and milk, which proves that malnutrition was the exciting cause of the malignant growth.

Sudden and severe disappointment, irregularity of the menstrual function, etc., are exciting causes. Contagion is another cause. I do not allow a person to sleep with a consumptive.

Dr. A. K. Day, of Concord, detailed a simple method of preparing sputa for examination. In most cases the patient should be informed of his condition. Consumptives are proverbially hopeful of recovery, and the knowledge of the real state of affairs will be an incentive to do his utmost to aid the physician in his work. To prevent the spread of the disease the germs should be destroyed. The most effective germacide is heat. The moisture of the sputa prevents the dissemination of the bacilli through the air, and they should be destroyed before drying has occurred. Pasteboard sputa cups may be used and burned as soon as filled. Cuspidors must be cleansed thoroughly with boiling water at least once a day. Cloths that have been used must be immediately burned or boiled. If these measures are carried out isolation of the patient is unnecessary.

An elevated attitude is almost three times as favorable to recovery as a low one. In most cases patients cannot have a change of climate. Dwellings must be well ventilated, well warmed, and have an abundant supply of sunlight. The patient must spend as much time as possible in the open air in good weather. If his occupation keeps him indoors a great part of the time he should change it. The diet must be nourishing and there should be definite directions as to the amount taken. Two or three quarts of milk daily can be borne well enough by most patients even when the appetite is poor. A liberal amount of meats, fats and farinaceous food should be prescribed.

Solutions of chloride of gold and sodium and of iodine, administered hypodermically, I have had some experience with. Under their use expectoration lessens, and the general condition of the patient seems to improve very materially. In the absence of any known specific it would seem that our chief reliance, in the line of medical treatment, must continue to be the use of agents that improve nutrition, cod-liver oil, iron and arsenic when indicated by anæmia, an occasional bitter tonic if the appetite fails, and stimulants as required. Opiates are often needed to check cough, but in the early stages should be used only when absolutely needed. In the later stages they are required as a palliative.

Dr. W. Childs: The idea that diseases were intended by God Almighty to be a production of man and woman is an absurdity. Consumption has long been turned over to the list of inherited diseases, but you will see as many cases of consumption occurring in families which have been entirely free from it as in families which have had it. In regard to rheumatism I am doubtful; I cannot account for all the facts.

Dr. L. G. Hill: I cannot agree with Dr. Childs. It is settled the world over, that consumption is inherited. As to the treatment of the disease, as has been said, a nutritious diet is important, but good air is of more importance. A cheerful mind is a good auxiliary. It is better for the patient to be at home than in Florida or California. But pure air is the principal thing. Here is a tube which has benefited hundreds of people. You breathe through it until the lungs are filled, and when you go to exhaust the air this little ball falls down, and the air passes out through the small opening, which causes the lungs to be filled for a much longer time than they would have been without the tube.

Dr. J. W. Parsons: That consumption is often inherited I think there can be no question. Just how a disease or a characteristic passes from one person to another is doubtful. What it is that gives me my height and a resemblance to my father I cannot explain.

In regard to its cure, I think I have known more remarkable results from climate cure than by any other means.

Dr. F. A. Stillings: When Dr. Roberts says that people inherit consumption, does he mean that they inherit tubercular bacilli, or a predisposition to contract the disease, just as Dr. Parsons was born with a predisposition of growing lengthwise instead of front and back? Perhaps Dr. Childs will admit a predisposition.

Prof. C. P. Frost: Dr. Stillings comes nearer my idea of heredity than any of the others. I do not believe that consumption is inherited as a child inherits a fortune from its parents, but that it inherits a constitution very much like that of the parent, and if the parent, under certain conditions, developed phthisis, the child placed under similar conditions is likely to have phthisis also. The same is true in regard to rheumatism.

As to the treatment of the disease, very much depends on diet and so forth. I fear we shall never find any specific. I have hope that something may come out of the field where Dr. Koch has broken ground; I think it is possible that something will be developed which will diminish the susceptibility of the constitution to the growth of this particular bacillus.

Dr. Roberts: I fail to discover any intrinsic difference between inheriting a predisposition to a disease and inheriting the disease.

Drs. Morrill, Carbee, Crosby and **Adams** also took part in the discussion.

OBSTETRICAL ASEPSIS AND ANTISEPSIS.

Dr. Ella Blaylock, of Nashua: Insist that the room be large, airy and well lighted, and properly ventilated. Give the patient plenty of fresh, warm air. Don't let her be poisoned with inhalations from her own secretions from the mistaken notion of danger of catching cold. Let the furniture be plain, and all but absolutely necessary articles removed. If possible, dispense with carpet and curtains. The bed must *not* be feathers, and all coverings should be newly washed. Tarred paper under the folded sheets forms a good antiseptic protection. Insist upon the nurse wearing a wash dress. If you have any special dress for such occasion see that it is fresh and clean for each case.

For the antiseptic, I am strongly in favor of: sulpho-naphthol one drachm to a pint of water. It is non-irritant, not poisonous in any quantity, and will not corrode your instruments. Let your bag contain a box of antiseptic vaseline, soap and a nail-brush.

If you have been attending a post-mortem, or dressing any bad wound, or attending an infectious disease when called to a case of labor, take a full bath and change all your clothing. Before making an examination clean your nails and *scrub* them thoroughly, and your hands also, with your chosen antiseptic. When making an examination satisfy yourself if possible that everything is all right, and then, in ordinary cases, if early in the labor, let the patient severely alone; frequent examinations simply increase the danger of sepsis.

If necessary to rupture the membranes, do this with your finger or an antiseptic probe. During the second stage, if the progress is slow, the head, as it emerges, may be smeared with antiseptic vaseline, some of which with its recession will be carried back and serve as a disinfectant.

If possible, expel the placenta by Credé's method; but, if the fingers *must* enter the uterus, let the hands again be scrubbed.

Make your patient's toilet yourself; thoroughly cleansing the parts with a warm antiseptic solution. Remove all soiled linen, and instead of napkins use pads made of absorbent cotton covered with cheesecloth which has been previously washed and rinsed in a sublimate solution. These to be changed frequently, and the patient washed with an antiseptic every eight hours.

In ordinary cases I do not consider the douche necessary till the discharge begins to lessen, say, about the third day, when I direct one to be given from one to three times a day according to indications. In instrumental cases, or where there is laceration, give the antiseptic douche at once, and make all repairs with strict antiseptic precautions, the same as in the case of an ordinary wound.

Dr. G. P. Conn: Dr. Blaylock has described the conditions of an ideal case. We are not always consulted until it is too late to carry out such conditions. Whether douches should be used immediately is a matter that is being discussed: and they are not insisted upon as much as they were two years ago. Twenty-five years ago a douche was almost unheard of, and cases of puerperal fever were rare. I do not think the douche is necessary except where conditions exist in which you would use it in a surgical case for the purpose of cleanliness.

Dr. Wallace Russell: I rarely use the douche before the fifth day.

Dr. Wheeler: I never use the douche unless there is a reason for it.

Dr. Hill: It has been remarked that puerperal fever is more common among the wealthy than among the poor. Among the wealthy they are very careful to apply one or more napkins very closely which keeps backs the evictions. Among the poor they are not so particular, and nothing is retained.

Dr. Blaylock: I agree with Dr. Conn that many times we cannot have these conditions; but I think we should have a high ideal, and we can control our patients to a certain degree. I think it is not wise to use the douche until the lochia begins to get scanty, and then it is such a comfort to the patient that I ordinarily use it.

The paper was also discussed by Drs. McQuesten and Russell.

ASEPSIS AND ANTISEPSIS IN THE COUNTRY.

Dr. I. J. Prouty, of Keene: Cleanliness, not in the ordinary sense of the term, but *surgical cleanliness*, is the foundation of asepticism. If we could be sure that everything pertaining to an operation was free from germs, and the field of operation perfectly aseptic, we should have no need of the use of chemical agents as antiseptics. But as many accidental wounds are septic on account of foreign matter that has got into them at the time of the injury or afterwards by filthy dressings applied before the surgeon arrives, and as operations are often done in regions of the body that are naturally septic, as the mouth, rectum and vagina, we must resort to the use of agents that tend to prevent putrefaction. Surgical instruments sometimes carry septic matter into a wound. They can be sterilized by either dry or moist heat, the latter being the best. They should be very thoroughly scrubbed with soap and water after each operation, and just previous to the operation should be rolled up in a cloth and submitted to the action of steam in a sterilizer for an hour, or boiled in water for five or ten minutes. They should then be put into carbolic acid solution (1–20), and kept immersed during the operation. The hands of operator and assistant should be thoroughly scrubbed with soap and water, and then in a saturated solution of permanganate of potash or peroxide of hydrogen. The discoloration of the hands can be removed by a saturated solution of oxalic acid. A vessel of carbolic acid solution (1–30) should be used during the operation to dip the hands and instruments into. If the field of operation can be planned beforehand, it should be shaved and scrubbed thoroughly with soap and water and then with corrosive sublimate (1–500) or peroxide hydrogen; and then several layers of aseptic gauze which has been wet in solution of corrosive (1–2000) applied and kept in place by a roller until the time for the operation. Braided silk, for sutures and ligatures, can be boiled and then kept in alcohol. Catgut is not so reliable. It is not easy to keep sponges clean. I make them of wool covered with gauze, and after use throw them away. They should be boiled, dried, and put in glass jars, and just before operation should be again boiled or steamed. These wool sponges were devised by Dr. J. W. Elliot, of Boston.

There are many forms of dressing, but I find that what is known as the "baked dressing" is the most convenient to carry around in the country. It is corrosive gauze that contains ten per cent. of glycerine, to keep it moist and render it more absorbent. A roll of gauze is rolled up in a sheet of cotton wadding which covers it and keeps it in place. It is put into a tin can and baked in an oven heated to 250° F. The can should not be opened until the dressing is used. In laparotomies long strips of aseptic gauze are excellent to tuck into the abdominal cavity to take up the fluids. In dressings the gauze should be ten or twelve layers thick and should extend a good distance from the wound. The dressing is not cheap. It will save much expense to buy the gauze by the web and prepare it yourself, and you will have a better article.

Needles can be carried in glass ignition-tubes with cotton and a cork at the end. These can be held for a moment over an alcohol lamp to render them aseptic.

The paper contained reports of one operation for the removal of enlarged axillary gland, two amputations of thigh, one amputation of hand (which had been injured by a saw), one case of necrosis of humerus, one case of compound fracture, and the following case of laparotomy: A young woman, age twenty-four, married. Three years ago was confined, followed by puerperal septicæmia. Last March had a miscarriage, and soon after gonorrhœa. About middle of April, began to have severe pain on left side over region of ovary. Temperature 103° to 104.4°, occasional chills. Growing worse rapidly. Operation, May 18, 1892. Median incision, about four inches long. On opening through the peritoneum, found enlarged ovary and pus-tube (which was not large). Ovary about the size of small hen's egg. Removed tube and ovary. Ovary on the other side was cystic also and about the same size; tube was normal. This ovary was also removed. No hæmorrhage. Did not irrigate abdominal cavity nor introduce sponges, as there was no fluid to take up. No marked adhesions on either side. Three rows of sutures closed the wound, one through the peritoneum, another through the muscles, and the outer through the skin; the two inner rows catgut, the outer of silk. Wound was covered with baked gauze, which was not removed until the seventh day. There was a very little suppuration, which was caused by the catgut in the muscular row of sutures being septic. The patient did well. For the first two days nothing was given her except teaspoonful doses of hot water, then a little beef-tea and gruel were added. She was not put on to regular diet for three weeks. The advisability of so early an operation may be questioned; but she was rapidly changing for the worse; and, if operation was deferred, adhesions would result which would endanger the patient. The operation was done in a country hotel.

It was formerly thought that dressings must be removed every few hours. Let the wound alone; let the thermometer be your guide. If the temperature is not increased above one and a half degrees, be content to let it alone. In aseptic cases there is no need of a drainage-tube; suppuration is liable at the point where it is used. Of course, if suppuration is inevitable, it should be used.

Dr. D. S. **Adams**, of Manchester, said that in surgical operations care should be taken to leave no cavities where secretions may gather, but the parts should be made to fit closely. He did not believe that a sponge should be used any more than was absolutely necessary

The paper was also discussed by Drs. **Aldrich**, **Goodhue**, **Conn** and **Russell**.

Dr. A. N. **Smith**, of Dover, read a paper on

ANTIPYRETICS IN FEVER.

His conclusions were; that pyrexia is not so harmful to the organism as formerly believed; that high temperature may be conservative; that the modern antipyretics are most useful as analgesics, and are contraindicated in such diseases especially as typhoid fever and pneumonia; that cold applied externally is the "antipyretic *par excellence*."

Dr. J. H. **Wheeler**, of Dover: While we cannot shorten the disease itself, we should, if possible, keep the temperature within the destructive point. Of course, we should select such means as are the least harmful. If the patient becomes more quiet, sleeps, and is free from delirium under the action of these remedies, it seems to me that they may be used to advantage. I do not feel like taking my position at either extreme, either rashly crowd down the temperature nor allow a destructive temperature to continue.

Professor Frost: It seems to me that sometimes high temperature is due, to a considerable extent, to a lowered vitality; that is, the heat-producing elements probably exercise greater influence proportionately than they did before. In such cases I believe there is great danger in the use of ordinary antipyretics. I have become quite distrustful of the coal-tar products, and think they should be used with great caution.

Dr. G. P. **Conn**: I believe that the profession are relying more on external applications to reduce temperature than upon any of the coal-tar products, which are at least uncertain if not positively dangerous.

Dr. **Smith**: In my paper I presented the two extremes and the middle ground, but did not take much of a personal stand. But in the last year or two I have been getting alarmed as to the effects of these antipyretics, and in pneumonia I would not give them at all. The free administration of them to persons who had the grip two years ago injured many, especially as regards the heart.

Other papers were "Physician and Medical Societies," by Dr. D. P. **Goodhue**, Springfield; "Some Changes in Men and Methods," by Dr. L. W. **Peabody**, Henniker; "Two Common Varieties of Insanity, and the Importance of their Early Recognition by the General Practitioner," by Dr. C. P. **Bancroft**, Concord; "The Progress of Medicine in Mexico," by Dr. J. A. **Watson**, Concord; "Social Customs of the Profession and the People of Mexico and Guatemala," by Dr. **Edward French**, Concord.

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AMERICAN NEUROLOGICAL ASSOCIATION.

(Continued from No. 8, page 198.)

Eighteenth Annual Meeting, held in New York, June 22, 23 and 24, 1892, the President, Dr. C. L. **Dana**, in the Chair.

Dr. C. K. **Mills**, presented notes on two cases of

FOLIE À DEUX, WITH REMARKS ON SIMILAR TYPES OF INSANITY.

The two patients were sisters, the eldest thirty-two years of age, the other less than two years younger. The father was a hard-drinking, quarrelsome man. The first patient had been deranged from three to four years. She complained of strange feelings, as of something growing in her abdomen, of sickness of the stomach, bloody passages, chills and other unpleasant sensations. She had been troubled for a long time with strange voices. She was tormented by people, both at her work and at home, and was made to say very ridiculous things. She apparently had hallucinations of several senses. A stench of blood came up through her throat; at times she was grasped by a hand or hands. Men would appear before her; sometimes they would get on their knees and solicit her. She was full of sexual delusions with reference to men and their designs upon her. The heads of men would appear before her at her work. When she did not see them, sometimes she would feel them or hear them; often she heard their voices talking with her after midnight, saying all sorts of filthy things. The other patient's mental disturbance had come on a few weeks after her sister's. Apparently the delusions of the first had to some extent been imposed or communicated to the second. Besides having various physical symptoms, the second patient, who seemed to be weaker both mentally and physically than the other, told the most filthy stories. She said that she knew who the men were that were abusing her, knew their names. These patients had evidently become a nuisance both at their home and in the neighborhood. Some of the men they had accused had been threatened by them. They appeared to believe firmly in what they said, and yet at times to appreciate that something was wrong with their heads. They eventually went quietly and without resistance to a hospital for the insane, thinking apparently that they might be able to get their troubles straightened after they got there. They presented, as was not unusual, a blending of the characteristics of the three forms of folie à deux, that is, of the imposed insanity, the simultaneous insanity, and the communicated insanity. The influence of heredity was decided; the delusions were persecutory.

A CASE OF RAPIDLY FATAL MOTOR AND SENSORY PARALYSIS, WITH AUTOPSY SHOWING ACUTE MYELITIS MAINLY OF THE DORSAL CORD.

Dr. Mills read a paper on this subject.

The patient, a man thirty-seven years old, with an uncertain specific history, six months before coming under observation had had a large carbuncle between the shoulders. For months he had shown some tendency to drag his feet. For two weeks he had had pain and soreness nearly in the line of the right nipple, which extended later into the armpits and down the inner side of the arm. Four days before he was first seen, he had developed a severe pain across the loins. The next day he was barely able to walk, and in thirty-six hours he could not stand. Twenty-four hours later he was completely paralyzed as to motion in both lower extremities, and showed also total loss of sensation as high as the nipples. He had incontinence of urine and fæces. Knee-jerks, muscle-jerks and cutaneous reflexes were abolished. This extreme paralysis was fully developed May 31st, three days after the first symptoms of motor loss became marked. His temperature rose rapidly to 104° and 105°, with corresponding increase of pulse and respiration. He died June 7th. From May 31st to June 4th, his condition did not change much, except that the line of insensibility advanced a little higher, and ecchymotic areas appeared on the thighs. The motor paralysis, reflexes, etc., made no improvement. On June 5th, he had complained of severe pain in the upper arms, coming in paroxysms. Mucus collected in the larynx; weakness of the voice came on; the surface of the body became cold; there was some delirium, and at times a marked disposition to somnolence. From the 5th, he kept both the forearms flexed, and rested them on his abdomen and chest, the little and ring fingers being also flexed. At the autopsy the vessels of the spinal pia were markedly distended with blood. On section, the periphery of the cervical cord was of good consistence, but the centre was much softened. As the sections were made lower down, the transverse area of the softening increased, until in the dorsal region only a shell of solid tissue surrounded a creamy mass. The softening grew less again in the lumbar region. Below the right groin was a swelling, which contained broken-down glands and pus. Other organs and parts were found to be normal. Microscopical examination showed, in the dorsal region, the nervous tissue almost entirely destroyed. The blood-vessels were distended, and there were many scattered hæmorrhages. Hæmorrhages were also present in the pia and in some of the peripheral nerve roots. The upper part of the cervical region was very little affected, the lumbar much less than the dorsal. The case was unquestionably one of acute, rapidly spreading myelitis.

Dr. Sachs had seen several cases, after development, in which the acute myelitis led primarily to death. In Dr. Mills's case the analogy with acute tubercular myelitis suggested itself. He had seen three cases with such characteristics, in all of which the tubercle bacilli had been discovered in the broken-down cord. He thought he could assert, that, in cases in which there had been some chronic form of spinal cord disease before exposure to tubercular infection, the cord was very prone to break down.

Dr. Preston agreed that the case could be put down as one of hæmorrhagic myelitis, producing distinct arterial sclerosis. He had seen a case of this nature apparently due to a very limited local tuberculosis of the vertebra. The vertebra was not broken down, and the bone not decidedly involved. There were tuberculous nodules in the coverings of the cord at the point where the myelitis begun.

A CASE IN WHICH EXPLORATORY TREPHINING AND LIGATION OF THE VERTEBRAL ARTERY WERE PERFORMED; AUTOPSY SHOWED GLIOMATOSIS OF THE CEREBELLUM, PONS, AND OBLONGATA, WITH HYDROCEPHALUS AND HYDRORACHIS; OPENING IN THE SKULL FROM CONTINUED PRESSURE.

Dr. J. B. Deaver and Dr. Mills presented a paper on the above subject.

Dr. Mills regarded the case as of unusual character and probable unique. The patient was a boy eleven years of age, who had, in December, 1889, commenced to complain of pain in the head and some stiffness of the neck. Other symptoms which had developed slowly, were failing sight, spells of nausea, occasional attacks of violence or excitement, strabismus, staggering in walking (a little more to the left than the right), a feeling of dizziness described as "going over," and shortness of breath. Before the operation, double optic neuritis in an advanced stage was present. Hearing and taste were not impaired. There was no motor paralysis, nor disturbance of common sensibility. No nystagmus. Examination showed a pulsating tumor in the occipital region, slightly protruding through a small opening in the skull to the left of the occipital protuberance. A distinct thrill and bruit seemed to be present. Three scars were noted on the posterior aspect of the head, one just above and to the right of the opening.

Dr. Deaver made some remarks on the examination of the patient and upon the operation. A tremor was felt, which had seemed to him the same as that made by an aneurism of the arterio-venous type. Auscultation gave a bruit. Pressure upon the carotid arteries had lessened the pulsation and bruit. The opening in the skull was enlarged so as to examine the supposed aneurism, which appeared to be in the line of the lateral sinus; but, when this was done, the character of the swelling was too uncertain to go further. An exploring needle was introduced, the withdrawal of which caused bleeding which required long pressure to arrest. Later the left vertebral artery was ligated, but with no beneficial results. After the operation the pupil on the side corresponding to the cicatrix was contracted. The patient slowly grew weaker, and died several months after the operation. An autopsy was obtained. This revealed a gelatinous mass which had occupied much of the fourth ventricle, reaching from or into the middle lobe of the cerebellum and both cerebellar hemispheres. The ventricles of the brain and their horns were enormously dilated, and at several places at the base, rupture had almost taken place into the cranial cavity. When the spinal cord was severed from the oblongata, the central spinal canal was found to be one-sixth of an inch in diameter, and from it much fluid escaped. The chief points of interest were the reference to the diagnosis from aneurism, the mechanism of the process by which the opening in the skull resulted, and the production of the hydrocephalus and hydrorachis.

DR. P. C. KNAPP, of Boston, read a paper on

TRAUMATIC NERVOUS AFFECTIONS.

The writer held that there were various distinct affections of the nervous system due to injury, and that no one term such as rheumatic neurosis, could be applicable to all. The paper, he said, was an attempt at classification based on ninety cases, in half of which there had been no question of litigation. Pain in the back was present in fifty-six cases. In nine the trouble in the back was the chief disturbance. In the rest it was only a complication. Traumatic lumbago was not the only cause of pain in the back; true neuralgia was occasionally found; and the condition of spinal irritation was common.

Five cases was due to direct injury to the cord, producing paraplegia. In four cases there were symptoms of insidious onset referable to the cord, paresis, vesical disturbances and slight spastic condition. Here it was thought that the changes were chiefly in the lateral columns. Systemic diseases, such as tabes or spinal muscular atrophy were very rare. Thirteen cases were regarded as of more distinctly cerebral origin. Here the injury had been to the head; and the prominent symptoms were headache, vertigo, and loss of mental power. Other symptoms sometimes indicated a focal lesion, hæmorrhage, fracture or meningitis. Twelve cases were believed to have an organic basis, a diffuse sclerosis of cerebral nervous system. Four of these had terminated fatally. Four others were thought to belong to this class but they were classed as doubtful. The symptoms were pain in the head and back, loss of mental power, insomnia, muscular weakness, anæsthesia (usually of general distribution and most marked in the legs), tremor, disturbances of micturition and palpitation. In these cases the psychical element had little to do in the causation. In the functional conditions the psychical element was much more important. Twenty-six cases were classed as neurasthenia. Part of these, where the psychical factor was prominent, showed bad dreams, excitability and emotional instability. In all, spinal irritation, headache, insomnia, digestive disturbances, incapacity for protracted physical and mental effort, nervousness, hypochondria, melancholia, morning fatigue, etc., were prominent symptoms. A rapid pulse and exaggerated knee-jerk were considered of some importance. Seventeen cases were classified as hysteria, and presented some of the symptoms, notably hemianæsthesia, on which the French lay so much stress. Most of them also presented symptoms of neurasthenia. Pure hysteria was very rare. Limitation of the visual field was common in hysteria, but was rare in other affections. Both this symptom and hemianæsthesia were of importance, but they were met with only in a small percentage of the cases. The litigation cases presented no symptoms differing from those seen in the non-litigation cases, which could be considered litigation symptoms. Successful simulation was believed to be extremely rare. The prognosis depended upon the form.

DR. J. J. PUTNAM thought that neurologists had a peculiar responsibility in regard to this subject, and it was his earnest desire that the question of prognosis should be tested in every way, and as large a series of cases as possible should be accumulated and classified as to age, sex and temperament. Much more light was needed before a judgment that was fair could be given. No expert had any excuse for not knowing practically all that had been discovered on the subject. There had been a serious accident at Roslindale, and the speaker had had special opportunities of observing the worst cases among those injured. Only a very small number of these would admit that they had entirely recovered. These cases, of course, were of different kinds, but they might only be spoken of together as concerned prognosis. He had tried to account for the peculiar condition into which these patients fell. It seemed not so much the predisposition to nervous disease or the severity of the injury, as that there existed a class in the community who had been trained in self-control, and these people were less susceptible to injury and did not suffer so much. In the experience of the speaker the effects of treatment were good, after a time, in removing certain factors in the cases. He believed simulation to be of rare occurrence. Hypnotism, while likely to do harm if indiscreetly employed, was one of the edge-tools the proper use of which would give good results.

DR. WEBBER said that there was a class of patients which rarely entirely recovered, the neurasthenic symptoms being hardest to remove. He cited cases.

DR. DERCUM thought that sufficient attention had not been paid to the existence of a certain group of motor symptoms in some of these cases. There was not only weakness amounting to absolute paralysis, but a condition of motor erethism, fibrillary tremors, spasms of the back muscles, etc.

DR. JONES thought, that, if under proper care until the end of litigation on their cases, these patients would suffer very much less. Under appropriate treatment, grave symptoms were often developed. He believed the psychical effects were more pronounced than was usually believed. Even where fright was absent at the time of injury, suggestion might result in the development of serious symptoms.

DR. BRILL considered discussion on this subject futile. The opportunity for careful research was inadequate to the due appreciation of the changes which might result in organic disease. There would always be a tendency to allow the opinion of those who had presented the disease to act as a factor in the equation.

DR. DERCUM had found the symptoms in these cases to be sometimes persistent and in other instances to recur. Some of these patients in whom the shock had but been slight, recovered sufficiently to do a certain amount of work. He did not believe that the number of malingerers was very great.

DR. MILLS was also of the opinion that malingering was rare, though of course it was met with. Sufficient importance was not given to the various processes by which psychical impressions might act. It was not merely the effect of the shock to the mind and nervous system at the time of the accident, but there were local lesions, not in themselves fatal eventually, but still exciting them, there was the litigation with its excitement; so that these patients had constantly a psychical strain to the fore.

(*To be continued.*)

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BACTERIOLOGICAL CHEMISTRY.

Bacteriological chemistry is a comparatively new branch of research, and one which seems destined to revolutionize the therapeutic treatment of certain diseases. Since the attention of the profession was drawn to the fact that there was such a subject as bacteriological chemistry, in the winter of 1889–90, decided advances have been made in bacteriological investigation as to the cause of disease, and many troublesome questions in regard to its production seem in a fair way to be answered; and at the same time new measures for the cure of disease are being suggested. At the present time there is the greatest difficulty in any man, not a specialist, getting any clear idea of the work that has been, or is being done, in this subject. The first obstacle to the clear understanding of the subject is the lack of any exact nomenclature, so that any one trying to read a series of reports of experiments, is soon involved in an almost inextricable tangle. In great part this confusion is due to the fact that the investigators themselves are doubtful about the exact chemical composition of the materials that they are handling. The great instability of the compounds and the very small quantities which can be obtained for analysis, and the fact that to a certain extent each investigator wishes to prove that his methods and results are the really correct ones — all tend to make the subject as yet extremely blind. For those who may wish to gain a little knowledge of the theories upon lines which the investigators in bacteriological chemistry are carrying out their work, the following synopsis may be of use.

It has been demonstrated that all bacteria during their growth cause certain modifications in the media in which they are grown. These new products are known as ptomaines and leucomaines. The former are the products formed by the action of bacteria upon dead organized material, the latter by the action of bacteria upon living tissues. This distinction is not always maintained, and the former term, ptomaine, is often used as a general or generic name to designate the organic products of bacterial action upon organized tissue which is in a state of retrograde metamorphosis, that is, material which is being returned by the influence of bacteria to the elemental H_2O and CO_2 conditions. It is to be borne in mind that the ptomaines are not necessarily poisons. They are, however, such unstable compounds that a slight change in arrangement or number of atoms may render an inert nitrogenous base actively poisonous, and *vice versa.* All the retrograde changes which an organized body undergoes, have been demonstrated to be due to the action of bacteria, while moisture and warmth, which were formerly supposed to be causal in their action, are shown to be only favoring conditions under which the bacteria thrive which produce the putrefaction and fermentation changes.

Pathogenic bacteria may act either mechanically, the capillaries of important organs being occluded by the presence of great numbers of bacteria and the functional power of the organs destroyed, or the bacteria may have a toxic effect on the whole system, or a local poisoning effect which destroys the tissues, as in certain surgical diseases. The two forms of intoxication are the most common methods in the bacteriological diseases in man.

The bacteria may bring such pathogenic conditions about in two ways. They may have in their own bodies the substance which causes the action upon the tissues with which they come in contact. This is a proteid substance, and to distinguish from another proteid which will be spoken of later, is known as *bacterial proteid.* The bacterial proteids are analogous to the active principle of plants, as strychnia is derived from the nux vomica bean, quinine from the cinchona tree, etc. When this is not the method of the working of the bacteria, the active principle is produced by the bacteria in their growth, just as certain cells in the stomach during their growth produce pepsin, which coming in contact with certain parts of the food in the stomach, has the power of changing its character, or, as we say, digesting it. (One is justified in changing the analogy from plant life to animal life, because the bacteria are so near the point where the two are almost inseparable, that their natures partake of each.)

In whichever way the bacteria act, when the product of their growth attacks the living organism, it may simply act as a ferment — or, as it is called, an enzyme — upon the blood, causing a change in its character which renders it useless, if not poisonous to certain cells of the body. These portions begin to show pathological changes, and if the cells are of sufficient importance to the organism, other cells or dependent parts suffer, and the organism may die. This is direct intoxication, or the result of the absorption of the poison produced by the bacteria themselves. Intoxication may also be due to the modification of the media in which the bacteria grow. Here the proteids or the ferments above mentioned, may have only a local action on the tissues, but the modification of those tissues may be the formation of some mid-product of retrograde metamorphosis — a ptomaine or leucomaine, or more specifically, a toxalbumen, or poisonous albumose, alkaloid, or animal acid. If, now, this product of bacterial growth is absorbed, it acts upon the organism in an unfavorable manner, as in many mid-forms of digestion the peptones are poisonous, if they chance to be absorbed.

It has been practically demonstrated that all the pathogenic bacteria cause their distinctive action by a toxic principle, and it has been proposed to make to Koch's laws, that a given bacteria shall always be present in every case, that it shall be cultivated outside of the body, and that when the pure culture is introduced, it shall reproduce the disease in animals from which the bacteria shall be again found, in order to establish its specific action, the following additions: that the specific poison must also be extracted and be shown to be capable of producing the same disease in the absence of the bacteria.

The recognition of the importance of the toxic products of bacteria has turned bacteriological research to discover some means by which to modify the action of the bacterial poisons, rather than the destruction of the bacteria themselves. That this is a line which must be thoroughly investigated, is shown by the fact that the blood and serum of both naturally and artificially immune animals, does not necessarily have *bacteriocidal* properties, and the bacteria may even grow in their tissues and yet not produce any untoward results; making it plain that modification of the toxic products is the important factor. This leads us naturally to the subject of immunity, which includes both prophylaxis and cure.

It is at present a working theory that bacteria in their growth call forth the presence of a material which is either hostile to their own development, or acts as an antidote to the poison which they produce. This is brought about in two ways: first, by the production of the material from the media in which they are grown; and, second, by the presence of the bacteria in the tissues calling into action the wandering cells, or leucocytes which, it must be remembered, have been clearly demonstrated to be composed largely of proliferating connective-tissue cells, in accordance with the original observations of Virchow, and that only in a small degree are they white blood-corpuscles. Now the power of calling these wandering cells into action is a property particularly given to bacterial products, while it is possessed by bacteria themselves no more than other substances; and this power of producing an inflammatory reaction in tissues is called the chemotactic power of bacteria. Metschinekoff and his followers, while allowing this action to the bacteria, say that the chemical process stops here, the cells then devour and destroy the bacteria, and that this phagocytic action accounts for the recovery of the diseased animal. On the other hand, the German school, while they allow that the cells may and do exert a phagocytic action, if the bacteria themselves are present, yet as proliferation of the connective tissue-cells can be brought about by the action of the chemical bacterial products alone, if repair and restoration, or cure, takes place, they argue that the process is due to an antidotal material, — or, as it is called, the protective proteid, alexine or antitoxine, — which may be the product of these cells. But however it may be formed, the theory is, that with each bacterial infection there is a corresponding antidote formed, which, if present in sufficient quantities, leads to recovery; if not, death of the part, or of the whole organism is the result. If recovery takes place, it has been observed that from that time on, the patient is not, as a general thing, susceptible to future attacks of the same disease. And further, that light attacks of certain diseases render the patient just as immune as severe. Early in the study of bacteriology it was observed that certain changes in the conditions under which bacteria grew, as for example, subjecting them to a much higher temperature, growing them under pressure or in the presence of oxygen, or passing them through another animal, — modified their virulence. Putting these two facts together in the light of what was known about vaccination against small-pox, it was proposed to protect by the introduction of the attenuated bacteria, or by true vaccination, any susceptible organism from a severe attack of disease. And this was successful in hen cholera, anthrax in cattle and swine plague, in the same way in which vaccination against small-pox has been successful. Next, it was found that when the chemical poison of the bacteria was extracted, that chemical vaccination was just as effective as when the living attenuated virus was introduced.

Vaccination is, however, at best, a prophylactic measure, except in such cases where the period of incubation is long. Here it is sometimes possible, by a process best described by the word *acclimatization*, to make the organism resistant by the use of rapidly increasing doses of the poison, so that at least the animal is able to resist the most virulent of virus. But, on the whole, vaccination is in no sense curative. An active therapeutic measure is what is greatly desired in many cases, and it seems as if though bacteriological chemistry were going to solve the problem in the near future. For a long time it has been known that some animals are especially susceptible to a given disease infection, while others never had the disease, or only had it when the specific bacteria of that disease were introduced in such large quantities as to make accidental infection practically impossible. When investigations showed that the diseases were produced by the toxic action of the bacteria, and that there was an antidote present for each toxine, and the possibility that these protective proteids were produced by cell activity and were then present in the blood, the deduction followed that the naturally immune animals and those made artifically so by vaccination, probably had those chemical substances naturally present in the blood and developed there by the action of the vaccine; and if it is there, then the serum of these immune animals will infuse directly the desired curative material to the blood. If the nature of these protective proteids can be determined and they can be extracted from the blood, then they can be administered directly to the diseased organism and the cause of the disease neutralized. It seems probable that for certain diseases, this, which seems like an empty dream, is about to be, if not already realized. The best and most effective work so far done has been done by Behring and Kitasato on tetanus. Here not only have they been able to render animals immune and to check the course of the disease when it was already well under way, but successful application of the resistant animal blood-serum therapy has been made in a number of cases where human life has been involved.

The reader will, of course, distinctly understand that the above is simply a sketch of the broadest general lines, and is not intended in any way to explain any of the perplexing and contradictory facts which have been brought to light during the investigations upon this difficult subject. If, however, the reader has been able to get an idea of the general theory upon which the most satisfactory work is now being done, he will, in all probability, be able to follow with a clearer understanding the reports of the work in the special diseases, as tetanus, diphtheria, pneumonia, etc., which will appear in the Journal from time to time.

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SHALL THERE BE A FOUR YEARS' COURSE?

An editorial under this heading, in the *Medical News* of July 30th, questions the desirability of encouraging a compulsory four years' course of medical study, as recently adopted at Harvard, the Woman's Medical College of Pennsylvania and at the University of Pennsylvania.

The writer claims that the present college term occupies but six months of each year and that much time is now wasted in teaching subjects which should be required for admission, especially chemistry and physics. He makes the sweeping statement that "in no medical college in the United States is there even a pretence of a proper teaching of these fundamental sciences, or a proper entrance qualification therein demanded." This charge is specific despite the writer was "dealing with a general question and cited special schools but by way of illustration, not with any view to special criticism." [1]

If such were the case, it would indeed be well to correct these conditions before undertaking a compulsory four years' course, but we must assume that the writer is ignorant of what is, and has been taking place at the Harvard Medical School, and we can easily believe that his statements misrepresent the actual condition of medical education in other leading schools of the country.

Twenty-one years ago the Harvard Medical School established a graded course, extending over three years, each of more than eight months of study.

Many of its students, college-graduates, possess a considerable knowledge of chemistry and physics at the date of their admission.

All who do not hold a literary or scientific degree are required to pass an examination in the elements of physics, among other requirements for admission, and all, with or without degrees, who do not possess a considerable knowledge of chemistry on admission, have been given an elaborate course in this subject early in their medical study. The nature and thoroughness of the courses in chemistry may be inferred by an inspection of any of the examination papers, copies of which are printed in the annual catalogues.

Despite increasing qualifications for admission demanding better preparatory training, terms of more than eight months each and a third year largely devoted to clinical work, it has become advisable after these twenty-one years of experience not only to relegate the teaching of general chemistry to the preparatory schools but to add another year to the course of medical study.

This has become necessary, not as a preparatory year but as a final year. The constantly increasing sum of medical knowledge, not of details but of essentials, demand it from the thoroughly educated physician. He needs his three-months' vacation, but if his strength equals his enthusiasm, the summer school offers abundant teaching in the hospitals, dispensaries and laboratories.

The honest and earnest student in the four-years' course will have no time in which to be idle, and a lack of honesty and earnestness is early found out in the graded course of study. The better his preliminary training the more will he profit from his medical studies. Reform is needed, not only at the foundation but throughout the structure up to the very roof, even to its ridgepole.

◆

MEDICAL NOTES.

Cholera. — The epidemic of cholera in Europe has assumed alarming proportions during the past week. In Hamburg from 200 to 500 cases a day have been reported, of which about forty per cent. died. This city has suffered much more than any other city of Western Europe. In Havre the number of cases has been from 25 to 75 a day, and in Antwerp, Amsterdam, Bremen and Berlin, a few cases have occurred. It is doubtful whether some patients with choleraic symptoms which have been admitted to the Paris hospitals during the past week were suffering from Asiatic cholera or from the disease which has been present there during the whole summer. A few cases have occurred in England in seaport towns, mostly immigrants. Although but few cases are reported, they have been in different districts, as in Gravesend, Swansea, Glasgow and Dundee, and one or two in London. In Russia, during the past week, the total number of cases reported has been about the same as before, but the number of districts attacked is larger. The principal factor in the distribution of the epidemic appears to be the emigration of Russian Jews.

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[1] Medical News, August 27th.

The United States Marine-Hospital Service, and the State and local Boards of Health, are taking active measures to prevent the disease from being imported. Although there is no law by which immigration can be stopped, still our quarantine and public health laws allow the different authorities to take vigorous measures to protect the community. An order has been issued for the port of New York that all vessels from cholera-infected ports, or carrying steerage passengers from infected localities, will be subject to quarantine detention of from two to five days for disinfection and observation. Similar orders are in force for other ports, and already several steamers have been detained and disinfected, although no case of cholera has yet been found.

Rheumatism in Japan. — It is a strange fact mentioned by Dr. Michaut, of Yokohama, that in spite of its being an essentially moist and rainy country rheumatism in all its forms is a pathological rarity among the natives of Japan, while the Europeans residing there are almost all rheumatic. This immunity the writer is inclined to attribute to the use of very hot baths which is universal in Japan. The temperature of the Japanese bath is never less than 42° C., and he has been assured that they can endure a bath at the temperature of 50° C. A Japanese bathes once, sometimes twice a day. His skin is more active than that of Europeans, is thicker and much less sensitive to cold and to external irritations.

◆

Miscellany.

DIPHTHERIA AND ALLIED PSEUDO-MEMBRANOUS INFLAMMATIONS.

Dr. W. H. Park,[1] after reviewing the work which has been done on this subject since the discovery of the Klebs-Lœffler bacillus in 1883, reports 159 observations made by himself. In 54 of these cases the Lœffler bacilli were found, that is, they proved to be true diphtheria. In six cases of membranous rhinitis, all of which ran a benign course, quite numerous colonies of this bacillus were found. There was no history of infection in any case and the colonies grew rather feebly in culture media.

It would seem that cultures made from a previously sterilized cotton swab or from a bit of membrane can be thoroughly relied on to show the presence or absence of the Lœffler bacilli as soon as the pseudomembrane is developed. Swabs from the pharynx, where no membrane was visible, gave knowledge of the bacteria infecting the larynx. The danger of carrying the infection to others in the clothing was shown, apart from clinical facts, by the discovery, in every case, of colonies of the Lœffler bacillus in cultures made from dried stains on bed linen, etc., from the sputum of diphtheritic patients.

In cases of diphtheria where the bacilli alone were present the temperature never rose above 100° F. In those in which streptococci were abundant some had a high, others a low temperature. Marked swelling of the cervical glands was found only where other bacteria than the Lœffler bacilli were present.

Of pseudo-membranous inflammations involving the tonsils, soft palate and pharynx, in which the Klebs-Lœffler bacillus was never present, but instead, almost pure cultures of streptococci, 31 cases are reported, 14 uncomplicated, none fatal, and 17 complicating scarlet fever. There were 16 cases of pseudo-membranous laryngitis (Lœffler bacillus absent) in only two of which was any connection with scarlet fever or measles discovered. Five of these cases died, broncho-pneumonia being the most frequent cause. The good percentage of recoveries, $66\frac{2}{3}$ per cent., in these cases as compared with 30 per cent. in laryngeal diphtheria should be noted. There were 58 cases of pseudo-membrane, caused by streptococci and confined to the tonsils. Staphylococci were often entirely absent, at other times present in moderate numbers, but never in excess of the streptococci. The tonsils were the parts most frequently involved in both diphtheria and pseudo-diphtheria. The mortality in true diphtheria was $46\frac{1}{2}$ per cent., in pseudo-diphtheria $5\frac{2}{3}$ per cent.

The paper closes with valuable suggestions as to the importance of bacteriological examinations in these cases, how they can be best carried out, and the advisability of having in hospitals, where diphtheria is received, a separate ward for doubtful cases before the diagnosis is made certain by bacteriological examination.

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TREATMENT OF ENTERIC FEVER WITH CALOMEL.

At the one hundredth annual meeting of the Connecticut Medical Society, Dr. Gustavus Eliot, of New Haven, read a paper on this subject.[1] Flint in 1880 wrote: "It is not an unreasonable expectation that an antidote or a parasiticide, as effective in typhus and typhoid fever as quinine in malarial fever, may hereafter be discovered, and such a discovery is a proper aim for continued experimental observations."

Dr. Eliot has employed calomel in connection with tincture of iodine and carbolic acid; a method described by Dr. James C. Wilson, of Philadelphia, in January, 1883. Eliot orders ten grains of calomel every other day until four doses have been taken; and of a mixture containing one drachm of carbolic acid, enough tincture of iodine to make four drachms, he gives to adults four drops in a wine-glass of cold water every four hours.

At first he gave smaller doses of calomel, but experience led him to believe that ten grains was a safe dose and not larger than was usually necessary. In case the bowels do not move well after the calomel he employs drachm doses of sulphate of magnesia in a little water every four hours till a good result is obtained. Rarely there is slight salivation; for this he orders chlorate of potash.

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[1] Medical Record, July 30th and August 6th.

[1] New York Medical Journal, August 6th.

The author then states the limitations to the utility of this treatment: — First, the treatment must be early. Many do not try this till all other methods have failed and the patient is nearly dying. Others do not make the diagnosis quickly enough. Eliot believes that "with a reasonable amount of care, it is just as easy to make the diagnosis of typhoid fever the first time the patient is seen, as it is to make the diagnosis of pneumonia at the first visit." In doubtful cases it is better to put the patient "at once in bed, give him only milk for nourishment, and then, if you like, try the specific treatment." The author's treatment is begun too late in some cases, because the physician does not see them early in the disease. This he considers the reason why it is not more satisfactory in the hospitals. This method sometimes fails because it is abandoned too soon. In exceptional cases vomiting prevents the medicine from being retained long enough to do good.

The author has employed the treatment since 1884, all of his cases being in private practice. He has been convinced that treatment by quinine and hydrochloric or by salol is not satisfactory; turpentine and alcohol are of little value in mild cases, though very useful in the severe forms.

He concludes that "clinical experience has already demonstrated that the course of enteric fever may be abbreviated, the intensity of the fever lessened, and the severity of the general symptoms very much ameliorated, by the systematic use of calomel in connection with the tincture of iodine and carbolic acid."

◆

INOCULATION AGAINST CHOLERA.

Haffkine,[1] having found by recent experiments that anti-cholera vaccine prepared after Pfeiffer's methods, had the same action on various sorts of animals, ventured to try the inoculation himself. He injected subcutaneously in his left side a larger dose than that used in animals, of the so-called first kind of anti-cholera vaccine. The indisposition which followed lasted twenty-four hours, and consisted of a rise of temperature of 1° C., with headache, dryness of the mouth and clouding of the urine, with no disturbance of the digestive tract. Locally, there was pain, slight swelling and glandular enlargement. The pain lasted five days. The swelling gradually diminished and disappeared on the ninth day. Six days after the first inoculation, Haffkine had the other side inoculated with the strengthened cholera virus (vaccine No. 2). Again there was a rise of temperature and local pain but no swelling. The general condition was normal in twenty-eight hours, and the pain disappeared in three days. There were no digestive disturbances. The inoculation was tried in three other persons with similar results. In one of these cases a slight diarrhœa which had lasted for several days, stopped the day after the first injection. The inoculation of both kinds of anti-cholera vaccine, the protective power of which in animals has been experimentally proved, is harmless to men, and Haffkine entertains the hope that six days after inoculation with this vaccine, the human organism will have obtained complete immunity against every cholera infection.

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[1] Münch. Med. Woch., August 9th.

THERAPEUTIC NOTES.

The Action of Phenocol Hydrochlorate.[1] — Dr. Rudolph Bum obtained the following results from the use of this drug in wafers in the dose of 0.5–0.7–1.0 gramme and in the daily amount of 5.0 grammes. Even in small doses it is a powerful, almost sure antipyretic in phthisis. In case of great weakness and in the last stages of the disease the drug should not be used. It has a slighter and much less constant action in erysipelas even when given in large doses. It has only a slight antipyretic action in rheumatism, and does not affect the disease. In migraine it acts well in doses of 0.5 gramme, but has no effect in myelitis or sciatica. Unpleasant effects on the digestive tract occurred in only a few cases.

Therapeutic Application of Diuretin in Childhood.[1] — Dr. Demme has given this substance to eleven children suffering from various forms of dropsy. He finds diuretin applicable in childhood from the end of the first year, a valuable diuretic and free from injurious action. The diuretic effect appears to be due to its action on the epithelium of the kidneys. The at times excessive dropsy of scarlet fever nephritis appears, after the expiration of the first acute stage of the nephritis, to be more quickly overcome by diuretin than by any other treatment. Dropsy from mitral insufficiency can generally, after compensation of the latter by digitalis, be quickly cured. The daily dose for a child two to five years old is 0.5–1.5 grammes, from six to ten, 1.5–3.0 grammes of diuretin best taken in 100 grammes of water with the addition of ten drops of cognac and 2.5 grammes of sugar. No cumulative action has been observed nor weakening of the therapeutic effect after several weeks' use.

Salol in Cholera.[2] — The treatment for cholera proposed by Dr. Lœwenthal (first dose of two grammes followed by hourly or half-hourly doses of one-half to one gramme of salol[3]), after experimenting with it in the laboratory and on animals, has been used on human beings with remarkable results. Dr. Gonzales, of Salvador, has used this treatment in 53 cases of cholera in one of the Philippine Islands with only three deaths (and these were already in the last stages of the disease when they came to treatment). The mortality under other modes of treatment is about 45 per cent.

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[1] Deutsche Medizinal Zeitung, August 8, 1892.

[2] Deutsche Med. Woch., August 11, 1892.

[3] Ibid., 1889, Nos. 25 and 26.

METEOROLOGICAL RECORD,

For the week ending August 20, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...14	29.95	70	76	64	77	65	71	S.	W.	6	8	F.	C.	
M..15	30.01	71	81	63	64	65	66	N.W.	N.	8	4	C.	C.	
T..16	30.11	72	83	62	62	57	60	N.W.	W.	12	5	C.	C.	
W .17	30.11	76	87	66	73	61	64	W.	S.W.	7	9	F.	C.	
T ..18	30.13	78	88	67	75	80	78	W.	S.W.	9	12	F.	C.	
F ..19	30.09	78	84	70	82	70	76	S.W.	S.	7	10	O.	C.	
S..20	29.98	78	71	66	66	90	78	N.E.	N.	8	9	O.	O.	
☞	30.04	75	81	65	71	70	70			8	8			

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 20, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	789	369	24.31	11.05	17.29	2.34	1.30
Chicago . . .	1,250,000	498	277	15.00	5.40	2.00	2.60	7.80
Philadelphia .	1,092,168	413	182	21.12	12.00	16.08	1.68	1.20
Brooklyn . .	955,333	366	207	26.73	8.91	20.25	2.70	.54
St. Louis . . .	477,873	160	73	23.31	8.82	18 90	.63	—
Boston . . .	469,645	233	116	33.11	9.03	24.94	4.73	.92
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	82	39	18.30	12.20	12.20	4.88	—
Cleveland . .	281,353	127	74	40.29	5.53	30.81	3.95	3.95
Pittsburg . .	255,000	113	62	25.38	8.90	35.60	3.56	3.56
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	106	47	25.38	11.28	14.10	1.88	3.66
Nashville . .	87,754	30	11	16.66	10.00	10.00	—	—
Charleston . .	56,048	45	20	20.00	13.33	13.33	—	2.22
Portland . . .	40,000	15	4	26.66	13.33	26.66	—	—
Worcester . .	92,313	40	20	57.50	7.50	52.50	—	2.50
Lowell . . .	82,455	56	31	30.43	10.74	28.64	—	—
Fall River . .	82,128	46	19	34.72	6.51	30.38	—	4.34
Cambridge . .	74,644	28	14	25.00	7.14	25.00	—	—
Lynn	60,809	24	14	53.92	—	41.60	8.32	—
Springfield . .	47,052	22	6	27.30	9.10	18.20	—	9.10
Lawrence . .	45,910	31	17	32.25	25.84	25.84	3.23	—
New Bedford .	44,947	23	13	21.75	13.05	21.75	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Salem	31,495	15	8	26.66	—	26.66	—	—
Haverhill . .	30,065	8	3	50.00	—	50 00	—	—
Chelsea . . .	29,479	16	6	6.25	6.25	6.25	—	—
Fitchburg . .	27,444	14	12	78.56	—	78.56	—	—
Gloucester . .	26,805	7	2	28.56	—	28.56	—	—
Malden . . .	26,783	8	3	25.00	—	25.00	—	—
Newton . . .	26,498	8	3	12.50	25.00	12.50	—	—
Brockton . .	26,464	7	3	42.84	14.28	42.84	—	—
Taunton . . .	26,464	11	7	27.27	18.18	27.27	—	—
Waltham . .	20,942	5	1	20.00	—	20.00	—	—
Pittsfield . .	18,294	5	5	—	40.00	—	—	—
Quincy . . .	17,930	2	1	—	—	—	—	—
Northampton .	15,684	9	4	33.33	—	22.22	—	11.11
Everett . . .	14,745	7	3	42.84	14.28	28.56	—	—
Newburyport .	14,031	2	2	50.00	—	50.00	—	—
Amesbury . .	13,561	7	0	28.56	14.28	28.56	—	—

Deaths reported 3,296: under five years of age 1,687; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 875, consumption 320, acute lung diseases 196, diarrhœal diseases 617, diphtheria and croup 78, typhoid fever 80, whooping-cough 42, scarlet fever 15, malarial fever 14, measles 12, cerebro-spinal meningitis 11, small-pox 4, erysipelas 2.

From whooping-cough New York 14, Chicago 8, Philadelphia and Brooklyn 7 each, St. Louis and Pittsburgh 2 each, Washington and Lowell 1 each. From scarlet fever Boston 4, St. Louis 3, New York and Chicago 2 each, Brooklyn, Pittsburgh, Washington and Lawrence 1 each. From malarial fever New York 6, Brooklyn, Nashville and Charleston 2 each, Philadelphia and Cleveland 1 each. From measles New York 6, Chicago 2, Philadelphia, Brooklyn, Cincinnati and Washington 1 each. From cerebro-spinal meningitis Washington 3, New York 2, Chicago, Brooklyn, St. Louis, Cleveland, Worcester and Everett 1 each. From small-pox New York 4

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending August 13th, the death-rate was 18.0. Deaths reported 3,517: acute diseases of the respiratory organs (London) 174, diarrhœa 364, measles 121, whooping-cough 62, scarlet fever 52, diphtheria 45, fever 35, small-pox (Halifax and Sheffield 1 each) 2.

The death-rates ranged from 12.5 in Wolverhampton to 24.2 in Burnley; Birmingham 18.5, Bradford 18.3, Croydon 14.7, Gateshead 15.3, Huddersfield 14.0, Hull 15.3, Leeds 16.2, Leicester 18.0, Liverpool 23.2, London 17.4, Manchester 22.8, Newcastle-on-Tyne 17.4, Nottingham 15 3, Sheffield 20.3, West Ham 15.4.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE THREE MONTHS ENDING AUGUST 20, 1892.

Bailhache, P. H., surgeon. Granted leave of absence for fourteen days. May 25, 1892.

Purviance, George, surgeon. Granted leave of absence for seven days. August 9, 1892.

Vancant, John, surgeon. Granted leave of absence for thirty days. August 13, 1892.

Austin, H. W., surgeon. Granted leave of absence for thirty days. June 21, 1892.

Stoner, G. W., surgeon. To proceed to Port Huron, Sault Ste. Marie, Saginaw, Marquette, Mich., Duluth, Minn., and Superior, Wis., as inspector. July 11, 1892.

Mead, F. W., surgeon. Granted leave of absence for thirty days. August 3, 1892.

Carter, H. R., surgeon. To proceed to Chicago, Ill., as inspector unserviceable property. August 16, 1892.

Wasdin, Eugene, passed assistant surgeon. Granted leave of absence for twenty-eight days. July 2, 1892.

White, J. H., passed assistant surgeon. Granted leave of absence for thirty days. August 13, 1892.

Carrington, P. M., passed assistant surgeon. Granted leave of absence for twenty-seven days. August 13, 1892.

McIntosh, W. B., passed assistant surgeon. Granted leave of absence for thirty days. July 8, 1892.

Magruder, G. M., passed assistant surgeon. Granted leave of absence for seven days. August 18, 1892.

Woodward, R. M., passed assistant surgeon. Granted leave of absence for twenty-five days. August 1, 1892.

Stoner, J. B., passed assistant surgeon. Granted leave of absence for twenty-six days. August 13, 1892.

Condict, A. W., assistant surgeon. Granted leave of absence for twenty-six days. July 21, 1892.

Hussey, S. H., assistant surgeon. To proceed to Galveston, Texas, for temporary duty. August 11, 1892.

Wertenbaker, C. P., assistant surgeon. To proceed to Pittsburgh, Pa., for temporary duty. August 9, 1892.

Perry, J. C., assistant surgeon. To proceed to Charleston, S. C., for temporary duty. July 19, 1892.

Smith, A. C., assistant surgeon. Granted leave of absence for twenty-eight days. August 13, 1892.

Rosenau, M. J., assistant surgeon. To proceed to Cairo, Ill., for temporary duty. July 27, 1892.

Cofer, L. E., assistant surgeon. To proceed to Norfolk, Va., for temporary duty. June 10, 1892. Granted leave of absence for twenty-three days. August 6, 1892.

Eager, J. M., assistant surgeon. To proceed to Evansville, Ind., for temporary duty. August 11, 1892.

Nydegger, J. A., assistant surgeon. Assigned to temporary duty at Baltimore, Md. July 6, 1892.

Stewart, W. J. S., assistant surgeon. To proceed to New York, N. Y., for temporary duty. July 6, 1892. To proceed to Wilmington, N. C., for temporary duty. July 19, 1892. To proceed to Savannah, Ga., for temporary duty. August 9, 1892.

PROMOTIONS.

Stoner, J. B. Commissioned as passed assistant surgeon. June 30, 1892.

Guiteras, G. M. Commissioned as passed assistant surgeon. July 27, 1892.

APPOINTMENTS.

Nydegger, James A., M.D., of Maryland. Commissioned as assistant surgeon. July 1, 1892.

Stewart, William, J. S., M.D., of Pennsylvania. Commissioned as assistant surgeon. June 30, 1892.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 27, 1892.

C. W. Rush, passed assistant surgeon, from special duty in connection with the Intercontinental Railway Commission, and to the Navy Yard, New York.

BOOKS AND PAMPHLETS RECEIVED.

Habitual Abortion. By E. S. McKee, M.D., Cincinnati, O. Reprint. 1892.

Addresses Delivered at the Opening of the Cincinnati Hospital Medical Library, May 11, 1892.

Fifty-second Annual Announcement of the Missouri Medical College, Session 1892–93, and Catalogue of Session 1891–92.

A Review of Twenty-five Consecutive Cases of Abdominal Section. By Reuben Peterson, M.D., Grand Rapids, Mich. Reprint. 1892.

A Valuable Experiment Bearing upon Sympathetic Ophthalmia, with a Critical Review of the Subject. By Robert L. Randolph, M.D. Reprint. 1892.

Life and Reminiscences of a Nineteenth Century Gladiator. By John L. Sullivan, champion of the world, with reports of physical examinations and measurements, illustrated by full-page, half-tone plates, and by anthropometrical chart, by Dr. Dudley A. Sargent. Boston: James A. Hearn & Co. 1892.

Original Articles.

THE TREATMENT OF COMPOUND FRACTURES BY MODERN METHODS.[1]

BY HERBERT L. BURRELL, M.D., AND EDWIN W. DWIGHT, M.D., OF BOSTON.

During the past few years the treatment of compound fractures has undergone radical changes and marked improvement. In this paper we shall confine ourselves to a consideration of the treatment of fractures of the thigh, leg, arm and fore-arm. The improvement in the results has been brought about by two causes.

(1) Thorough exploration and cleansing of the wound, and antisepsis.

(2) By the recognition of the importance of the physiological principle of complete rest to a fractured bone.

It is of passing interest to consider what results were obtained in the treatment of compound fractures by the older methods. In Guy's Hospital from 1841 to 1861, twenty years, there was a mortality of about 28 per cent.; in the Pennsylvania Hospital from 1839 to 1851, twelve years, there was a mortality of 44 per cent.; in the New York Hospital during a similar period there was a mortality of 48 per cent.; in the Obuchow Hospital Report of St. Petersburg there was a mortality of 68 per cent.[2]

Under modern methods Dennis reports one thousand cases of compound fractures, and after removing from consideration such cases as he feels justified in eliminating, he has remaining 681 cases of compound fractures, with one death from sepsis, giving a death rate of one-seventh of one per cent.

In the mortality there has been such a noticeable decrease that it demands careful attention. It will be of interest to consider the subject of compound fractures from the following standpoints:

(1) The class of case that can be saved with a useful leg, and the class of case that requires amputation.

(2) The detail of "putting up" a compound fracture.

(3) The management of a compound fracture.

(4) The prognosis.

(1) *The class of cases that can be saved with a useful leg, and the class of cases that require amputation.*

A primary amputation for a compound fracture at the Boston City Hospital is extremely rare; a few years ago it was common. Limbs which would formerly have been unhesitatingly removed are now saved. To define percisely what should govern one in the amputation of a leg is extremely difficult; but we take into consideration the following factors:

a. The age of the patient. Old age by no means indicates amputation.

b. The physical condition of the patient in regard to alcoholism, renal trouble, etc.

c. The patient's environment.

d. The attention that he will receive in the after-treatment of his case.

e. The facilities for "putting up" his leg antiseptically and in plaster.

f. The condition of the soft parts, bones, arteries, veins and nerves.

Extremely extensive crushing of the soft parts in a young person does not mean that amputation is necessary; obliteration of the main vessel or vessels in a limb demands amputation. It must be remembered that frequently swelling prevents the surgeon from feeling the pulsation in the anterior and posterior tibial arteries, and it is only when they are known to be obliterated that amputation is resorted to. In short, we try to save everything, and resort to a secondary amputation if necessary. One's personal judgment must be applied in each case in deciding what to do. Given an old man in very feeble health, with extensive crushing of the soft parts and great destruction of the bone, even if the vessels pulsate, it might be more judicious to amputate than to attempt to save the limb. Yet a man aged seventy-five, with a compound comminuted fracture, without extensive crushing of his limb, had both life and limb saved.

(2) *Details of "putting up" a compound fracture:*

In the first place, let us say that as much care is taken in the treatment of compound fractures with small openings as in cases where there is extensive crushing of the soft parts; and in several instances where this principle has been disregarded, and the small opening sealed up without properly exploring and cleansing the wound, unsatisfactory results have occurred.

We can divide compound fractures into three classes so far as the detail of "putting up" is concerned.

(1) Where there has been simply a puncture of the skin by a protruding fragment of bone, or a clean incised wound down to the bone.

(2) Where there is associated with a compound fracture a protrusion of the fragments; considerable destruction of the soft parts; and contamination by dirt.

(3) Where the injury is so severe that it is a question whether to amputate or not.

In all these cases the following preparations should be made: A large bucket of hot corrosive sublimate, 1-2000, is made up; a fountain syringe is filled and hung up; beneath the limb is placed a folded rubber sheet which leads into a bucket beneath the table or bed; and the following clean instruments are sterilized: a knife, a pair of scissors, a few artery pressure forceps, a curette, a probe, a pair of anatomical forceps, a small pair of bone forceps, and a strong pair of forceps to detach any loose fragments of bone. Sterilized silk, catgut, and needles should be at hand. In all compound fractures we prefer to anæsthetize the patient, that the cleansing may be complete.

Where there has been simply a puncture of the skin by a protruding fragment, or a clean incised wound down to the bone, the limb should be cleansed with soap and water and shaved, and after washing with ether to remove any fatty substances, surrounded with sterilized towels saturated with a 1-2000 solution of corrosive sublimate to prevent contamination from surrounding objects. The wound should then be douched with corrosive sublimate solution, and the fracture reduced. If there is any dirt on the edges of the wound, or they are crushed, the dirt or the skin about the opening should be removed. The wound may then be sutured and dressed, and the fracture is practically a simple one.

When however, there is protrusion of the bones or contamination of the wound by dirt, the patient should always be etherized, and the wound washed, shaved, and cleansed vigorously. We lay open all cavities and freely expose any pockets that may exist; remove all completely detached fragments of bone, unless they are very large or adherent to the periosteum, when we allow them to stay in position; snip off any devitalized tissue; replace the bones in position; and suture the overlying soft parts without drainage. It is very exceptional at the present time to use drainage tubes. Our statistics of cases treated with tubes show that both the immediate and ultimate results are not as good as when the cases are treated antiseptically with plaster. This statistical difference is not due to the severity of cases treated with tubes, for many of them were not severe cases. It has seemed that the difference was due to the necessity of removing the tubes early, and the consequent disturbances of the fracture.

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[1] Read before the Massachusetts Medical Society, June 8, 1892, and recommended for publication by the Society.

[2] These statistics are quoted from Dennis's paper on the treatment of compound fractures of one thousand cases. Medical News, April 19, 1890, p. 416, ? and his analysis of 516 compound fractures, Medical News, November 13, 1886, p. 533.

The dressing in all these fractures is baked gauze, the inner layers of which are saturated with a 1–2000 solution of corrosive sublimate; then a light, circular, plaster-of-Paris bandage is applied in a manner which will be described later.

Where there is difficulty in maintaining the position of the fragments of bone, in a number of instances we have divided the tendo-Achillis with great benefit. This simple procedure allows a backward or a lateral displacement to be easily overcome.

Where the fracture is so severe that amputation may be necessary, the same care is taken in "putting up" the fracture, but a fixed dressing of plaster-of-Paris is not always used. Dr. W. P. Bolles's fracture-box, Smith's anterior splint, or a pillow adjusted to the limb with side-splints, may be used until the fate of the limb is determined.

Compound fractures, after the application of the antiseptic dressing, have been put in plaster-of-Paris or immobilized by some other means. At present the drift of work is towards the almost exclusive use of plaster-of-Paris as a fixation dressing.

Within the past few years the application of plaster-of-Paris bandages has greatly improved. The objections to the use of plaster-of-Paris formerly were, its thickness and weight, the slowness of its "setting," and the difficulty of its removal. All these difficulties have been largely overcome. We now use bandages of washed crinoline. Washing removes the sizing from the crinoline, which would hinder the "setting" of the plaster-of-Paris. They are five yards in length and four or five inches in width, and are rolled evenly and should be made up with fresh plaster.

Plaster-of-Paris bandages, unless they are freshly rolled, rapidly deteriorate by the absorption of moisture. To overcome this difficulty, and to render its use more feasible for the general practitioner, we have taken long circular tin cans of the following dimensions: three and a quarter inches in diameter, and nine and a half inches in length. Into one of these tin cans can be packed a sufficient number of plaster-of-Paris bandages for the "putting-up" of a compound fracture of the leg. In the can, besides the plaster-of-Paris bandages, should be placed a quantity of loose plaster-of-Paris, and three strips of tin nine inches long and a half inch wide, which can be used for re-enforcing the plaster if necessary. A quantity of these cans may be prepared at one time by the practitioner, the covers sealed on by paraffine, which renders them impervious to moisture, and the cans may be wound with sheet wadding, which will serve to act as a protectant to the limb. The whole may then be enclosed in paper and tied up, and can be put on the practitioner's shelves in his office, and will always be ready for emergency use. One of these cans can be unsealed, and the plaster-of-Paris bandage immersed in warm water without salt. We have found that salt renders the plaster brittle, and does not materially hasten its "setting."

If we use washed crinoline bandages, the bandage is then applied over the sheet wadding which has been wrapped about the leg. In case it is difficult to hold the upper fragment in its proper position, the plaster bandage is put on below and above the fracture, and then the two are joined, while the surgeon's thumb holds the fragment in position until the plaster sets. In all cases where the fracture of the leg is above the junction of the lower and middle third of the limb, the plaster should be extended to and above the knee, in order to immobilize the gastrocnemius. Usually, after "putting up" a compound fracture in the foregoing manner, if there is any pain within the first twenty-four hours, we swing the leg by means of a Smith's anterior splint, or some similar device. Swinging fractures after "putting them up" in plaster-of-Paris, relieves the pain, and saves the administration of morphia.

(3) *The management of a compound fracture;*

In applying the primary dressing the practitioner should exercise as great care as if the ultimate fate of the limb depended solely on the dressing, and this was the case in many instances three years ago. At that time fractures were put in plaster-of-Paris, and at the end of a month or six weeks the plaster was removed, and union by first intention, without a drop of pus and perfect results in the union of bone, was the rule. But exceptionally, on removing the plaster-of-Paris bandage, a limb bathed in pus, or an extensive slough, or a crooked limb, was discovered. This has led us personally to be more cautious, and the rule which we have adopted in reference to changing the plaster-of-Paris bandage is somewhat as follows: That unless the surgeon is absolutely sure that the fragments are in perfect position, not over two weeks should elapse without changing the plaster-of-Paris dressing; and that even if he is perfectly sure, it is best at the end of a fortnight to change the plaster and renew the dressing; for very exceptionally he will find a collection of pus without there having been a rise in temperature, a slough (aseptic) without external evidence, and worst of all, a bowing backwards of the tibia and fibula, which, when united, is with great difficulty overcome.

The rule which we have pursued is to change the plaster on the seventh day; and to change the plaster again at the end of the fifteenth or seventeenth day when union in the bone is beginning; and at this time we put on a plaster-of-Paris bandage which will remain until the bone is completely united. This may seem laborious. It would have been so with a plaster-of-Paris bandage as they were formerly applied; but it is not so with light circular plasters which can be divided easily and quickly in the median line in front by the method proposed by Dr. Goldthwaite, which is as follows:

A sharp-pointed knife scores the bandage from top to bottom. A little water from a medicine dropper is allowed to run in this groove. This softens the plaster, and by means of the knife and the medicine dropper filled with water, an ordinary plaster-of-Paris bandage can be removed in from two to three minutes, and in five minutes more a fresh plaster-of-Paris bandage, consisting of two bandages for the leg, and three, or at the most, four, when the plaster extends to the middle of the thigh, can be re-applied. This is quite different from the method of sawing the plaster-of Paris bandages, which frequently occupied twenty minutes to half an hour. This application of light plaster-of-Paris bandages, and their easy removal, is, to our minds, a very important point in the management of compound fractures, as it enables the surgeon at any time to see what is going on inside the dressing.

We rarely if ever re-apply a cut-up plaster after it is entirely removed from the limb. Greater security is afforded the limb by the application of a new and complete circular plaster-of-Paris bandage. A rise in temperature and pain in the limb still remain the cardinal reasons for the removal of a plaster-of-Paris bandage. We disregard a rise in temperature to 100° or 101° for the first three or four days; but after the first forty-eight hours, severe or constant pain in a fracture, whether it be simple or compound, is a symptom that we never disregard, and requires a careful investigation as to its cause. Frequently the simple division of the plaster in front is a relief to the pain. The plaster can be held together by straps and buckles.

Formerly if a plaster-of-Paris bandage leaked through, we changed the dressing. Now, however, we re-inforce the plaster-of-Paris bandage at the point at which the leak first occurs, by applying an antiseptic dressing outside of this. In case we find marked bowing or lateral displacement in a compound fracture at the end of a fortnight or three weeks, it is corrected by suitably applied pads, and if necessary tenotomy of the tendo-Achillis under an anæsthetic. Occasionally we resort to the use of Smith's anterior splint, or a fracture box, and the best of these is Dr. Bolle's.

In managing a compound fracture in an alcoholic there is nothing more satisfactory than to place it in a plaster-of-Paris bandage for protection. He can then thrash about without destroying his limb. Even in the most hopeless cases, where delirium tremens, pneumonia, or uræmia complicate a compound fracture, the practitioner should never forget that the plaster-of-Paris bandage requires changing at appropriate intervals of time. Unless this precaution is taken, a limb with backward or lateral displacement of the fragments may come out of the plaster-of-Paris bandage at the end of six weeks.

(4) *Prognosis.* — The restoration of the limb to usefulness is a matter of great interest. Although pus, sloughing and necrosis all hinder the rapid recovery of the patient, the patients almost always have useful limbs. So far as our investigation has led us we have found only two cases with useless limbs. One is possibly due to acquired flat-foot from the injury; the second is a forearm, where after a compound fracture of both bones, without extensive destruction of the soft parts, non-union and a "dangle" limb is reported. Primary amputation was advised in this case. In a number of cases amputation of the limb was advised, and yet the patients recovered with useful limbs. This has led us to be extremely careful about advising a primary amputation.

Lateral displacement and backward bowing of the leg are the common deformities in adults, but not in children. The danger from sepsis is very slight; although there has been pus in a small number of our 160 cases, yet there has been no death from sepsis. There have been two cases of death from tetanus, and one from fat embolism.

The prognosis of a compound fracture of the limb depends upon the same considerations that determine whether the limb shall be amputated or not. Extensive crushing of the soft parts hinders the restoration of the limb to usefulness fully as much as necrosis of the bone. If at the end of six months a sinus remains, and loose fragments can be detected, an operation for their removal is indicated.

In short, we have come to regard the prognosis of compound fractures as very favorable. As an example of the confidence which is felt by one surgeon in the treatment of compound fractures, we may say that he has told us that if he had a "simple complicated" fracture, which was attended by much pain, he should not hesitate to have it converted into a compound fracture, that the cause of the pain might be determined, and, if possible, remedied. This is, perhaps, too confident a view to take of a compound fracture; but it illustrates the marked change in results which has occurred.

Conclusions. — (1) That every compound fracture of the thigh, leg, arm and forearm should be rendered scrupulously, surgically clean, and should be absolutely immobilized.

(2) That this immobilization is conveniently attained by the light, circular, plaster-of-Paris washed bandage.

(3) That a plaster-of-Paris bandage should not be allowed to remain on a limb over a fortnight in the first month of treatment of a compound fracture, as backward bowing and lateral displacement can be avoided by this precaution.

(4) That while pus, slough, necrosis or deformity may exceptionally occur, yet the rule is, union by first intention, and the early restoration of limbs to usefulness.

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ANALYSIS OF TWENTY-FIVE CASES OF HYDATIDIFORM MOLES.[1]

BY GEORGE A. CRAIGIN, M.D.

The object of the following paper is to introduce the subject of hydatidiform moles.

The disease is a rare one; yet few men of large experience escape without a case or two, and the gravity of the trouble, its varying manifestations, the difficult diagnosis, and the necessity for prompt, energetic, yet well-considered treatment, all give it importance.

Without attempting to present a review of the literature on the subject, I have collected twenty-five cases reported recently, and have tabulated them for comparison with the stereotyped clinical picture given us in the text-books. The exact figures can have little importance, especially as the reports have been made by so many different men, and with such varying degree of accuracy and detail. Yet in a general way a good deal can be inferred from such a table; and as no individual is likely to have enough cases to enable him to generalize, it is hoped a collection of this kind may be useful.

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[1] Read before the Obstetrical Section of the Massachusetts Medical Society, and recommended for publication by the Society.

Pathology. — The pathology, while interesting and the subject of much discussion, may be dismissed with a few words, as our object is strictly clinical. According to the generally accepted theory, the hydatidiform mole is always developed from an impregnated ovum. The characteristic is an abnormal development of the chorionic villi, usually at the expense of fœtal tissue. These villi undergo a myxomatous degeneration, there being formed cyst-like enlargements of the villous tubes varying in size from a pin-head to a walnut. These, branching from one another, with thread-like connections, resemble bunches of grapes or currants. The cysts are generally translucent, and contain a slimy fluid in which is a certain amount of mucin. The proportion between mole and fœtal tissue varies, but three types are recognized:

(1) Where there is a fœtus contained in an amniotic sac.

(2) Where there is still an amniotic sac with perhaps traces of a cord.

(3) Where there is nothing but the hydatidiform mass.

As the placenta is naturally formed toward the end of the third month, the myxomatous degeneration must necessarily begin during the first three months, since the placental tissue is never the seat of this change. In its formation the decidua takes the usual course, and envelopes the mole. The villi are embedded in the maternal tissue — at times penetrating even to the peritoneal covering. From this there follow some important points: (1) The uterine wall may be greatly weakened. (2) There is chance of tremendous hæmorrhage on separation of the mole from the uterus owing to the intimate relation between villi and uterine sinuses. (3) Parts may be left embedded in the uterine wall with increased danger of hæmorrhage and sepsis.

Etiology. — The etiology is still obscure. The following facts, however, are suggestive: The mole occurs more frequently — (1) in multiparæ, especially where pregnancies have followed in rapid succession; (2) between the ages of twenty-five and forty; (3) where there has been preceding molar pregnancy; (4) where there is syphilitic or cancerous dyscrasia; (5) where there has been endometritis. The last is especially emphasized by Virchow, and is perhaps often the important factor in the other conditions mentioned. The frequency of occurrence is not well determined, the estimates varying from 1 in 20,375 (Boivin), to 1 in 532 (Charity Hospital, Berlin). The probable average is about 1 in 3,000. The maternal mortality has been estimated at 13 per cent.

The fœtus at best is feeble. The mole, though generally expelled before the seventh month, may be carried far beyond term or after a living child. Boivin reports one at fourteen months, and there is a report of two at five and six years. The size may reach that of a child's head. In multiple pregnancy there may be a mole and a healthy child.

The usual course of the disease, as laid down in the text-books, is something as follows: Pregnancy is recognized. The uterus increases rapidly in size, out of proportion to the time. There is usually a vaginal discharge of watery or thin bloody fluid about the third month, and after, at times containing the cyst-like bodies. There may be occasional hæmorrhages later. The feel of the uterus is doughy except in its lower segment, which is peculiarly tense. A sense of fluctuation is rarely obtained. There is no *ballottement.* No fœtal heart can be heard. Fœtal parts cannot be felt. Fœtal movements are absent. Abortion occurs before the sixth month as a rule.

As diagnostic points of especial value, are mentioned: (1) Rapid growth of the uterus; (2) absence of signs of fœtus; (3) discharge of bloody water with cysts — the pathognomonic sign, — (4) and tense lower segment.

Absence of reflex symptoms is regarded as important by some. The impression given by the usual description is that the clinical picture is quite well defined, and diagnosis should be fairly easy.

The result of tabulating the twenty-five recent cases was as follows: I found that the age varied greatly, and was younger than it is generally estimated, being on the average about thirty years. The oldest was fifty-five, the youngest twenty, though in reading I came across one at eighteen years. The number occurring among the earlier pregnancies was also a surprise. Out of the twenty-five there were six in their first, three in their second, and three in their third pregnancy. Thus one-quarter were primiparæ, and nearly one-half as early as the third pregnancy. Eight had had previous abortions. Three had aborted once: three twice (in one case a mole each time); one three times (one a mole), and one four times.

Little else was noted among predisposing causes. Specific history was seldom found. In fourteen it was stated as absent; in six not stated; and in the remaining five doubtful. Cancer was not mentioned, neither was endometritis. This, of course, has very little significance, meaning simply that the reporter had not inquired into it. The length of time the mole was carried varied from eleven weeks to seven months, with an average in twenty-two cases of four and a half months.

Among the ordinary signs of pregnancy the condition of the breasts was noted in seven cases. Of these three were small or flabby, though one had pigmentation of the areolæ. Four were enlarged; one without, the others with pigmentation. In one or two the enlargement of the papillæ was especially noted. One had milk. The characteristic bluish discoloration of the labia was mentioned in one case. Nausea and vomiting was a marked symptom, occurring in ten out of twenty-five. In six of these it was very severe. As a rule, it appeared early, sometimes at the very beginning, and became more and more distressing. It was present in each of three cases where the uterus was tender, being in proportion to the amount of tenderness. The uterus had enlarged very rapidly in these three, and in most of the other cases with nausea. Nausea was more frequent in the first and second pregnancy. Salivation occurred in but one. Abdominal pain was a symptom in two; in one coming on in paroxysms from side to side, in the other intermittent, and apparently owing to uterine contractions, as it was always accompanied by blood or watery fluid. In two cases the patients were very positive that they felt life. One was delivered at the end of the fourth month, the other in the middle of the fifth. The size of the uterus was mentioned in fourteen cases. Of these, thirteen were larger than normal for the period. One was smaller — a case where abortion was induced at the fourth month for uræmic convulsions.

A deceptive feeling of *ballottement* and an indistinct sense of fluctuation were noted in one case — delivered early in the fourth month, the uterus reaching to the umbilicus. The doughy, boggy feeling was mentioned only once. There was no œdema in this case. A distinct bruit was mentioned in one, like the placental sound. Œdema was mentioned in six out of the twenty-five. It was generally of the ankles, legs, genitals and abdomen, but was found once in the hands. In only two cases of œdema was albuminuria noticed. One of these died from hæmorrhage and uræmia — the duration of pregnancy not known. The other had uræmic convulsions, but was delivered rapidly in the fourth month and lived. Uræmia and albuminuria were not mentioned in the other twenty-three cases.

In six cases there was no vaginal discharge prior to the hæmorrhage at the time of delivery. The average duration of these cases was four and a half months. In all but one of them the abortion began with a severe hæmorrhage without any warning. The one exception was delivered spontaneously at four months and ten days, with the decidua intact, enveloping the mole. In but one of the twenty-five cases was there at any time a watery discharge. This was "like amniotic fluid," but alternated with blood. It appeared at the third month. A fœtus thirty centimetres long was expelled with this mole at five months. Watery blood was noted in four only. In one it appeared at the sixth week, and was slight but constant the remaining six weeks. In one it was constant from the beginning, but slight and lasted four months, when the patient was delivered for eclampsia. In two there was a slight, intermittent flow for about six weeks.

In fifteen cases the flow was apparently not enough unlike an ordinary discharge of blood to be noticed as such. Six of these had a *constant* flow beginning between the third and the sixth month, and lasting from three to eleven weeks. In two the amount lost was large enough to seriously affect the general health.

In five the flow was intermittent, appearing between first and sixth months, and lasting from two weeks to five months. In one the amount lost was considerable.

In three the flow was intermittent to begin with, but became constant, and considerable in amount. It began between the fifth and eighth week, and lasted one to three months. The time when the discharge appeared was noted in sixteen. It ranged between the fourth and twenty-fourth weeks, the majority (nine) being between the sixth and twelfth. One flowed apparently from the very beginning.

In not one case were cysts noticed in the discharge. Clots were mentioned in one, and a few shreds in another. In one, on using the speculum a small mass of cysts was found protruding from the os; and in another, after ergot had been given, a few came away.

The notes on the cessation of menstruation were rather meagre, but from what I could learn the flow often stopped entirely as in normal pregnancy, although perhaps a comparatively large number had irregular or imperfect menstruation for a month or so. In one case menstruation went on as usual until a month before delivery, when intermittent and later constant hæmorrhage set in. This was in the fatal uræmic case; and she must have been several months pregnant, as the uterine tumor extended two or three fingers' breadths above the umbilicus.

The number in which hæmorrhage was profuse, either just before or during expulsion, was comparatively large — seventeen out of twenty-five. Of these thirteen occurred before any treatment could be given, six being very severe. During treatment and before complete expulsion, four bled profusely; but in every case after the uterus was empty its walls contracted well, and hæmorrhage ceased. The condition of the cervix at the time of the last examination (just before treatment was begun) showed that in almost every instance very little change had taken place, even when there had already been profuse hæmorrhage. In all the primiparæ the os was tightly closed, the cervix long and often "dense." In the others "slightly patulous," "admitting one finger," rarely "two fingers," or "slightly dilated."

The following incident is instructive: A tampon was put in for slight hæmorrhage, the patient a multipara. On removing the tampon eight hours later, the os admitted a finger tip. The doctor went away, and returning seven hours later found the patient nearly moribund from an enormous hæmorrhage. The os was but two centimetres in diameter.

A small placenta was mentioned in three instances; and curiously enough all were of the placenta prævia variety.

One patient began with what appeared an ordinary abortion, and was delivered of a dead three-months fœtus with membranes (nothing said of placenta). Hæmorrhage and pains continued, and the next day a large hydatidiform mole was expelled. In another a dead fœtus thirty centimetres long was expelled with the mole. The placenta (a prævia) was small and bloodless. The decidua was intact, or nearly so, in two, in both of which hæmorrhage was slight. They were delivered at three and four and a half months.

The manner of expulsion varied greatly. In four the whole mass was expelled from the uterus without any assistance, and but one was accompanied by hæmorrhage of any account. In such it is fair to infer that the villi did not enter deeply into the uterine tissue. All made a good recovery, and none were earlier than the fourth month. Three started in spontaneously, but the expulsion was incomplete, and had to be finished by the curette or hand *in utero*. Of these all had considerable hæmorrhage. One made a slow recovery, owing to the necessity of irrigation and curetting for ten successive days before all was removed. They ranged between four and five and one-half months. Six were dilated by instrument or by the hand, and the uterus was emptied immediately. Only three of these had much hæmorrhage at the time. The only one with slow recovery bled little at the operation, but had lost considerably for a month.

Ten cases were treated first by tampon, ergot, or the two combined; and all but two had to be finished by the curette or hand. In one, Crédé's method of expression was used successfully with an os two centimetres in diameter. This patient was the one mentioned as having bled after removal of a tampon. She died later of sepsis. Two of the ten made a slow recovery; one from sepsis due to retained fragments, where the curette was not used, reliance being placed on glycerine plugs, ergot, and douches. This was one of the cases with dead fœtus. The other slow recovery was due to the effect of hæmorrhage which was very great, owing to delayed treatment. The patient refused instrumental interference till hæmorrhage was alarming.

One patient had a spontaneous delivery after pains had been started by the passage of a sound.

Three died: — one undelivered, probably from hæmorrhage and uræmia (no convulsions); one from sepsis on the seventeenth day; one, five months after delivery, from a papillary epithelioma of the uterus, which pathological examination showed to be due in all probability to the retained villi. This patient was the oldest, being fifty-five years.

From a consideration of the preceding summary the following points seem worthy of emphasis:

(1) Primiparæ are not rarely affected; and the average age is younger than generally estimated.

(2) There may be present any of the ordinary changes of breast, labia, etc., found in normal pregnancy.

(3) There is medico-legal importance in the following: *a*, origin from impregnated ovum only; *b*, the placenta once formed is never the seat of this myxomatous change; *c*, the mole may be carried beyond term or after a living child; *d*, the appearances after delivery of a mole may be indistinguishable from those after child-birth.

(4) Reflex symptoms of nausea and vomiting common to pregnancy, so far from being absent or rare, are rather frequent, and as a rule are early, severe, progressive.

(5) There may be œdema without albuminuria. Schul, who has recently made a study of the relation of albuminuria to hydatidiform mole, finds that while it does not occur oftener, it generally appears earlier than in normal pregnancy.

(6) Uræmia may be a complication, and, with convulsions, is amenable to the same treatment as in pregnancy.

(7) Too much stress has been laid on the so-called characteristic discharge of thin watery blood, with occasional cysts. For while in the cases cited the flow may not have been pure blood, it was so nearly that in a large proportion of cases, that no distinction was noted. Therefore, any vaginal discharge, watery or bloody, slight or considerable in amount, intermittent or constant, and without cysts, is perfectly consistent with hydatidiform mole.

(8) Sudden hæmorrhage, sufficient to cause grave general symptoms, is frequent; as also exhausting intermittent flow.

Diagnosis. — The diagnosis in a considerable number of cases will not be made because there is nothing but a rather large uterus to make the patient suppose her pregnancy abnormal, until severe hæmorrhage sets in. In most cases the diagnosis in the early months will be almost impossible, although vaginal discharge, enlarged uterus, and possibly reflex symptoms, point to the uterus as the seat of some pathological process. The differential diagnosis will very likely have to rest on the passage of a sound; and unless cysts are brought away even that cannot ensure certainty. Even in those cases where the uterus has reached such a size that one could look for signs of a fœtus, there must often be great uncertainty, particularly as it is possible to have a living child. And when there is no fœtus the placental bruit, the feeling of life by the patient, with the *pseudo-ballottement*, are all misleading: and more so if there is a small placenta prævia, or an intact decidua with clots, which must give a placental feel. Again the uterus may be smaller than normal for the period. And menstruation may be regular for several months.

On the whole, then, it is evident that while diagnosis may be exceedingly easy, it must often be difficult if not impossible. There is not a sign or symptom ordinarily mentioned as diagnostic that may not be absent, and these cases show, if nothing else, the folly of relying on any one sign or especial group of signs.

Treatment. — When diagnosis cannot be made these cases must be treated on general principles, and it must often happen that nothing is done until hæmorrhage, exhausting nausea and vomiting, or convulsions indicate the immediate emptying of the uterus. When once the diagnosis is made the following points have important bearing on the treatment:

(1) The patient is liable to repeated hæmorrhages sufficient to cause grave general disturbance, and to sudden severe hæmorrhage.

(2) A closed rigid os is almost the rule even after severe hæmorrhage.

(3) The mole can be delivered without complete dilatation, and with no more loss of blood than is almost certain to follow later, when it may not be easy to interfere.

(4) The uterus contracts well after being emptied, even when pains have not been present before dilatation was begun.

(5) Uterine stimulants and tampons will generally have to be supplemented by the hand or curette.

(6) Tampons with delay increase the danger of infection.

(7) Incomplete expulsion makes hæmorrhage and sepsis liable.

(8) The possibility of a thin uterine wall should be borne in mind when the curette, the hand *in utero*, or Credé's method of expression are used.

In the light of the above facts the proper course to be followed is clear. The uterus should be emptied as soon as possible. Just how to begin this however, may be a question. To rely entirely upon tampons, colpeurynter and ergot would be poor practice. The process is slow and imperfect; hæmorrhage and exhaustion greater. Yet in cases with rigid os and long dense cervix, undoubtedly the firm vaginal tampon is a most effective means of starting up pains, and getting a soft and dilatable os. It has another advantage, that of controlling hæmorrhage to a considerable extent during dilatation. Nevertheless the patient should not be left for any length of time without skilled attendance; for even if there is no leaking by the plug there may be concealed hæmorrhage. It is very dangerous to leave after removing the tampon, no matter how small the os.

The use of ergot before the uterus is empty has been recommended by many, but it must be as objectionable here as in the third stage of labor. In any case, as soon as the cervix will permit a rapid dilatation by hand or instrument, this should be done under ether, and the uterus emptied rapidly and completely by the hand or curette. And it should be remembered that complete dilatation, while desirable, is not necessary, for the soft friable nature of the tumor allows its removal with curette alone through a comparatively small canal. The possibility of thinned uterine wall must be kept in mind.

During the operation hæmorrhage is generally profuse, but as it almost invariably stops with the complete removal of the mass the only thing to do is to get through as quickly as may be. Of course before starting in, every preparation should be made for this hæmorrhage, and such means should be on hand as the operator is accustomed to provide in case of post-partum hæmorrhage. The uterus once empty behaves like that after child-birth, and the principles of treatment are the same. An antiseptic uterine douche must always be given if instruments or the hand have entered the cavity.

The mortality in this series is fairly low (three in twenty-five), especially when it is considered that one patient was almost beyond all help before being seen; another died five months later of secondary cancer, leaving one to accounted for by septicæmia. It would seem, then, that with treatment early and prompt enough to prevent long-continued hæmorrhage, and with careful antisepsis, the prognosis should be better to-day than it was when most of the statistics were made out.

Dr. S. H. Ayer, not being able to be present, has kindly sent a specimen of a large hydatidiform mole with the following history.

"The patient, an Irish woman, twenty-five years old, was confined with her first baby May 22, 1891. Her menstrual periods returned in about two months after this date and appeared regularly until January 10th of this year. From this date to May 4th there was no menstrual flow, the patient during this time exhibiting all the symptoms of early pregnancy. On the latter date there was quite a copious flowing, which, however, subsided in three days. A few days later it began again and continued without interruption until June 3d, at which time the accompanying specimen was passed after very severe uterine pains lasting about twelve hours. The four weeks of flowing was unknown to me, the patient not having notified me. There was no pain whatever until twelve hours previous to the expulsion of the mole. Up to the present time the patient has been doing uninterruptedly well."

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SPINAL BIRTH PALSIES: A STUDY OF NINE CASES OF "OBSTETRIC PARALYSIS."[1]

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DURING the past twelvemonth at the Children's Hospital, through the courtesy of Dr. Bullard, I have had the opportunity of examining eight cases of so-called "obstetric paralysis." I have also the notes of one case occurring at St. Mary's Infant Asylum, Dorchester.

All of these cases are representative of a type which is by no means common, and which is scarcely touched upon at all in current neurological literature. As the conclusions which I have reached respecting its etiology are at variance with those of well-known observers, I have thought a statement of them might be not without value.

As commonly seen, there is more or less loss of power in the whole upper extremity — generally the right — with paralysis of certain muscles and groups of muscles. This is always associated with a history of difficult birth. The arm hangs listlessly by the side, with the olecranon to the front. The forearm is prone, the thumb flexed across the palm, and the fingers folded over it. The muscles are flaccid. Occasionally, if the child is old enough, some wasting and shortening can be noticed, and rarely a duskiness and unusual heat or cold. The motions of flexion at the elbow, and lateral extension (that is, extension from the side), were lost in all of these cases. The power of extending the fingers was also lost in all but one case. Extension of the forearm on the arm, and flexion of the fingers, was retained in nearly all. Sensation was unimpaired in all those cases where it was tested for — five in all. The latissimus dorsi, teres major and subscapularis were operative in all; and their unopposed action resulted in rotating the humerus inwards. The rhomboids, supraspinatus and infraspinatus were paralyzed in several instances, and the scapula, in consequence, relaxed and unduly prominent. The cases follow:

CASE I. Children's Hospital, Out-patient Department, June 8, 1891.

B. W., five years old, second child. Head presentation. Mother in labor two days and a half. Forceps. Paralysis noticed immediately after birth. The right upper extremity is paralyzed; the arm rotated inwards, the olecranon to the front; the forearm prone. There was no grasp at first; there is a good grasp now. Sensation is normal. The motions of flexion at the elbow, lateral extension, supination, and extension of the fingers cannot be performed.

Analysis. — The internal rotators of the upper arm are the teres major, subscapularis and latissimus dorsi, all of which are supplied by the subscapular nerves. The external rotators of the upper arm are the infraspinatus and teres minor, supplied respectively by the suprascapular and circumflex nerves.

Since the arm is constantly held in the position of internal rotation, there must exist, to account for this, either spasticity of the internal rotators, or loss of power in the external rotators. The former are contracted, but there is nothing spastic about them; the latter are never moved, and are flaccid. This, therefore, is the paralyzed group.

The nerves supplying these muscles, namely, the suprascapular and circumflex, are both branches of the posterior cord of the bracheal plexus. Since their function is impaired, one would also expect, *a priori*, that the remaining muscles supplied by branches of the posterior cord would also be impaired. This appears to be the case, since neither arm nor forearm can be extended nor supinated. The muscles employed in these movements are all supplied by the musculo-spiral nerve or its branches, itself a branch of the posterior cord.

The biceps, coraco-brachialis and brachialis anticus are all paralyzed, since flexion at the elbow is lost entirely. These muscles are supplied by the musculo-cutaneous nerve, which is a branch of the outer cord. The brachialis anticus, in addition, usually receives a filament from the musculo-spiral nerve. This supply also being cut off by the paralysis of the posterior cord, the loss of motion at the elbow is complete.

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[1] Read, by invitation, before the Obstetrical Society of Boston, May 7, 1892.

Notwithstanding this extensive motor paralysis, *there is no anæsthesia to be observed in the cutaneous distribution of these nerves, nor, as far as can be determined, any diminution even of sensation.*

The inner cord of the plexus appears to have escaped entirely.

Case II. Children's Hospital, Out-patient Department, June 8, 1891.

L. W., fifteen months old, third child (sister of the preceding). Head presentation. Labor lasted a day and a night. Forceps. Paralysis noticed immediately after birth. There is loss of power in the right upper extremity, which is rotated inwards, with the olecranon to the front and the forearm prone. There was no grasp at first, but this has improved under treatment. The right arm is shorter and smaller at all points than the left. Sensation is normal.

Analysis shows the same muscles and nerves to be affected as in Case I, to wit, the upper-arm flexors, supinators, deltoid and forearm extensor muscles, and the musculo-cutaneous, musculo-spiral and circumflex nerves.

Case III. Children's Hospital, Out-patient Department, June 8, 1891.

H. B., eight weeks old, sixth child. Head presentation. Labor lasted three days. Forceps. Extraction of the shoulders was difficult (so the mother was told) the accoucher making strong traction on an arm, presumably the left, since this was swollen for three days afterwards. There was a bilateral, supra-orbital *caput succedanum* at birth, and paralysis of the arm was noticed from the first. The left upper extremity is paralyzed; the elbow is held to the side and the hand is prone. There are slight movements of flexion at the elbow, and lateral extension. The child also has some power of flexion in the fingers and wrist. He can also extend the last three fingers, but not the thumb or forefinger.

Analysis. — This case, at some time during the labor, must have been a brow presentation. The situation of the *caput* would seem to indicate this. The situation of the lesion, however, forbids its being referred to the presentation, but rather to the traction on the arm.

The posterior cord and its branches have largely escaped injury. The elbow is held in its proper position by the side. The external rotators, therefore, are operative. These are supplied by the suprascapular and circumflex nerves. There is some movement of the deltoid, supplied also by the circumflex. The elbow can be partially bent through the unaided efforts of the brachialis anticus, supplied with power through the filament from the musculo-spiral nerve. The musculo-cutaneous nerve is paralyzed. The digits are all extended by muscles supplied by branches of the musculo-spiral nerve. *Notwithstanding this common origin of nerve-supply, three of these muscles are paralyzed, namely, the extensor primis internodii pollicis, the extensor secundi internodii pollicis, and the extensor indicis; and two are operative, namely, the extensor communis digitorum and extensor minimi digiti.* The musculo-spiral nerve, therefore, is inoperative in some of its branches, but not in all. The median and ulnar nerves have also escaped complete paralysis.

Case IV. Children's Hospital, Out-patient Department, June 15, 1891.

W. W., two years old, second child. Head presentation. Labor lasted seven hours. Forceps. Paralysis noticed soon after birth. The right upper extremity cannot be raised from the side. The humerus is rotated inwards, the olecranon to the front, the hand prone. The fingers are flexed and the thumb folded across the palm under them. The power of extending them is lost. The grasp is feeble but distinct. The shoulder blade on the right is decidedly more prominent than that on the left. Sensation is everywhere normal.

Analysis shows this case to differ from Nos. I and II only in the relaxation of the shoulder-blade.

Case V. Children's Hospital, Out-patient Department, June 24, 1891.

G. Q., age eleven months, third child. Difficult births with preceding children. Head presentation. Labor lasted two hours. Forceps. Extract of shoulders difficult, necessitating additional traction by the head. Paralysis noticed immediately after birth. The right upper extremity is paralyzed. It is smaller at all points than the left and distinctly shorter. The head of the humerus seems to be smaller on the right and to rise upward and backward more freely than that on the left. The humerus is rotated inwards with the olecranon in front. There is extreme pronation of the hand with the thumb folded across the palm and the fingers bent over it. The grasp on this side is weaker than normal. Sensation is everywhere unimpaired.

This case follows the general type of Nos. I and II, the muscles involved being the upper arm flexors, the deltoid, supinators and fore-arm extensors, and the nerves involved being the musculo-cutaneous, circumflex and musculo-spiral.

Case VI. St. Mary's Infant Asylum, Dorchester, June 27, 1891.

Female infant, aged two days. O. R. P. position gradually changing to right transverse. Labor lasted twenty hours. Forceps. Extraction of shoulders difficult, accoucheur being obliged to pull on head with both hands so forcibly that he was afraid the vertebræ would dislocate. The left eyelid was swollen at birth. The mark of the forceps was visible over the left eye and right ear. The right upper extremity is paralyzed. The humerus is rotated inwards with the olecranon in front. The grasp is good. Sensation not tested.

So far as observed this case follows the general type of Nos. I, II and V, the muscles involved being the upper arm flexors and supinators, and the nerves, the musculo-cutaneous and musculo-spiral.

Case VII. Children's Hospital, Out-patient Department, September 2, 1891.

F. J., aged three months, third child. Head presentation. Labor lasted sixteen hours. Forceps. There was some delay in the delivery of the shoulders and the accoucheur wrapped a towel about the infant's head and pulled. The paralysis was noticed shortly after birth. The right upper extremity is paralyzed, The humerus is rotated inwards, with the olecranon in front. The hand is prone, the fingers flexed, and the thumb folded across the palm beneath them. The muscles are flaccid. A pin prick is felt throughout the paralytic area, also the symptoms of heat and cold. Six months later, there was distinct shortening and wasting of this extremity, and the mother reports that occasionally it is colder and more bluish than the other. The motion of flexion at the elbow and wrist are lost, also those of supination and lateral extension. Extension of the forearm on the arm can be performed, though feebly. Extension of the wrist or fingers cannot be performed. Pronation is possible and also the power to lift the shoulder and swing the upper arm forward.

Analysis shows that beside the features common alike to this case and Nos. I, II, V and VI, there are two which have a significance of their own. These are the power to swing the arm forward, and the power of extending the forearm. The arm can only be swung forward by the action of the coraco-brachialis. This muscle has but one nerve supply, namely: the musculo-cutaneous. The other muscles supplied by this nerve, namely: the biceps and brachialis anticus cannot be moved. *Hence a part only of this nerve is operative.*

The same is true of the musculo-spiral nerve, which supplies all the extensors of the arm and forearm. *The filament to the triceps does its work, while those to the forearm extensors do not.*

Case VIII. Children's Hospital, Out-patient Department, September 16, 1891.

T. F., aged nine weeks, third child. Forceps. (No further obstetric history was obtained.) Since birth, the right upper extremity has been paralyzed. The arm is rotated outwards. The muscles are flaccid. Passive motion is free.

Case IX. Children's Hospital, Out-patient Department, February 13, 1892.

A. M., aged six weeks, second child. Notes on the labor have been obtained from the Boston Lying-in Hospital, where it occurred.

"January 6th, 1 a. m., labor began: 6.40 entered hospital; 8.15 membranes ruptured; 8.45 os fully dilated; 9.10 child born; 9.15 placenta born.

"The child, a female, weighed ten pounds, and measured twenty-two inches. There was no *caput.* The labor was normal, the first stage lasting seven hours and forty-five minutes, the second stage twenty-five minutes, and the third stage five minutes. The urine was negative. The presentation was a head, and the position an O. L. A.

"This was an easy multiparous labor. After the head was born there was no advance, and strong traction on the head combined with pressure on the fundus was necessary to deliver the body.

"At birth it was noticed that the child seemed able to use the right arm to a limited extent only. The fingers moved quite freely; the forearm and wrist but a very little. Two small echymoses were noticed on the back just below the angle of the scapula."

The whole arm is flaccid, the fingers are flexed. Passive movement is free in every direction. The joints are slightly lax. No bony lesion was found.

The muscles involved are the upper-arm flexors and supinators, and the nerves, the musculo-cutaneous and musculo-spiral.

Etiology. — Although the upper-arm type of paralysis is by no means uncommon, the great bulk of cases occur in the second or third year. Comparatively few can be definitely referred to the time of birth. Of those which can be so referred, the majority have a history of instrumental delivery. Thus of these nine cases, eight were delivered by the forceps. Influenced, no doubt, by this factor common to so many cases, such eminent observers as Erb and Gowers have been tempted to look upon the affection as a pressure paralysis. Indeed, Gowers goes so far as to say[2] that there is a particular point in front of the edge of the trapezius where the blades of a sharply-curved forceps might pinch one or more of the nerve roots entering the brachial plexus. Very likely this *is* so; it is certainly possible anatomically, but one would at least expect the left side to be affected as often as the right. In the nine cases which I report, however, this is not so. In eight of them the paralysis was on the right side, and in the ninth there was abundant reason why it should be on the left side, since that arm was pulled so forcibly at birth as to leave it swollen for three days afterwards.

Again, in a pressure paralysis there is an abolition of sensation, commensurate in some degree to the loss of motion. In such cases the anæsthetic area is not always identical with the cutaneous distribution of the affected nerve, owing to anastomoses. But in the five cases where sensation was tested for, not only was it present where it should have been absent, but there was neither anæsthesia nor hyperæsthesia anywhere in the arm.

Finally, as if to remove entirely the possibility of pressure as an etiological factor, comes the obstetrical history of the ninth case, from the Lying-in Hospital, where no instruments were used and consequently no pressure.

What is then the nature of these cases?

Jacobi, in a list of palsies seen in anterior poliomyelitis (referred to in Keating's "Cyclopædia of Diseases of Children," Vol. iv, p. 701), speaks of a paralysis of the deltoid, often associated with paralysis of the biceps, brachialis anticus and supinator longus. It occurs in children of two or three years, rarely earlier, and is preceded by the usual history of damp ground, cold stones and slight fever.

If the ground, stones and fever are left out of account, there is much in common between the poliomyelitis of two or three years of age, and the birth palsy under consideration. In Case III the posterior interosseous nerve is not paralyzed throughout, as it should be if the lesion was in its mother nerve, the musculo spiral. In Case VII some of the branches of the musculo-cutaneous and musculo-spiral nerves are paralyzed, while other branches are not. In Cases II and V there is distinct atrophy, and in Case VII some vaso-motor disturbance. Sensation was preserved in all the cases where it was tested for — five in all. Faradism failed to evoke any response.

In view of these facts and resemblances I think there is abundant warranty for locating the lesion in the cord rather than in the nerves, *and for considering this particular birth palsy a rare form of acute anterior poliomyelitis.* I say this advisedly, for I am well aware that spinal birth palsies are considered extremely rare affections, and as due to traction great enough to produce gross changes in the cord.

The nature of anterior poliomyelitis, apart from etiological factors, has received much elucidation within a few years. It has long been known that degenerative changes in the anterior cornua accompanied poliomyelitis, but it has been reserved for recent years to show on the autopsy-table, the pre-existing vascular changes.

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[2] London Lancet, April 14, 27, 1889.

Gowers ("Diseases of the Nervous System," p. 264) refers to an examination made in 1885, by D. Drummond, on the body of a child five years old, who died after a few hours illness. In the cervical region of the cord, an undue redness in the anterior horns was noticed. The vessels were distended with blood from the periphery to the cornua. Microscopically there was distention of the capillaries, extravasations in the substance of the gray matter, swelling of the neuroglia and ganglion cells, and the latter granular and with indistinct processes.

Damaschino (*L' Union Médicale*, 1883, quoted by Jacobi in his "System of Practical Medicine," 1886) found in the cord of a child two and one-half years old, in whom the left leg and right arm became suddenly paralyzed, and who died twenty-six days after the commencement of the attack, foci of red softening in the anterior cornua of the left lumbar and right cervical regions. The blood-vessels were distended, there were granular corpuscles in the lymphatic sheaths and other changes.

These cases establish the fact that hyperæmia of the anterior cornua preceded its degeneration.

In cases of normal labor there is more or less venous congestion of the central nervous system, as shown by Dr. Sarah McNutt, of New York. This congestion is directly proportional to the obstacles to delivery. If traction is made upon an already congested cord, the conditions for the removal of the congestion cannot be said to be favorable. Rather, one would expect to find such changes as distended capillaries, extravasations, swollen neuroglia and granular glanglion cells.

Now of etiological factors in the nine cases reported in this paper, two stand out as common to all. *They are, greater or less obstacle to delivery and traction.* Thus in Cases III, V, VI, VII and IX, it is expressly noted that the extraction of the shoulders was difficult.[8] In Cases I to VIII there was traction in the shape of forceps, while in Cases III, V, VI, VII and IX there was additional traction by the hands of the accoucheur. The physiological congestion of birth, therefore, was increased in five cases by additional obstruction, while forcible traction was present in all. I cannot but think that microscopical examination of the vascular horns of the cord would show cause sufficient to account for the production of this particular form of palsy.

It remains, in this connection, to speak of the reasons of the right-sidedness of the type.

In Cases VI and IX the fœtal position is given; in the remaining cases it can only be inferred.

In Case VI we are told that the position was an O. R. P., "gradually changing to a right transverse."

The marks of the forceps over the left eye and right ear bear this out, and show that they must have been applied to an incompletely rotated head. Traction, under such conditions, must have borne hardest on the right side, since this had the larger arc to pass through, and also on the cervical structures, since it was through these that traction was exerted on the trunk. Very possibly this forceps-traction was not sufficient of itself to produce the lesion; but the right side must have been already strained when the accoucheur, seizing the head with both hands, "pulled until he was afraid the vertebræ would dislocate."

In Case IX the circumstances were different. The position was an O. L. A., and the labor an easy one. Nothing worthy of note occurred till the head was born. Then the note says, "There was no advance." However this may be interpreted, there is one thing certain: it is the right shoulder in O. L. A. positions, which engages beneath the symphysis, while the left sweeps over the perineum. The most common cause of retardation at this stage is the locking of the right shoulder against the symphysis. Efforts to dislodge it by pulling on the head must of necessity bear hardest on the right shoulder and on the cervical structures connecting it with the head. Hence the occurrence of the lesion at this point.

Of the remaining cases nothing definite has been learned concerning the positions. Cases IV and V, however, could scarcely have been other than O. L. A. positions, since the former lasted but seven hours, and the latter two hours. In Cases I, II and III, the obstacles to delivery must have been considerable — the first lasting two and a half days, the second one and a half days, and the third three days. So the causes which were found to be operative in Cases VI and IX may very possibly have obtained in these other cases.

Prognosis. — The chances for recovery are not brilliant. On the contrary, they are rather against any decided improvement. Case I had lasted five years; and, allowing for the difference in size, there was scarcely any more control over the paralyzed muscles than was present in those of her infant sister, fifteen months old. Here, also, the likeness to anterior poliomyelitis is apparent, for pressure paralyses are comparatively transient affairs, and disappear in a few weeks or, at most, months after the removal of the pressure.

Treatment. — As regards treatment, little can be done beyond faradism, massage, and inunction with cod-liver oil. At the very beginning, it is possible some good might result from the internal administration of ergot.

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ON THE MODIFICATION OF LABOR DUE TO EXTREME MACERATION OF THE FŒTUS.[1]

BY CHARLES W. TOWNSEND, M.D.

My attention having been several times called to a modification of labor where the fœtus was much macerated, I have been surprised to find no mention of it in the books. My experience is not peculiar, however, for on examining the records of the Boston Lying-in Hospital, I discovered six other cases besides my own, where the modification in the labor was so marked and characteristic that the subject seemed worthy of study and record.

The modification I refer to is the almost complete, and in some cases complete, cessation of labor pains after the os is fully dilated, and the soft macerated head has come well down into the vagina. This occurs only when the head is so macerated as to easily form a soft, elongated bag, accommodating itself to the vaginal canal. Where the child is but slightly macerated, as is the case in the majority of instances, this modification of labor is not seen, and it may also be absent in cases of extreme maceration. Let me illustrate by relating briefly two typical cases.

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[8] In Cases I and II there was trouble with the delivery of all the children.

[1] Read before the Obstetrical Society of Boston, May 7, 1892.

Case I. On June 20, 1888, I was called by an externe of the hospital to see Mrs. M., a multipara thirty-seven years old, who had been in labor for eight hours. The pains had been very slight and infrequent for several hours, and on my arrival at 7.30 p. m., and for an hour previous to this there was a complete cessation of the pains. The os was fully dilated and the vagina was filled with a soft elongated mass in which the bones of the fœtal head were easily moved about. After waiting for half an hour with no appearance of labor, the woman remaining comfortable and free from pain, and the uterus soft, by means of external expression and urging the woman to bear down, at the same time exerting traction with the thumb and finger on the soft head, I succeeded in delivering the patient at 8.15 p. m., of a full term macerated fœtus.

Case II. Mrs. N., a primipara, said to be one month over her time began to have sharp pains on November 3, 1891, at intervals of twenty minutes. The pains gradually diminished during that and the succeeding day, and finally ceased. The externe in charge of the case was not called again till 11.30 p. m., November 6th. He found the patient very uncomfortable owing to frequent vomiting, but no labor pains were present. The os was fully dilated, as he supposed, by a large tough bag of membranes which reached to the vulva. I saw the patient at 8.30 the next morning and found the condition above described, the "bag of membranes" being, however, the soft head of a much macerated fœtus. No labor pains were present as shown by the subjective symptoms of the woman, and by the soft condition of the uterus on palpation. I saw the patient again at noon and found no change in the condition of things, the uterus still soft and not contracting, but the patient was showing signs of exhaustion, the pulse having risen to 118. Being unable to express the child as in the first case, ether was given and the fœtus easily delivered. I adopted a rather unusual course in the delivery which it may be of interest to mention. Wishing to deliver the head intact for the sake of the family, I first applied the forceps expecting, however, that it would slip, which it did. Delivery with the cranioclast was easy until the base of the skull came down to the floor of the pelvis, where it was arrested by the tight, undilated perineum. Still grasping the head in the cranioclast, the forceps was applied, and acting as a compressor brought out the head leaving the perineum intact. Both patients made normal non-febrile recoveries.

On examining the records of the hospital both out- and in-patient, I found eighty cases recorded where the fœtus was macerated at birth, and where the labor did not differ, as far as could be discovered from the records, from the average case where the child is alive. In these cases the child is described as but slightly macerated, the skin peeling from the extremities and the head retaining, in most cases, its ordinary consistency and shape. Some of these labors were exceptionally easy, owing to the small, premature condition of the child.

There were, however, six cases in addition to those already related above where the course of the labor showed the peculiarity I have pointed out. Brief extracts from the records will illustrate this:

Case III. Primipara, thirty-two years old. October 20, 1874, "slight pains." October 21st, "Os the size of a ten-cent piece; pains more severe, but diminished through the day." October 22d, "No pains at all; head well down in uterus." The patient grew tired and the pulse went up to 120. In afternoon, "pains very slight and at irregular intervals." At 8 p. m., macerated child delivered by forceps.

Case IV. Primipara, twenty years old. Os dilated very slowly and macerated child expressed by pressure on fundus.

Case V. Primipara, thirty-seven years old, "pains very light." The vagina was filled by a great bag of the macerated head in which the cranial bones floated, the scalp protruding half an inch through the vulva. After the second stage had lasted seven hours, the fœtus was removed by traction with the fingers on the scalp and pressure on the fundus.

Case VI. A multipara in the out-patient department. The fluctuating head made a large caput protruding from the vulva and mistaken by the externe for the bag of membranes. After a slow labor the much-macerated fœtus "came without pain to the mother; said she had to push it out."

Case VII. Multipara. On the externe's arrival "the cranium was projecting from the vagina nearly as far as the ears — the child had been in that position for half an hour. She was not having much pain. I immediately slipped my fingers by the side of the head, caught them, and by the use of moderate force easily delivered the child."

The child weighed 9¼ pounds and was much macerated. The labor lasted sixty hours.

Case VIII. A primipara. After twenty-four hours of labor during which the pains were very short and slight, the pains entirely ceased. On the externe's arrival at this juncture he found the head protruding several inches through the vulva, and the woman in a very nervous hysterical condition. To quote from his records: "The vulva was firm and not stretched. The head of the fœtus was very soft, the bones crushed together, and instead of dilating the parts had slid through like a bag of jelly. With the fingers I slowly dilated the os uteri and the vulva. Twenty minutes after my arrival the child was born. During all this time there were no pains."

It is to be particularly noted that the cessation of pains in these cases was real and not merely apparent. It happens not infrequently, owing to malpresentation or to a relative disproportion between the size of the head and the size of the pelvis, that the uterus, being unable to expel the fœtus, becomes tired and the rhythmic contractions with their subjective pains cease to be followed by a state of tonic contraction, accompanied by continual suffering but no sharp periodic pains. In this case where active interference is demanded, the unskilled attendant may be thrown off his guard and suppose that the pains have ceased, a most dangerous supposition to hold, and one easily disproved by palpation of the uterus. In the cases we are considering, however, the soft uncontracted state of the uterus showed a true absence of pains.

The reason for this state of affairs is rather difficult to understand, but may perhaps be explained by the fact that the vagina and cervical canal being but slightly distended by the soft elongated head, do not afford sufficient excitation to the uterus to contract. Another explanation suggests itself, that the uterus has lost its normal irritability owing to "missed labor" of perhaps a week or month previous. This would account for the great maceration of the fœtus supposing it to have died at this time. There is, however, no record in these cases of a previous abortive attempt at labor, although one case was said to be a month overdue.

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Medical Progress.

RECENT PROGRESS IN FOODS, DRUGS AND ARTICLES OF DOMESTIC USE.

BY B. F. DAVENPORT, M.D.

MILK FERMENTS.[1]

The caseine in milk seems to exist in a semi-solution, or colloidal state. While not rendering the milk noticeably viscous, it can yet be separated out by the use of porcelain filters. Its chemical nature appears to have a close relation to alkali albumen, and to distinguish it from curd it is called caseinogen. It is readily precipitated out of the milk by a slight excess of acid, and this without alteration in its nature. When precipitated out by rennet, however, it is chemically changed, being broken up into two different proteids, the one of which is, and the other is not, readily coagulated. The first of these is readily thrown out of solution by lime salts, and since these are always in milk the action of rennet is always to throw down a curd.

The ordinary curdling of milk is due to a lactic acid fermentation induced by micro-organisms which get into the milk subsequent to the milking. These are of a class rather than any single specific organism, although Lister held that there was one species normally present. This one he found common around dairies, but not elsewhere, not even in barns. This somewhat surprising observation has been confirmed by Dr. Conn.

The number of bacteria per cubic centimeter to be found in milk, even very shortly after it was drawn, has been reported by Cnopf and Escherich to be from 60,000 to 100,000. It is rare that milk reaches the consumer with a bacteria content which can be measured in smaller numbers than tens of thousands. These numbers are a striking commentary upon the bacteriological study of drinking-water. That when containing more than 1,000 is regarded as unsafe, while milk containing as many as 1,000,000 is frequently used as food without hesitation and without any evil results. It is evidently not the mere numbers of bacteria, but the kind, which may make a food dangerous.

Fokker has shown that fresh drawn milk, like the serum of fresh drawn blood, has for a few hours some power as a germicide. If samples of milk freshly drawn, and freshly sterilized by boiling, are inoculated in like manner, the sterilized sample will always be the one to curdle first. It loses this power within a few hours, or if it be heated. This property is confirmed by Freudenrich.

STERILIZED MILK.[2]

We are beginning to learn that the chemical changes induced in milk by sterilization are much greater than was supposed. The chief changes now known are the following: (1) As regards the destruction of germicidal power, careful experiments have shown that when a known number of cholera germs, for instance, are placed in fresh milk, there will be a less number to be found at the end of three hours than at first. Not so if it has been sterilized. (2) The lactalbumin in the milk, which is closely allied to serum albumin, is coagulated by heat, whereby the milk is rendered more viscous. This albumin is thus rendered less soluble and seemingly more difficult of digestion, and is the cause of change in the flavor of the milk. (3) The starch-fermenting power of the raw milk is lost, a property of value in the digestion of an infant, whose saliva has not yet acquired that power. (4) The milk sugar is changed, undergoing a degree of caramelization. (5) The fat in the milk is more or less freed from its emulsion, so as even to be found sometimes collected into drops upon the surface of sterilized milk. As the fat must be in an emulsion to be absorbed from the intestines, the digestive organs have the task of restoring this. (6) The caseine is also affected, as proven by its being less easily and completely precipitated by rennet. According to Baginsky it requires more rennet and a higher temperature, and according to Soxhlet the addition of some lime salt. In experiments of artificial digestion the caseine is found to be less readily acted upon by pepsin and pancreatin.

Milk, therefore, which has been sterilized, is certainly no longer the original natural product in other respects than being free from bacteria. Whether it will prove to be as desirable a food remains to be seen.

THE CHEMISTRY OF BREAD-MAKING.[3]

M. Léon Boutroux has now published the results of his extensive series of investigations as to whether the part of the leaven useful to the baker in a yeast, is a bacterium, or an association of several micro-organisms; also whether the gas raising the sponge of dough is produced at the expense of the gluten of the starch, or of the soluble matter in the flour.

He concludes that the alcohol forming yeast is always present in the leaven of bread, and that it may be cultivated in successive batches of dough, multiplying itself to such an extent that a mere trace may be taken in the first place, and after successive cultures in dough, it will be found to permeate every part of the mass. The other micro-organisms found in the dough, which are capable of raising it, cannot be so cultivated. During the fermentation that occurs in bread new sugar is not formed in appreciable quantity at the expense of the starch. The small quantity of sugar that is fermented consists of that which pre-existed in the flour, together with what is formed from the carbo-hydrates which are more readily affected than the starch. In proportion as the activity of the yeast is great, so is the gluten actually protected against the bacteria by the yeast. Since the alcohol yeast is the only micro-organism of use in the process of bread-making, care should be taken by bakers to secure as pure cultures as possible. Thus the duration of fermentation might be curtailed, the gluten left intact, whilst the quality of the bread would be sensibly improved.

COLORED BLOOD ORANGES.[4]

For some while oranges have been sold upon the streets of Paris having the appearance of the so popular variety known as blood oranges. The imitation is so skilfully done as to deceive any one not previously informed. Upon careful examination, however, one discovers the presence of a dye-stuff upon the surface in the cells of the cuticle. In some places the color is concentrated enough to appear as dark red points. The color proves to be Biberich red or Rocellin, which is a non-poisonous nitro-derivative of an amidoazobenzole.

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[1] Experiment Station Bulletin, No. 9, United States Department Agriculture, 1892.

[2] New Jersey State Dairy Commission Report upon "The Preservation of Milk," 1892.

[3] Ann. de Chem. et de Phys., xxv, [6] 145.

[4] Jour. Pharm. Chem., 1892, p. 537.

HYGIENIC EFFECTS OF SPRAYING FRUITS FOR INSECT PESTS AND FUNGOUS DISEASES.[5]

A case of fatal poisoning from such a use of the arsenical compounds, Paris green and London purple, has never been substantiated. The true danger lies in having them in bulk about the farm.

Their use against the Colorado potato beetle was at first much opposed on account of supposed danger. Recently the sale of American apples in England has been injuriously affected on account of the practice of spraying the trees. Dr. Wm. McMurtrie, formerly chemist of the United States Department of Agriculture, has shown that even when they were used in such large quantities as to kill the plants themselves, yet the most rigorous chemical analysis could not detect any arsenic in the plants. These results were confirmed at the Michigan Agricultural College. Experiments made at the Colorado Agricultural Experiment Station, showed that even when dusted upon cabbages in such quantities as would kill all worms within a day or two, an adult would need to eat some twenty-eight heads of cabbage in order to consume a poisonous dose of arsenic, provided none of the arsenic was removed in the process of cooking.

As usually used for spraying apple-trees for the codling moth, of the strength of one pound in 200 gallons of water, one would need to consume several barrels of apples at a single meal in order to absorb a fatal dose. This would need to be done very soon after the spraying, and before it had been washed off by rain. When examined fifteen days after spraying hardly the minutest trace could be discovered.

Likewise of the four copper compounds used, the Bordeaux mixture, the ammoniacal solution of copper sulphate, the eau céleste, and its modified form, many vague and misleading statements as to their danger have appeared. Every one, however, who is familiar with the situation, understands that they are simply efforts on the part of selfish competitors to cripple the legitimate trade of more energetic and wide-awake rivals. Not a single authentic case of poisoning, so far as the United States Department of Agriculture can learn, has been brought to light. It is true that a few individuals have claimed that they were made sick from eating sprayed fruit, but in all such cases careful investigations have revealed that claims of this kind were absolutely without foundation.

Analyses have been made of grapes intelligently sprayed in France, Germany, America, and other countries have shown that they rarely contained more than 5 parts of copper in a million, the average being 2.5 to 3 parts. On this basis one might eat from 300 to 500 pounds of sprayed grapes per day without fear of ill effects from the copper. Grapes which had never been sprayed at all were sometimes found to contain 2 parts of copper in a million parts, these but slightly less than the average sprayed fruit. The American wheat has been found to contain 4 to 10 parts per million of copper, with an average of 7.2 parts. There was, therefore, over ten tons of copper in the wheat exported from the United States in 1890. Beef liver contains from 56 to 58, sheep from 35 to 41 parts, while chocolate has been found to contain as much 125 parts of copper in a million.

COPPER IN PRESERVED PEARS.[6]

A royal ordinance lately issued by the Italian ministry in connection with the laws relating to the use of colors in food and condiments, admits of the presence of copper in preserved pears, provided that it does not exceed the limit of 100 parts in the million.

Professor Lehman[7] of Würzburg, before the International Congress of Hygiene, at London, asserted that it had not been proved by a single well observed case that copper salts, up to, say 150 to 200 milligrammes of copper entering the organism of a healthy adult at one time, if well diluted in the course of eating and drinking, could cause a disturbance in health worthy of any remark. Not a single copper salt which was not combined with an acid, which was itself poisonous, had been proven to have any specific poisonous qualities. Acute copper poisoning had, however, frequently happened through the use of copper vessels containing verdigris. In no case recorded of severe copper poisoning, so-called, through the use of copper vessels, had it been shown that anything like the amount of copper found necessary to injure the organism had been taken. Cases were attributed to copper merely because no other poison could be found. Ptomaines and toxalbumins were certainly often the true cause of the trouble. In other cases it had been shown that no reason existed for regarding the small quantities, often mere traces of copper, which were found, as the cause of death. From larger quantities than could be taken without being noticed to any extent by the senses, vomiting and purging might occur, but hardly anything more serious. He was, however, in favor of entirely forbidding the useless addition of copper to vegetables on account of possible injury where quantities of real consequence had been used.

Mestre in his report to the Committee of Hygiene in France, made in 1890, showed that the copper in preserved pears is equalled or excelled in rye, wheat, corn, potatoes and other natural food.

BEVERAGES CHARGED WITH GAS FROM BREWERIES.[8]

In round numbers, about ten thousand million pounds of beer was produced in England last year. This of the average strength of 5 per cent. alcohol, would in its fermentation have liberated half a thousand million pounds of carbonic acid gas, measuring twenty-five thousand million gallons, enough to fill a tank one mile square and one hundred and twenty feet high. It is now proposed to save and utilize this immense amount of gas. It has now already been so done at Guinness's brewery in Dublin. It can be liquefied at an expense of probably less than half a cent per pound, while the gas as usually produced in soda water works costs about sixteen times as much, and is of an inferior quality to that from beer.

(To be continued.)

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[5] Farmer's Bulletin, No. 7, United States Department of Agriculture, 1892.

[6] Zeitschrift f. Nahrungs Untersuchung, Hygien. und Waarenkunde, 1892, p. 269.

[7] Pharm. Jour. and Transact., 1891, pp. 91, 244.

[8] Brewer's Guardian, July 21, 1891.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting May 7, 1892.

Dr. C. R. Burr read by invitation on

SPINAL BIRTH PALSIES, A STUDY OF NINE CASES OF OBSTETRIC PARALYSIS.[1]

Dr. S. L. Abbot wished to express his appreciation of the paper and the correctness of the reasoning.

Dr. A. Worcester was particularly interested in the prognosis of the cases. In his own practice one child lost the power in the left arm following extraction by version. Faradism was used for two or three years without any improvement, the arm hanging helpless. At the end of that time he was surprised to find a slight gain in power, and, the faradism being persisted in, complete recovery took place.

Dr. C. W. Townsend said that it was curious that we did not see more cases of this trouble, and that notwithstanding the numerous instances in which the child received very rough handling at birth, the number of cases of obstetrical paralysis remains very small. He was struck by the fact that two children in one family were affected, which would seem to point to a predisposition, possibly inherited, to this affection.

Dr. C. R. Burr in closing, said that the mental condition was perfectly good in these cases. He did not test for the reaction of degeneration, for it was impossible to get satisfactory results in young children, owing to their voluntary movements and struggling.

Dr. C. W. Townsend read

ON THE MODIFICATION OF LABOR DUE TO EXTREME MACERATION OF THE FŒTUS.[2]

Dr. Edw. Reynolds said he had noticed this modification, which, however, as the reader had said was not invariably present. In one case he had seen, the fœtus was so macerated as to flatten out like a loosely filled bag. In this case the fœtus slipped out, while the patient was walking about.

Dr. C. W. Townsend said that he might add that all his cases reported made normal recoveries. It was often thought that there was more danger of septicæmia after the delivery of a macerated child. This is not so except in the rare instances where air had obtained access to the child in utero and actual putrefaction of the fœtus had begun. A "macerated" fœtus is one that is simply softened in aseptic fluids, and is not therefore any more liable to cause septicæmia than a living fœtus.

Dr. A. Worcester reported orally

A CASE OF PUERPERAL PERITONITIS TREATED BY WASHING OUT THE PERITONEUM.

It was decided to reserve the report of this case and the general discussion which followed, to a future meeting when the whole subject could be considered at length.

A daily paper thinks that victims of hay fever among the population who inhabit the vicinity of the Charles River are to be congratulated upon having temporarily lost their sense of smell.

AMERICAN NEUROLOGICAL ASSOCIATION.

(Concluded from No. 9, page 222.)

Eighteenth Annual Meeting, held in New York, June 22, 23 and 24, 1892, the President, Dr. C. L. Dana, in the Chair.

A CASE OF HUNTINGTON'S CHOREA; ALSO ONE OF CONGENITAL HUNTINGTON'S CHOREA, THE FIRST ON RECORD.

Dr. L. C. Gray, of New York, presented a man suffering from alleged hereditary Huntington's chorea. The disease had manifested itself in the same family for many generations. The movements and progressive muscular tremors had appeared in this case when the patient had reached the age of forty-five years. The man belonged to some branch of the Stamford County family. The speaker did not consider the swaying and dancing movements in this case those of chorea.

Dr. Gray then showed a case in a child, which he considered was one of congenital Huntington's chorea. There had been no similar trouble in other members of the child's family, and the general history was negative. The choreic movements had been noticed immediately after birth. The infant was a seven-months' child. This disease showed itself generally between the ages of thirty and fifty, and this was the youngest case known to the speaker upon record.

Dr. J. H. Lloyd thought that the so-called Huntington's chorea, which was clinically very similar to ordinary chorea, was dependent upon a different pathology. He had observed in Philadelphia a woman of eighty with senile chorea. There was always an associated mental failure in those forms of adult chorea.

Dr. Sinkler said that a Dr. Stevens, of South Carolina, had reported having under his care a family in which there had been cases of chorea for several generations. The same observer had reported two cases in young adults in whom the choreic movements had commenced in infancy, before the end of the first year of age. The case before them was certainly different from ordinary chorea, and had probably begun a spinal disease. It was much more like spinal chorea as reported.

Dr. Collins reported having observed the case of a child of eleven, in whom the movements, which dated from birth, were more characteristic than in Dr. Gray's case. In the patient before them the lesion was probably one of the medullary areas, and the choreic movements were associated with lack of development high up in these areas.

The President presented a case of hereditary chorea in a man, a native of Scotland, in whose family the disease had appeared for four or five generations. The speaker was presenting this case to show the effect of trephining. The temporary relief afforded by the operation in general paresis had suggested the probability of some such result in this case.

Dr. Gray said that autopsies would not substantiate Dr. Sinkler's views as to the spinal origin of this disease. There were only one or two cases in which spinal degeneration had been noticed in the form of secondary degeneration of the lateral columns. The lesions had been in the cerebrum, in the motor tract.

Dr. E. C. Spitzka, of New York, made a few general remarks on

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[1] See page 235 of the Journal.

[2] See page 238 of the Journal.

THE TREATMENT OF SYPHILITIC NERVOUS AFFECTIONS.

The speaker was surprised to find that authorities on myelitis and other organic spinal disorders had not recognized the clinical difference between gummatous and acute vascular syphilitic affections of the spinal cord on the one hand, and tabes dorsalis on the other; nor the difference between a mental disorder rapidly developed in connection with specific and demonstrable syphilitic lesions, and typical paretic dementia. There were two special diseases of the nervous centres which had more or less connection with syphilis. For instance, in locomotor ataxia, we know how frequently a history of syphilis was in the etiology of this disease; but the connection was not of the same kind as was found between the secondary and the primary lesions of syphilis. The speaker also had no difficulty in recognizing the existence of dementia due to syphilis, which was not true paretic dementia. Empirically, he stated that the more rapidly a central nervous syphilitic lesion was developed, the more rapidly fatal or radically curable it was. These cases exhibited the extremes both as to rapid development, shortness of duration and intensity of manifestation. The more slowly developed disorders attributable to constitutional syphilis were amenable to carefully instituted antisyphilitic treatment in their early phases. If an established sclerosis be affected at all by the iodides or mercury, it was no more susceptible in syphilitic than in non-syphilitic cases. In cases of paretic dementia with a syphilitic etiology, either coincident or remote from the infection, the diminished resisting power of the individual materially influenced the prognosis, and, while it was extremely rare to see a case arrested in its progress by antisyphilitic treatment, and exceptionally to be able to verify a supposed radical cure, still a material difference could be recognized between those cases in which the syphilitic etiology was wanting. Finally, the later the outbreak of nervous sequalæ, the less useful the iodides and the more useful mercurial preparations and the associated baths. An interrupted plan of treatment covering a long period of time was more applicable to late cases than the energetic single course.

DR. THEO. H. KELLOGG, of Flushing, read a paper on

THE TOXIC ORIGIN OF INSANITY.

Twenty-five years ago comparatively few cases of insanity were recognized to be of toxic origin. Modern research and clinical observation on the part of many specialists in nervous and mental disorders had established the fact that a considerable percentage of all mental disorders could be said to have a toxic etiology. Whenever a poison entered the human system, and though its presence directly or indirectly caused prolonged derangement of the mental functions, it was but reasonable to call the insanity toxic, and to regard the deleterious substance as the exciting cause of the disease. It was true of this exciting cause as of all others, that it would act only in cases having a native instability of nervous centre. The toxic agent might be vegetable, animal or mineral. It might be generated as an organic virus in the bodies of others, or it might originate through metabolic tissue-changes in the patient himself, as in the auto-intoxications. The poisonous substance might gain access to the system through the alimentary canal, by the respiratory tracts, or through the cutaneous surface, and it might act in direct affinity on the cerebro-spinal centres, or the sympathetic nervous system, or through pathological changes which it produced in the blood, or in the internal organs. Space would not permit a description of the many ways in which the poisonous substances actually found their way into the system. The speaker simply referred to the more common means of entrance as in adulterated food, impure water supply, and the numberless exposures to noxious agents through special occupations. It was of interest to note that the action of these agents was often most persistent and continuous long after the exposure, and that the variation in effects of the same agent in different individuals was very great. This individual idiosyncrasy was well illustrated in the instance of alcohol, which by some was borne in enormous quantities, while in others the smallest amount would derange mental action. Most of the toxic agents might start a long train of psychic disturbances, and either set of symptoms might predominate or alternate with the other. After dwelling briefly upon the various toxic agents most frequently met with, the speaker touched upon gout and lithæmia and their relation to psychic disturbances. Finally he referred to the auto-intoxicants which might cause mental disorders. The putrefactive alkaloids supposed to be formed by the action of bacteria on organic matter and known as ptomaines, or of those basic substances which resulted from metabolic changes in the bodily tissues, and which were called leucomaines. The main point was that these toxic substances might cause mental disease. It had long been known to physiologists that certain excretions contained substances poisonous to the organisms excreting them, and it was not a matter of surprise that autogenous poisons should be found in the excretions of the human body. The albumoses were among the most powerful autogenous poisons, and they had been found in the urine in cases of insanity. A number of writers might be cited to sustain the view that autogenous poisons entered the circulation and acted directly on the central nervous centres with sufficient toxic force to produce mental disorders. It was to be hoped that the day was not far distant when these poisonous alkaloids would be isolated and studied as to their physiological effects and as to their antidotes, so that at the same time that mental derangement from a special toxic agent was diagnosed, the antidotal remedy for the disease might be suggested. The speaker's object in presenting the paper was not so much to offer original material as to call for an expression of skilled opinion on this important subject.

DR. TOMLINSON said that he had been very much interested in what Dr. Kellogg had said, and heartily agreed with the view as to the influence of toxic causes in the production of insanity. He wanted, however, to call attention to one point not mentioned by the writer of the paper, and that was, that a toxic influence could not produce insanity of itself, but if produced there must have been a pre-existing instability of the nervous organization. The instability might be hereditary or acquired. The heredity did not necessarily have to be of insanity in parents or near relatives, but the instability might be due to any constitutional condition in the parents acting upon the child, or it might be acquired as the result of disease or accident in early life by the individual. Besides, he looked upon insanity resulting from the misuse of narcotics and alcohol as manifestations of defective nervous organization, exaggerated by the toxic influences their substances had upon the organism. In auto-infection the same conditions must necessarily exist, else why did not auto-infection more often cause insanity?

Dr. Bannister said that he perhaps had not fully apprehended Dr. Tomlinson's definition, but he understood him to say that all delusions were due to prior hallucinations. It seemed to him that the delusions of the insane were largely due to the characteristic self-feeling of the insane, and that they might be started by an idea, a wish, or a suspicion, without anything in the nature of a veritable hallucination having preceded them.

A STUDY ON THE SENSORY AND SENSORY-MOTOR DISTURBANCES ASSOCIATED WITH INSANITY, FROM A BIOLOGICAL AND PHYSIOLOGICAL STAND-POINT.

Dr. H. A. Tomlinson, of St. Peter, read a paper on this subject.

To study understandingly the nature of sensory and motor disturbances in insanity, it became necessary to erect a pathological framework, into which the various manifestations could be fitted more or less accurately; and as the absence of definite lesions in most cases left us no tangible pathological entity upon which to base our deductions, it became necessary to formulate an hypothesis, to explain the functional disturbance which originated and accompanied the perverted and excessive sensory and motor activity in these cases. This apparent absence of definite anatomical change the speaker believed to be inherent in the conditions which gave rise to insanity, in the fact that the majority of cases of insanity, though furnishing widely different clinical pictures during the earlier manifestations of disease, existed in terminal dementia for a sufficient length of time before death to obscure any definite pre-existing lesion. Each nervous cell was endowed with a definite amount of energy, or, in physiological terms, a limited amount of irritability and capacity for re-constitution. In a normal nervous system, this potentiality would be equal in all parts; but if, as was usually the case, the individual had some imperfection of development, some parts of the mechanism would have a lesser potentiality than others and would be, therefore, relatively weaker, and in a condition to succumb to a smaller strain. On account of the dual function of the brain, that was the control of somatic and mental life, an hereditary weakness of that part of the nervous system controlling somatic activities, would result in a relatively lower potentiality in the nerve cells involved. The converse of this would obtain, if the lesser potentiality involved that part of the brain concerned in mental functioning. Again, in the progress of development, the environment and experiences of the individual, governed by the laws of organic development, would further affect potentiality of the nerve cell, both generally and relatively; so that all activities would be equally potent. In others there would be loss of some potentiality and a consequent lessened capacity for re-constitution.

Taking then, an individual who from hereditary or acquired causes, had a relatively imperfect nervous structure, we would expect to find, as we did, that at times of special strain, such as the advent of puberty, the exigencies of social life or the climateric, they would display some signs of disturbance of the normal definiteness and uniformity of the activities of the nervous mechanism. All of the sensory and motor symptoms, produced permanently by pressure or gross lesion of the brain and cord, were produced temporarily by cell irritation or exhaustion. By their gradual devolution they showed the transition from the complex and heterogeneous to the simple and homogeneous, as in the more or less perfectly coördinated motor expressions of hysteria, through the various violent motor discharges occurring in mania, to the automatic associated movements present in dementia; or the tremor and ataxia of manical exhaustion, through the gradually increasing incoördination and paresis of alcoholic or syphilitic degeneration, to the complete motor abeyance seen in the latter stages of these diseases and general paralysis. If the hypothesis was tenable, the deductions followed that the cerebral cortex was the originator of all the activities of the organism. Those manifested automatically by the spinal centres, which we found in the reflex mechanism, were the result of the division of labor caused by evolution, and represented the development from the simple and lowly organized to the complex and highly organized. These activities as they became organized, also became more and more uniform and persistent, until without the intervention of active consciousness, they responded definitely to external impressions; leaving to the active consciousness the cognition, recognition and relation of the constantly recurring new external impressions. It followed that any breach in the integrity of the cortical function, would produce disturbance of the uniformity and definiteness of its activities, while the reflex mechanism, subject to the same source of disturbance would react irregularly, giving rise to centrifugally excited activities without correspondence to external stimuli.

For convenience of study, the sensory and motor disturbances associated with insanity might be arranged as follows:

Sensory: disturbance of general sensation (including anæsthesia, analgesia, paræsthesia and disturbed muscular sense), disturbance of special senses (including auditory, visual, olfactory, gustatory and tactual hallucination), illusions (manifested by associated perversions), and lastly, visceral hallucination.

Motor disturbance: tremor (local or general), automatic associated movements, paresis and paralysis (involving special muscular groups or general muscular function), vaso-motor disturbance, spasm, convulsion.

Analysis of these different forms of disturbed functional activity, seemed to lead inevitably to the conclusion that, even in their most complex manifestations, they were simply the outcome of increased or decreased irritability in the functional nerve cell. The complexity depending upon the number of functional groups associated, while they were manifested in their simplest form by the general involvement of the cerebro-spinal mass.

As a summary of the arguments based on his hypothesis, the author thought that the following deductions were logical and warranted. The application of the theory of evolution to the study of the development of the nervous system, and the normal manifestation of its activities, furnished the best and most satisfactory basis for the study of the hereditary and acquired imperfections in its structure, with the resulting abnormal manifestation of functional activity, both sensory and motor; as well as the influence of the environment of the individual in determining the nature of the perversion.

In conclusion, he ventured the opinion that it was in the direction which the theory of evolution led, that we must look for future progress in the study of insanity and its associated disturbances, especially when its prevention and cure were the objects sought, and we must look to biology and physiology rather than to pathology for our guide in these studies.

Dr. Thomas J. Mays, of Philadelphia, read a paper on

PHTHISIS IN ITS RELATION TO INSANITY.

All observers, so far as the speaker was aware, were agreed in the opinion that the insanity was a precursor of the phthisical affection among the insane. This explained why, as Clouston remarked, insanity was not more frequently found in hospitals for pulmonary consumption. Not only was phthisis more common among the insane than it was among the general population, but facts showed that this disease had a predilection for certain forms of insanity. Thus, it was more likely to occur in the depressed than in the exalted types of insanity. Clouston says that this was especially true of melancholia when combined with the monomania of suspicion, and that sooner or later nearly all these cases die of pulmonary phthisis. The speaker's own observation led him to believe that general paralysis or paretic dementia was not infrequently associated with phthisis. The most superficial examination of mortality-statistics made it clear that the human constitution was more vulnerable to phthisis at certain periods of life than others, although it was true that those who inherit the disease died three years earlier than those who acquired it. This was true whether the disease affected the lungs, the brain, the bones or any other portion of the body. As to the influence of heredity in the causation of pulmonary consumption and insanity, it had been recognized since the days of Moreau that the neurotic tendency bred pulmonary consumption in the offspring. Although asthma was a well-recognized disease, its life history had not been investigated with the thoroughness that its importance demanded. This was particularly true with regard to the tendency through which it produced death.

The speaker thought that the facts tended to demonstrate that asthma was closely associated with consumption on the one hand, and on the other that asthma was closely related to insanity. Of all the nervous diseases none was more frequently associated with pulmonary consumption than idiocy. Indeed, this intimacy was so strongly maintained that one was tempted to be sceptical until the statistics on the subject were fully examined. An interpretation of such data, was that pulmonary phthisis and insanity certainly belonged to the same family group of diseases. Notwithstanding the great advance in the modern study of the neuroses, the pathologic relationship between the lungs and their nerve supply had been practically ignored. The lungs were innervated by the largest and most important nerves in the body; yet strange to say, nearly all of the diseases incidental to these organs were at present attributed to the influence of irritants and excitants introduced from without, and the possibility that the fault might reside in this nerve did not even receive serious consideration.

The foregoing facts, figure and inductions established, the speaker thought, the truth of the proposition that the link that bound pulmonary phthisis to insanity and to other neuroses was a disease of the vagi. This connection furnished a key to the problem why pulmonary phthisis, a developmental disease, should occur in organs that underwent no development at the time of the greatest prevalence of the disease. It also showed why asthma should naturally be transformed into pulmonary phthisis; it gave us the reason why this disease was at least three times as common among the insane as among the sane; and why it was about eight or ten times as prevalent among families burdened with either idiocy or hysteria in some of their offspring, as in those not so burdened. Indeed, this was what the theory predicted and demanded. It did even more than this. It explained why idiots died of pulmonary phthisis ten years earlier than healthy persons. This was accounted for by the fact that a depraved brain and nervous system such as obtained among this class of unfortunates offered less resistance to the disease than a healthy brain and nervous system. It offered, at least, a partial solution to the question why pulmonary phthisis was more prone to show itself among the insane, than was insanity to show itself among the phthisical. Insanity was an affection of the highest nerve centres, and pulmonary phthisis, if this was granted, was an affection of the respiratory, and hence of the lower centres. Finally, that in genesis and in nature, pulmonary phthisis was so closely related to insanity and to other neuroses that it might be regarded as one of the branches of the family tree to which they belonged.

A CASE OF AKINESIA ALGERA.

Dr. J. J. Putnam, of Boston, described the patients suffering with this condition as experiencing severe pain during or after use of the muscles. Patients were all neurasthenic. He had a case many years ago for which he had always desired to find some category and to report when he found such category. He had supposed the symptoms were an exaggeration of those common to nervous patients. The patient referred to, was, when seen by the speaker, a middle-aged man, and his trouble had existed since childhood, gradually increasing in severity. He had belonged to a family of nervous invalids. The symptom to which the speaker wished to call attention was excessive pain immediately following the use of the muscles. The man could not walk one-third of a mile without pain coming on upon cessation of exertion. This result was invariable. The pain was situated mainly in the legs, but if the arms were used he would suffer pain in them. There was no sign of any atrophic changes, the man was well formed, had a delicate skin and there was no other symptom present. The pain was diffused throughout the muscles of the thigh and below the knee. There was no tenderness.

CEPHALIC TETANUS.

Dr. J. J. Putnam also described a condition under this title, and which he said was rarely observed in this country.

The patient in question, after having five teeth filled, had been seized with stiffness of one side of the face and neck. This was followed by spasms so severe that the teeth were ground together. The spasm was continuous. The patient's temperature was 101° F. After some six or eight weeks the symptoms had passed away, but as they abated the opposite side had become involved, but in a less degree.

Recent Literature.

Leprosy and Vaccination. — By WILLIAM TEBB. London: E. W. Allen. 1891.

The Bird that Laid the Vaccination Egg. — By J. H. LEVY. London: P. S. King & Son. 1892.

These two pamphlets, recently issued in London, display the same illogical methods, which are characteristic of the opponents of vaccination.

In the first, the noted and sensational anti-vaccination writer, Mr. Tebb, states a few facts about the spread of leprosy, which no one is disposed to doubt. He also quotes the recent successful experiment of Dr. Arning, of the Sandwich Islands, in inoculating a condemned criminal with the *bacillus lepræ*, which may also be accepted as proven.

When the author, however, attempts in a following chapter to show that vaccination is one of the chief causes of the spread of leprosy, he ventures far beyond his depth. In quoting the so-called synchronicity between the extension of vaccination and the spread of leprosy, he omits any reference whatever to the fact that both vaccination and small-pox inoculation were entirely unknown during the middle ages when leprosy spread with its greatest rapidity throughout all Europe, and there were at least 15,000 leper hospitals in existence upon the Continent alone. He also avoids allusion to the fact that there are whole nations now living, in which millions of vaccinated people exist, among whom leprosy is almost utterly unknown.

Admitting, for the sake of argument only, the possibility of the transmission of the *bacillus lepræ* by means of vaccine lymph from a recently vaccinated leprous child, any physician who would use such lymph, or even lymph from a healthy child of leprous parentage, would be criminally liable for malpractice. The use of animal lymph from healthy heifers offers a practical solution of this question.

In the "Bird that Laid the Vaccination Egg," the author makes a labored attempt to detract from the merits of Jenner as a scientific observer. In his younger days Jenner, who had considerable taste for natural science, had made certain observations upon the habits of the cuckoo, which later observation proved to be partially incorrect. The same is true of the foremost naturalists in the world, and multitudes of such errors are to be found in the early writings of men of science. This, however, has no bearing whatever upon either the discovery or the efficiency of vaccination, since the history of nations during the past ninety years has demonstrated very clearly the utility of vaccination as a means of saving and prolonging human life.

THE DIGESTIBILITY OF VARIOUS KINDS OF CHEESE. — The digestibility of various kinds of cheese has been recently tested by a German chemist, who placed a variety of samples in fresh gastric juice. He found that Cheshire and Roquefort cheese took four hours to digest; Gorgonzola and Neufchatel took eight hours; and Brie and Swiss cheese occupied ten hours in the process.

THE BOSTON

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IS THERE ANY SPECIAL DIET APPROPRIATE FOR THE SEASONS OR FOR DIFFERENT KINDS OF WORK?

A WRITER in the *Popular Science Monthly*, for September, reviewing Dr. Davies's article entitled "Proper Diet for Hot Weather," and noticed in the JOURNAL on page 47, denies that our present knowledge of the physiology of nutrition warrants "any prescriptions of special food constituents for the assumed varying requirements of the system under different climatic conditions." It is the same with regard to different kinds of work.

He points out that the classification of food constituents into proteids or albumoids, fats and carbo-hydrates, is a convenient one for certain purposes, but it is now known that these groups of nutrients have not the specific functions that were formerly attributed to them. The assumption "that the foods that are converted into heat — that is, keep up the heat of the body — are starches, sugar and fat, and those that more particularly nourish the nervous and muscular system are the albumen and salts," is declared to be a survival of an obsolete theory of respiration; and tables giving the proximate composition of different articles of food are of little value in formulating diets for special purposes.

The law of conservation of energy is now recognized as a significant factor in all physiological processes, and it furnishes the only consistent explanation of the phenomena of animal heat. The energy used in the constructive processes is stored up as potential energy, as an essential condition or constituent of all organic substances, and on their disintegration in the processes of destructive metabolism, it is liberated in the form of heat — as in the digestion of foods and in the wear and tear of the tissues that are constantly taking place in all vital activities.

Animal heat is not produced by a combustion of certain food constituents that serve as fuel, but it is the result of the liberation of the stored energy of foods and tissues in the disintegrating processes they undergo in the system. Foster estimates the potential energy of food constituents as follows:

One gramme proteids equals	4,500 calorics.
One gramme fat equals	9,000 calorics.
One gramme carbo-hydrates equals .	4,000 calorics.

From this it appears that the starches and sugars which are included in the group of carbo-hydrates, contain less potential energy than the proteids, and the heat obtained from them is accordingly less. The inference that starch and sugar should be avoided in hot weather and largely replaced by lean meat, which consists in the main of proteids or albumoids, is therefore not warranted by the evidence in regard to their constitution.

Foster rightly argues, that, as a low temperature increases body-metabolism, more food is necessary in cold climates; and, since the increase in the metabolism appears to manifest itself chiefly in a greater discharge of carbon dioxide, and therefore, to be especially a carbon-metabolism, we might infer that the carbon elements of food should be especially increased. High temperature lowers metabolism, but the effects in this direction are much less clear than those of cold, and soon reach their limits; the bodily temperature is maintained constant under the influence of surrounding warmth not so much by diminished production as by increased loss. "We may infer from this that in hot climates, not less, but if anything, rather more food than in temperate climates is necessary in order to supply the perspiration needed for the greater evaporation and discharge of heat by the skin. Indeed, the evidence that the increase of metabolism provoked by cold bears exclusively on carbon constituents is so uncertain, that it may be doubted whether any change in the normal diet, beyond some increase in the whole, should be made to meet a cold climate. Similar reasons should lead one to infer that man in the hotter climate would maintain, on the whole, the same normal diet, the only change, perhaps, being to increase it slightly, possibly throwing the increase chiefly on the carbo-hydrates with the special view of favoring "perspiration."

Similar considerations lead to the conclusion that the diet which is good for the organism in comparative rest is good also for the organism in arduous work; that the diet normal for the former condition would need for the latter a limited total increase, but no striking change in its composition.

"The principle of such a conclusion with regard to muscular work may be applied with still greater confidence to nervous or mental work. The actual expenditure of energy in nervous work is relatively small, but the indirect influence on the economy is very great. The closeness and intricacy of the ties which bind all parts of the body together are very clearly shown by the well-known tendency of so-called brain-work to derange the digestive and metabolic activities of the body; and if there be any diet especially suited for intellectual labor, it is one directed not in any way toward the brain but entirely toward lightening the labors of and smoothing the way for such parts of the body as the stomach and the liver."

The writer in the *Monthly* concludes with the just remark that "individual peculiarities and inherited habits of the system are prominent factors in the processes of nutrition, and experience is a safer guide in regulating one's diet than any theories based on the chemical composition of foods."

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TREATMENT OF CHOLERA.

Professors Nothnagel and Kahler have, at the request of the Austrian Government, published some suggestions for the treatment of cholera.[1] Starting with the axiom that the incitor of the disease enters the digestive tract mostly through the mouth, and is most effectively destroyed by the undisturbed activity of the digestive apparatus, especially the stomach with its acid reacting secretions, it is recommended in the first place to avoid everything which is likely to destroy or diminish the motor or chemical function of the stomach. To these belong bodily and mental over-exertions, conditions in which the motor function of the stomach suffers and, through long retention of the ingesta, a gastric catarrh is induced; further, indigestible food, insufficiently or improperly prepared food, unaccustomed articles of diet, too rich meals and too much alcoholic fluids. The use of dilute hydrochloric acid (eight to ten drops in a quarter of a glass of boiled water) after meals, the relief of constipation by enemata of boiled water, and the careful treatment of already existing gastric or intestinal catarrh is advisable. Colds must be guarded against and attention given to general hygiene of the body (baths, exercise, sleep). Every diarrhœa must be treated as if it were a choleraic diarrhœa. The patient must be put to bed, if possible, after a warm bath or hot sitz bath, with warm compresses on the abdomen, the nourishment limited to barley broth; and tincture of opium with tea, rum or cognac given. If nausea or vomiting appears, carbonated, not alkaline, water is recommended. All drinking water must first be boiled. Before the patient is put to bed an energetic cold rubbing down is of value, but this should be supervised by the physician. Calomel comes into consideration only in the very beginning of the disease.

For the treatment of a well-established cholera attack the tannin enemata recommended by Cantani are best suited (½–2 litres of boiled water at the temperature of 39–40° C. in which 15–20 grammes of tannin is dissolved, is discharged into the intestine by high irrigation). This procedure is best suited to the premonitory stage, but can be of use in the fully developed algid stage. The tannin has a limiting action on the development of the comma bacillus but is also supposed to counteract and favor the quick elimination of the cholera poison from the blood.

In the stage of asphyxia, in order to counteract the thickness of the blood, hypodermic or intravenous injections may be used with advantage. For the first, two litres of distilled water are boiled for half an hour in a vessel, the mouth covered with cotton, six grammes of carbonate of soda and eight of chloride of soda dissolved in it and cooled to 40° C. This fluid is injected by means of a large hollow needle through a fold of skin in the abdominal wall into the cellular tissue. The skin is first to be made thoroughly antiseptic. Instead of a syringe a burette is connected with the needle by a rubber tube. The whole apparatus should be previously disinfected. In the course of a quarter to a half hour one and one-half litres of the solution can be introduced. The skin of the thigh or interscapular region may also be chosen for the injection, and the resulting swelling can be reduced by massage. If after the third injection the relief is transitory, intravenous injection is to be tried. For this the same solution can be used or a solution of five grammes sodium chloride, with ten sodium sulphate to 1,000 of water previously thoroughly filtered and sterilized as the other. In a quarter of an hour from two to two and one-half litres can be injected into a vein in the arm. The first appearance of the algid stage is the indication for these procedures. For stimulants, champagne, fermented mixtures, heavy wines with the addition of ten to twenty drops of ether, tea with brandy, subcutaneous injections of camphor in olive oil in the proportion of one to nine, warm baths, energetic and long-continued rubbing with alcohol, or with cloths dipped in ice-water, warmth to the extremities.

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[1] Münchener Medicinische Wochenschrift, August 16.

In case of muscular cramps, injections of morphine are useful. The treatment of the typhoidal condition often observed must depend upon the individual case. It is important to watch for and treat renal complications, and especially to bear in mind the necessity of maintaining the general nutrition.

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THE ARTIFICIAL PROTECTION OF ANIMALS AGAINST ASIATIC CHOLERA.

IN connection with the present development of a cholera epidemic the following by Prof. Brieger and Dr. Wassermann, appearing no later than August 4th, from the institute of infectious diseases in Berlin[1] will be of special interest.

In an article in the *Zeitschrift für Hygiene*, Brieger and Kitasato described a process by which they were able to render guinea-pigs resistant to the most virulent culture of Koch's cholera bacillus. This method consisted in the cultivation of the bacilli in the watery fluid expressed from very cellular organs, in particular the thymus glands of calves. Since then it has been their endeavor to prove their results and to find, if possible, a simpler method which would give a sure result.

Further investigations with the thymus fluid were first made. The cholera bacilli were allowed to grow in the thymus fluid for twenty-four hours, and then the culture-tube was heated for fifteen minutes at a temperature of 65° C., or ten minutes at 80° C. Afterwards the culture stood for twenty-four hours in the ice-chest, and was then ready for use. As a rule, the animals were given intraperitoneal injections of four cubic centimetres of this fluid on four succeeding days. Shortly after the injections, especially the first injection, the animals showed more or less signs of being unwell — which entirely disappeared by the next day. The temperature during this time was markedly lowered. In the light cases the animals reacted in three to five hours after the beginning of the treatment, with an increased temperature of about a degree. Then appeared severe general symptoms and the body temperature remained for several hours sub-normal. In spite of this, on the next day all the animals were entirely well. Repetition of the injection produced the same symptoms, but to a much less degree. Animals treated in this way were after the last injection, that is, on the fourth to fifth day after the first injection, entirely resistant to the cholera vibria, and they would bear without harm three times the dose which would prove deadly in twelve to fifteen hours, to an animal not so treated. After the injection of virulent bacilli, the temperature would first rise about a degree and then in the course of two or three hours fall two or three degrees. The control animals during the same time would completely collapse and lie quietly on their sides, and the temperature would fall about six degrees below normal. In short, these animals rapidly died while the animals that had been treated would by the next morning have entirely recovered.

The next endeavor was to find out what the minimum protective dose would be in order to make a guinea-pig resistant to a surely deadly dose of virulent cholera bacilli. As a result, it was found that a cubic centimetre of the above described fluid injected on two succeeding days, was sufficient to make an animal weighing three hundred to four hundred grammes entirely immune.

At the suggestion of Prof. Koch a simple and yet equally effective result was obtained as follows: The cholera vibria was cultivated in the ordinary pepton-bouillon and on the following day was warmed for fifteen minutes at a temperature of 65° C. The animals were then treated in the same manner as has already been described. Guinea-pigs so treated have been able to bear double fatal doses of cholera bacilli, while the control animals without exception died of cholera. The smallest dose of the heated bouillon culture which gave protection, was likewise two cubic centimetres. The protective working appeared forty-eight hours after the first injection, and remains effective after the lapse of two months. So that there are animals first treated on the 12th of May, 1892, and injected with virulent cholera bacilli on the 14th of May, which have remained entirely sound and well until July 6th, when they were again found resistant to a double deadly dose, the control animals dying before the next day, while the protected animals were well and so continued. In order to prove that it is not alone the heating which brings about the immunity, but the modification produced by the thymus nutrient media, cholera bacilli were added to a thymus extract which was then allowed to remain on ice for several days. With the fluid so prepared — never having been warmed — immunity was secured to the same extent as in the heated cultures, thus proving the author's previous assumption that the thymus fluid had specific action on the bacteria.

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[1] Deutsche medicinische Wochenschrift, August 4th.

At the last sitting of the Society of Biology in Paris, Gamaleïa reported that dogs were much more susceptible to the cholera infection than other animals generally used in the laboratory.[2] He had studied the effect of a very virulent culture of cholera bacilli on these animals, and arrived at the conclusion that the cholera of dogs is most analogous to that of man and is characterized by bloody or rice water stools and persistent vomiting.

Gamaleïa considers it of the greatest importance that dogs can be made immune very rapidly. An animal injected with a dose of cholera bacilli which is not sufficient to kill it, though sufficient to produce severe symptoms, such as collapse, vomiting and diarrhœa, was found on the *following day* to be resistant to the strongest quantity of the poison. A private letter of August 16th states that so sure are the investigators that immunity can be secured by vaccination in the manner stated above, that they are about to try to inoculate themselves.

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MEDICAL NOTES.

Cholera. — The reports from Europe during the past week do not show any material increase in the epidemic in Western Europe. A few more cities have reported isolated cases; but these cities are mostly seaports or in the vicinity of places already invaded. In Hamburg, which is the only city west of Russia in which a serious epidemic prevails, the number of cases was larger than during the previous week. Three steamships from Hamburg, the *Moravia*, the *Normannia* and the *Rugia* arrived in New York with cholera on board and a few cases have developed in quarantine since their arrival. The President has issued a proclamation, recommending a quarantine of twenty days for all vessels carrying steerage passengers. This proclamation cannot be considered as an absolute command because the Federal Government has not the right under the Constitution to regulate sanitary matters, except in so far as the individual States choose to allow it to interfere. The principal steamship companies have already begun to send cabin passengers and steerage passengers in different vessels, and have declined to book any more steerage passengers for the present.

The Cause of Chloroform Deaths.— At a recent meeting of the British Association for the Advancement of Science, the report of the committee which had been appointed to investigate this subject was presented by Professor Ramsay. While they could discover no impurity in the chloroform as originally purchased by the hospitals, they found that specimens which had been exposed for a long time to the action of light had developed a considerable quantity of carbonyl chloride; and almost all the samples examined were found to contain more or less of this product of decomposition. Professor Ramsay thinks that death from chloroform, when it is caused by impurities of the drug used, is due to asphyxia caused by spasm of the glottis arising from this impurity.

BOSTON.

Precautions against Cholera in Boston. — The City Board of Health are taking active measures to prevent the importation of cholera and to take charge of it should it appear. The Mayor has recommended a twenty-days' quarantine for all vessels carrying steerage passengers, sailing later than September 5th. Additional accommodations are being built on Gallop's Island; and the Board of Health are prepared to occupy other islands in the harbor should it be necessary. Other departments of the City Government are to be held in readiness to assist the Board of Health, and several buildings in the city are in condition to be made into temporary hospitals at short notice. All immigrants, on arrival at quarantine are, much to their surprise, given a bath; and their clothes and baggage are disinfected by steam. Orders have been issued to the police to enforce cleanliness in the city as far as possible.

Training-school at the Carney Hospital. — A training-school for nurses has been established in connection with the Carney Hospital. The course will be two years, and will be under the superintendence of Miss Emily A. Stoney. Seven nurses have already begun service.

NEW YORK.

Cholera. — As soon as the steamships now on their way to America have arrived the danger of further importation of cholera from Europe will be greatly diminished, as the managers of the various lines have announced their determination to take no more steerage passengers until the disease has disappeared. Great indignation is felt at the fact that the officers of the *Moravia* ordered or permitted the crew to throw into the harbor the soiled bedding of the steerage and other infected materials in large quantities. These have drifted ashore in the neighborhood of Coney Island, and may constitute a serious menace to both New York and Brooklyn. In such material as he was able to obtain, Dr. Byron has not been successful in demonstrating the presence of the cholera bacillus.

The Board of Health is preparing for an invasion of the pestilence. On August 30th a circular headed

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[2] Deutsche medicinische Wochenschrift, August 11, 1892.

“Prevention of Cholera Easier than Cure,” was issued for general distribution. On the same day a resolution was adopted by the Board to the effect that a requisition be made upon the Board of Estimate and Apportionment for the sum of $5,000, the amount necessary for the employment by the Department of fifty special medical inspectors for one month. This sum was at once appropriated, and on September 1st the corps of summer physicians who have been on duty during July and August were reappointed for this special service.

In view of the possible appearance of cholera in the city the officers of St. John's Guild have offered the use of their floating hospital to the Board of Health. This is a barge, 225 feet long and 45 feet wide, with two decks, the lower of which is enclosed, and fitted up with hospital appliances and facilities for cooking and bathing. The offer was at once accepted, and the Board of Estimate and Apportionment has appropriated $10,000 for the purpose of enclosing the upper decks and further equipping the barge. Should any cases occur they will at once be taken to the boat, which will be kept in the East River, off of East 16th Street. The lower part of the street will be closed, and thus complete isolation for the patients secured.

Mortality in July. — According to the official report of the State Board of Health there were 2,000 more deaths in the State in July of the present year than in July, 1891, and nearly 3,000 more than the average for July for seven years past. The average daily death-rate was 437, or three more than in January when influenza was epidemic. The deaths from diarrhœal diseases rose from 676 in June to 3,620, a larger number than previously reported for one month since the existence of the Board.

A Pavilion for Idiots. — An attractive pavilion for idiots, capable of accommodating fifty patients, was recently opened in connection with the Kings' County Hospital.

Miscellany.

ANÆMIA AND MOUNTAIN AIR.

The effect of rarefied air upon the body has been studied by different observers.[1] M. Paul Bert found that the blood of the llama, of South America, absorbed on an average twenty-five per cent. more oxygen than the blood of the herbivora of the plains. Müntz kept some rabbits upon the Pic du Midi for a year, after which time he found their blood much richer in the hæmoglobin than that of the rabbits kept for comparison on the lowlands. In order to prove that it was the rarefied air and not other conditions which produced this change, Regnard, in his laboratory, subjected a rabbit, enclosed under a bell-glass, to a continuous atmospheric depression, two bell-glasses being placed together so as to allow the rabbit to pass from one to the other when it became necessary to clean and disinfect his quarters. After living in an atmospheric depression corresponding to the height of 3,000 metres which is that of the Great St. Bernard, the rabbit was taken out. He was a little fatter than when he had been put in. It was found that his blood absorbed 25 c.c. of oxygen for every 100 c.c. of blood, while in the control rabbits kept under normal conditions it was only 17 c.c. These experiments suggest an explanation of the benefit often derived by anæmic and chlorotic patients by going to mountainous districts.

THE PREHENSILE FOOT OF THE EAST INDIANS.

Regnault[1] has made a study of this subject. In India the foot is used for many purposes besides walking, workmen are constantly seen using their feet as well as their hands at their trades. The articulation of the hip is so loose that an Indian often squats in such a position that his feet are not very far from his hands, with the knees on a level with the chest. He often keeps this position for hours.

The great toe is capable of considerable lateral movement from the second toe, so that the Indian can easily pick up articles from the ground with his feet. Although the movements of adduction and abduction and of elevation and depression are very extended there is no movement of opposition between the great and second toes. The author has made several tracings which show in some cases a very wide space between the great and second toes. This does not depend upon a simple divergence of the toes, but the base participates in it and it seems to go back to the metatarso-phalangeal articulation, so that in a few cases the two toes could not be brought together. This separation is by no means universal, in fact, it is only found in a minority. This separation adds to the prehensile dexterity of the foot, but is by no means essential, education playing a very important part. This prehensile foot is a pincers-foot and differs essentially from the foot of the monkey which has an opposable thumb. In spite of the fact that for several generations the foot has been used in India as a supplementary hand, it shows no tendency to an opposition of the great toe. Such an adaptation would, undoubtedly, be a great hindrance to walking and the foot of the monkey is for this reason much inferior to man's.

THE PEST OF FIELD-MICE IN THESSALY AND LŒFFLER'S SUCCESSFUL METHOD OF COMBATING IT.

“Science” of August 19th, contains an interesting editorial telling how field-mice which, in vast numbers, threatened entire destruction to the growing crops in the valley of Thessaly, were, after the failure of various means employed to destroy them, finally exterminated by Lœffler. Lœffler went with one of his assistants to Greece, taking with him cultures of the bacillus typhi murium which he had found very deadly to mice in Germany.

By experimenting on the mice in the laboratory he found them even more susceptible than those of Germany, both to inoculation and also to infection through the alimentary canal. Lœffler had found that the micro-organism which he was to use would grow very well in a decoction of oat and barley straw to which one per cent. of peptone and one-half per cent. of grape sugar had been added. So a large amount of this material was prepared and inoculated. Small pieces of bread were soaked in these cultures and distributed in the openings of the mice burrows. A number of mice were also inoculated and turned loose. As the mice eat the bodies of those of their number that die, the contagion would also be spread in this way. Nine days after these procedures, it was observed at several places that the mice had ceased their activity. Several burrows that were opened were found to be empty or to contain sick, dead or half-eaten mice. A number of sick and dead mice examined were found to show all the characteristic lesions of the typhoid fever of mice, and also the bacilli of this disease in their internal organs. Reports from other places subsequently received, were all satisfactory.

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[1] Lancet, August 13.

[1] Popular Science Monthly, August.

It should be said that bread soaked in the cultures as above mentioned can be eaten by man and various domestic animals with impunity. This is another triumph for the science of bacteriology and shows its great practical significance.

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A DOG WITHOUT A BRAIN.

Professor Goltz, of Strasbourg, has succeeded in keeping alive three dogs, after having removed the whole of the cerebral hemispheres.[1] One lived fifty-one days, the second ninety-two days, and the third was killed after living eighteen months in this condition. In all three dogs the diencephalon had been more or less injured by the operation. In the case of the third dog, after he had been without his brain for over a year, he could be aroused from deep sleep through the sensation of touch. If an attempt was made to take him out of his cage, he showed signs of anger, snarled, and barked in more or less normal manner. He walked around in his cage without falling, or, if he fell on a slippery surface, he got up again without assistance. These movements were particularly energetic when the animal was hungry. The hearing, although very dull, was preserved; and he could be waked out of sleep by a loud noise. In the same way, the sight, although nearly gone, was sufficient to perceive a bright light. He could not smell at all; but his taste was not destroyed, as was shown by his declining to eat meat strewed with quinine. He could eat and drink, that is, his tongue, jaw and pharynx moved like those of a normal dog; but food had to be put in his mouth, as he never made any attempt to get it for himself. There was entire absence of all those characteristics which are understood as intelligence, reflection or understanding, but he could not be considered as a mere reflex mechanism. He had as much perception as a new-born infant. He is uneasy when he is hungry, and appears satisfied after being fed. He becomes angry if he is waked from sleep or if he is pinched. The author believes that these experiments may modify many commonly accepted theories of the functions of the cerebral cortex.

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[1] Pflügers Arch, F. d. Ges. Physiol., Bd. 51, 7.

THERAPEUTIC NOTES.

Chloralamid[1] (chloral-formamide) is a new hypnotic obtained by the combination of chloral and the colorless, oily, liquid formamid — an organic compound allied to urea. Several authors are very enthusiastic over their results with it as a decided rival to chloral and sulphonal. Its best effects are produced in cases of idiopathic insomnia, cases where the insomnia is not due to extreme pain or excitement. Although it may succeed in some cases in overcoming slight pains, it cannot be classed as an anodyne. It induced a natural and refreshing sleep, and as a rule, is not followed by headache on waking the following morning. A sense of well-being is the result of the rest it affords. It is thought by some to be a deeper sleep than that produced by chloral. There have been some failures to produce sleep with it, but the percentage of such cases is small. Some Parisian and German observers claim that its action is exactly the same as chloralhydrate, if allowance be made for the smaller proportion of chloral anhydride in the chloralamid. It appears to possess the very happy property of counteracting the desire to micturate at night in senile cases. It occurs in colorless crystals, with a mild, slightly bitter taste, and without odor. It is soluble in about ten parts of cold water, and one should be cautious not to dissolve it in warm water, and also not to heat the solution after it is made, as it very readily decomposes.

Abdominal Massage.—Ivanoff suggests a modification of Sahli's method of abdominal massage. Instead of a cannon ball, he uses a hollow wooden or celoidin globe filled with shot poured in through a hole furnished with a stopper. The quantity of shot should vary with the patient's age, from one pound for a child of two years to four or five pounds for adults. The author has used this method successfully in many cases of obstinate chronic constipation in children. The ball is rolled up and down along the course of the colon for two or three minutes at a time, and this is repeated twice a day. The author expresses the opinion that this special form of massage will be found beneficial in quite a number of abdominal disorders.

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[1] Squibb's Ephemeris.

METEOROLOGICAL RECORD,

For the week ending August 27, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...21	29.91	71	78	65	83	57	70	N.W.	N.W.	9	10	F.	C.	
M..22	30.08	72	82	62	55	50	52	N.W.	N.	12	10	C.	C.	
T..23	30.25	65	70	60	65	80	72	N.E.	E.	10	9	C.	C.	
W.24	30.20	67	75	59	87	65	76	W.	S.	5	12	O.	C.	
T..25	29.91	68	73	64	78	95	86	S.E.	S.E	10	7	O.	O.	.02
F..26	29.99	60	62	59	92	97	91	N.E.	N.E.	20	34	R.	R.	.71
S..27	30.04	56	57	55	88	97	92	N.E.	N.E.	24	15	O.	R.	1.10
☞	30.05	66	71	61	78	77	77			13	14			2.61

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 27, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,827,396	726	329	28.56	8.68	18.48	3.36	1.96
Chicago	1,250,000	534	280	17.48	4.56	2.66	4.56	7.03
Philadelphia	1,092,168	472	228	27.30	9.03	18.48	3.76	2.52
Brooklyn	955,333	421	231	28.98	9.66	19.55	2.07	2.76
St. Louis	477,873	158	60	24.57	8.82	15.75	2.58	3.15
Boston	469,645	194	97	23.46	10.20	17.34	.61	2.55
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	305,000	75	31	37.99	13.33	10.64	—	1.33
Cleveland	281,353	126	70	37.13	3.95	26.86	2.37	7.90
Pittsburg	255,000	—	—	—	—	—	—	—
Milwaukee	234,440	—	—	—	—	—	—	—
Washington	230,360	—	—	—	—	—	—	—
Nashville	87,754	47	15	27.56	12.72	8.48	—	10.60
Charleston	56,048	—	—	—	—	—	—	—
Portland	40,000	13	4	22.07	7.69	15.38	7.69	—
Worcester	92,313	33	16	42.42	6.06	33.30	—	3.03
Lowell	82,455	41	22	26.84	12.20	21.96	2.44	2.44
Fall River	82,128	—	—	—	—	—	—	—
Cambridge	74,644	19	13	47.34	5.26	42.08	5.26	—
Lynn	60,809	19	8	42.08	10.52	26.30	5.26	—
Springfield	47,052	27	10	33.33	7.40	29.60	3.70	—
Lawrence	45,910	25	13	36.00	8.00	32.00	—	4.00
New Bedford	44,947	14	9	—	7.14	—	—	—
Holyoke	40,099	—	—	—	—	—	—	—
Salem	31,495	12	5	91.63	—	91.63	—	—
Haverhill	30,065	6	2	16.66	33.33	16.66	—	—
Chelsea	29,479	—	—	—	—	—	—	—
Fitchburg	27,444	8	2	25.00	—	25.00	—	—
Gloucester	26,805	5	3	—	—	—	—	—
Malden	26,783	3	3	66.66	—	66.66	—	—
Newton	26,498	8	3	—	—	—	—	—
Brockton	26,464	4	1	—	25.00	—	—	—
Taunton	26,464	16	6	25.00	18.75	25.00	—	—
Waltham	20,942	7	2	14.28	28.56	14.28	—	—
Pittsfield	18,294	3	0	—	—	—	—	—
Quincy	17,930	6	3	50.06	16.66	50.00	—	—
Northampton	15,684	6	4	66.66	16.66	—	—	—
Everett	14,745	4	4	50.00	25.00	50.00	—	—
Newburyport	14,031	4	2	50.00	—	50.00	—	—
Amesbury	13,561	3	2	66.66	33.33	66.66	—	—

Deaths reported 2,961: under five years of age 1,495; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 811, consumption 274, acute lung diseases 184, diarrhœal diseases 513, typhoid fever 108, diphtheria and croup 86, whooping-cough 40, scarlet fever 19, cerebro-spinal meningitis 15, malarial fever 15, measles 14, small-pox (New York) 1.

From whooping-cough New York 14, Brooklyn 9, Philadelphia 6, Chicago 5, Boston 2, Nashville, Cambridge, Lynn and Springfield 1 each. From scarlet fever Chicago 5, New York and Philadelphia 4 each, St. Louis 3, Boston 2, Brooklyn 1. From cerebro-spinal meningitis Chicago 5, New York 4, Worcester and Lynn 2 each, Philadelphia and Brooklyn 1 each. From malarial fever Brooklyn 7, Philadelphia and Nashville 3 each, New York 2. From measles New York 8, Philadelphia 3, Chicago 2, Brooklyn 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 20, 1892, TO AUGUST 26, 1892.

By direction of the acting Secretary of War, so much of paragraph 9, S. O. 194, August 18, 1892, A. G. O., as relates to change of station of **CAPTAIN LOUIS M. MAUS**, assistant surgeon, U. S. A., is suspended until further orders.

Leave of absence for one month to take effect on or about September 1, 1892, is granted **MAJOR PAUL R. BROWN**, surgeon, U. S. A. (Fort Supply, I. T.)

The leave of absence granted **MAJOR JOSEPH K. CORSON**, surgeon, U. S. A., is extended one month.

CAPTAIN WALTER REED, assistant surgeon, U. S. A., upon the arrival of **FIRST-LIEUT. CHARLES F. MASON**, assistant surgeon at Fort Snelling, Minn., will be relieved from duty at that station, and will report in person to the commanding general Department of Dakota, for duty as attending surgeon and examiner of recruits at the headquarters of that Department.

CAPTAIN RICHARD W. JOHNSON, assistant surgeon, U. S. A., is relieved from duty at Fort Bayard, N. Mex., and ordered to Fort Bowie, A. T., for duty at that station, relieving **FIRST-LIEUT. PHILIP G. WALES**, assistant surgeon. Lieut. Wales, on being relieved by Captain Johnson, is ordered to Fort Bayard, N. Mex., for duty at that station.

FIRST-LIEUT. PAUL SHILLOCK, assistant surgeon, U. S. A., now on temporary duty at San Carlos, A. T., is relieved from duty at Fort Grant, A. T., and assigned to permanent duty at San Carlos, A. T., relieving **FIRST-LIEUT. NATHAN S. JARVIS**, assistant surgeon. Lieut. Jarvis, on being relieved by Lieut. Shillock, is ordered to Fort Apache, A. T., for duty, relieving **CAPTAIN LOUIS M. MAUS**, assistant surgeon. Captain Maus, on being relieved by Lieut. Jarvis, is ordered to Whipple Barracks, A. T., for duty.

LIEUT.-COL. CHARLES R. GREENLEAF, Deputy Surgeon-General, now at Montpelier, Vt., will proceed to Plattsburgh Barracks, N. Y., on business connected with the medical department, and on completion thereof will return to Montpelier.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 3, 1892.

E. H. MARSTELLER, passed assistant surgeon, detached from Practice-ship "Constellation," and to the Naval Academy.

JAMES STOUGHTON, assistant surgeon, detached from Practice-ship "Constellation," and to wait orders.

W. F. ARNOLD, passed assistant surgeon, ordered to Naval Station, Port Royal, S. C.

S. H. GRIFFITH, passed assistant surgeon, detached from the U. S. S. "Jamestown," and to the U. S. S. "Constellation."

AN ARMY MEDICAL BOARD.

An Army Medical Board will be in session in New York City, N. Y., during October, 1892, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before October 1, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a Regular Medical College, as evidence of which, his Diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

C. SUTHERLAND, *Surgeon-General U. S. Army.*

RECENT DEATHS.

W. W. WILKINS, M.D., of Manchester, N. H., died September 1st, aged sixty-three. He graduated from the Vermont Medical College in 1855, and during the war served in the second and tenth New Hampshire Regiments.

JOHN J. REESE, M.D., of Philadelphia, died at Atlantic City, September 4th, aged seventy-four years. He graduated from the Medical Department of the University of Pennsylvania in 1839, and has been during his life a resident of Philadelphia. During the war he served as surgeon of Volunteers and was in charge of a hospital in Philadelphia. He was for some time professor of medical jurisprudence and toxicology in the University of Pennsylvania and physician to St. Joseph's Hospital and other institutions. He was widely known as an authority in legal medicine and as the author of a text-book and other works on this subject.

DR. LUDWIG BANDL, previously professor of gynecology in Vienna and in Prague, died September 2d.

BOOKS AND PAMPHLETS RECEIVED.

Second Annual Report of the Midwifery Dispensary, 314 Broome St., New York. 1892.

The Diseases of the Stomach. By Dr. C. A. Ewald, Professor of Medicine in the University of Berlin. Translated from the second German edition by Morris Manges, M.D. New York: D. Appleton & Co. 1892.

A Treatise on Hygiene and Public Health. Edited by Thomas Stevenson, M.D., F.R.C.P., Lecturer on Chemistry and on Medical Jurisprudence at Guy's Hospital, and Shirley F. Murphy, Medical Officer of Health to the County of London, assisted by about twenty-five contributors. Volume I. Philadelphia: P. Blakiston, Son & Co. 1892.

Original Articles.

THE NERVOUS AND MENTAL SEQUELÆ OF INFLUENZA.*

BY PHILIP COOMBS KNAPP, A.M., M.D., OF BOSTON,

Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System to Out-patients, Boston City Hospital.

One of the striking features of the recent epidemic of influenza was the predominance of symptoms referable to the nervous system. This predominance, to be sure, was no new thing. In the epidemic of 1580 in Germany some of the victims became violently insane and wandered over the hills in their delirium (Schweich [66]), and nervous symptoms have been prominent in every epidemic since. Comparative statistics are lacking to show whether the recent epidemic has been more prolific in nervous disorders than the epidemics of the past; but, in view of the greater vulnerability of the nervous system at the present day, as shown by many statistics, such an event is not improbable. Clouston [18] found neuro-muscular symptoms in ninety-seven per cent. of his cases. Taking the single symptom of headache, Stintzing and Weitemeyer [70] found that it was present in 335 patients out of 405, and Schultz [65] noted it in seventy-five per cent. of his patients. Such figures give some color to the hypothesis of Schmitz,[68] who claims that influenza is primarily a disease of the nervous system, and that the respiratory and circulatory symptoms are secondary.

It is not my purpose, however, to discuss the theories as to the nature of influenza, and I shall touch but briefly upon the nervous symptoms which may accompany the attack. Most of you have seen more of those than I, and my observations have had to do chiefly with the sequelæ of the disorder.

I hardly need to cite the common nervous symptoms of influenza itself; the profound exhaustion, the aching and pain in the head, the back, or the limbs, the extreme mental depression, the persistent insomnia, and many minor symptoms. In the severe cases we may find all these exaggerated, and in addition vertigo, delirium, a typhoidal condition, subsultus tendinum, convulsions, somnolence and coma,— the last, under the name of nona, giving rise to many alarming statements in the daily press. These last symptoms are fortunately rather rare, and are due, probably, to serious brain complications which will be touched upon later.

Influenza seems capable of exciting most forms of disease of the nervous system. I shall, therefore, consider the various classes of diseases in order, the diseases of the peripheral nerves, of the cord, of the brain, the neuroses, and the different forms of insanity.

Affections of the peripheral nerves are not uncommon. Mills [48] thinks that no single affection has been so common as neuritis,— a statement, however, which I am disposed to question,— and all forms of neuritis have been reported. Most commonly, apparently, the disturbance of the nerves takes the form of a severe and persistent neuralgia. Krehl [39] found neuralgia in about four per cent. of the cases, a percentage which Bidon [7] thinks too small. The neuralgia is apparently most frequently observed in the trigeminal, the intercostals, and the sciatic, but other nerves may be affected. In some cases herpes zoster has occurred. In addition to neuralgia cases of distinct neuritis have been reported. One case of mild neuritis of the ulnar nerve, which I saw, came on two weeks after an attack of influenza. Here the motor symptoms were most marked, and the neuritis was not severe enough to cause anæsthesia. Oculo-motor paralysis, especially paralysis of accommodation, has been reported by a number of observers,— Fukula,[25] Uhthoff,[72] Bergmeister,[6] Pflüger [54] and Goldflam.[27] The latter believed his case to be due to a polioencephalitis rather than to a neuritis. Curiously enough I had under my care at the outbreak of the epidemic a lady with rheumatic paralysis of the external rectus, who, during recovery, came down with influenza, without increasing the eye trouble. Pflüger,[54] Bergmeister,[6] Schöler [64] and Stöwer [71] have reported cases of optic neuritis or post-neuritic atrophy. A case of atrophy has come under my own observation, but as it was associated with other symptoms I shall speak of it later. Neuritis of almost any nerve may, in fact, be due to influenza.

A few cases of multiple neuritis have been reported (Homén,[32] Brosset,[10] Bruns,[11] Lojacono,[46] Mills [45]). Considering the frequency of influenza it is apparently much less common than is multiple neuritis after other acute infectious diseases, notably diphtheria. Several post-diphtheritic cases have come under my observation during my term of service at the City Hospital this spring, but I have not seen a single case of pronounced multiple neuritis from influenza in that time. I have seen two or three cases, however, where a slight tenderness of the nerve-trunks and a persistent tingling in the extremities without any paresis have led me to believe that there was a slight disturbance in the peripheral nerves. A woman, whom I had seen in several attacks of exacerbations of multiple alcoholic neuritis, had another outbreak after the influenza. She did not, however, come under my observation in this attack, but it is fair to suppose that the old cause, alcohol, had something to do with it, as she undoubtedly continued to indulge.

Affections of the spinal cord as a result of influenza are rare. Among the more frequent is myelitis of the anterior horns, which occasionally develops after the acute infectious diseases (Eisenlohr,[19] Drasche [17]). I have already cited Goldflam's kindred case of polioencephalitis. Determann [16] cites two cases of undoubted spinal disease without autopsy, in one of which he thinks that there was hæmorrhage, in the other meningitis. Bidon [7] and Fiessinger [28] report cases with the symptoms of meningitis. Herzog [31] reports two cases of spastic paraplegia. Feréol,[22] Laveran,[43] Bennett [5] and Foa [24] all cite cases of probable myelitis, and Mills [48] reports a case where bulbar paralysis developed soon after an attack of influenza. In cases of a gradual onset, however, it is a question whether disease may not have existed before. In a hospital patient, for example, there was an obscure history of disturbances of micturition and of sensation in the feet; after influenza this increased to actual paresis of the legs. Priester [57] and Kaumheimer [34] report cases of somnolence, nona, which they believe due to changes in the central gray matter of the medulla and pons. Müller [51] attributes a similar case to meningitis.

I have already spoken of some of the more severe cerebral symptoms which may attend the attack of influenza. Helweg[30] and D'Abundo[16] have found very pronounced congestion of the brain at the autopsy of several patients dying of influenza. This congestion may explain such symptoms, although we know too little of the symptomatology of cerebral congestion to speak definitely. Cerebral or cerebro-spinal meningitis has been noted by a few observers, Ayer,[1] Leyden,[45] Ewald,[21] Bäumler[8] and others, but the affection is less common than many imagine. Bristowe[9] reports several cases of probable abscess, one of which was confirmed by autopsy. With congestion it is not improbable that a diseased blood-vessel may rupture, giving rise to an ordinary attack of apoplexy, as in cases reported by Mills,[48] and Prentiss.[56] Erlenmeyer[20] reports a case of Jacksonian epilepsy, which he thinks due to capillary hæmorrhage. A possible similar case has come under my observation, which, from its unusual character, I will briefly report.

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* Read before the Medical Section of the Massachusetts Medical Society, 7 June, 1892, and recommended for publication by the Society.

A Polish Jew, thirty-four years of age, without any previous taint, was seized, after an attack of influenza which lasted two months, with a curious feeling in the right foot, as of a cramp. This soon passed off, but he had for two years similar attacks, with greater frequency and greater severity. A week before I saw him he fell unconscious in a fit. Since then he has been very nervous, emotional and apprehensive. In the attacks, as I saw them, he groans, complains much of his foot, but it is not rigid and there is no spasm in it. Nothing could be found abnormal during his attack, and physical examination was negative. The attacks, however, have diminished in frequency and severity under bromide.

Cases of general degenerative disease of the central nervous system are rare from this cause, and we can seldom be safe in ascribing them to influenza. I have seen one case, referred to me by Dr. Wadsworth, in which influenza was the only cause that could be ascertained. A man of thirty, with no history of trauma, syphilis, or excess in alcohol, but who had suffered from headache, had influenza two years ago. Since that time he has noted that his general strength has failed, that he has lost twenty pounds, and that his vision is growing very poor. His headaches are much fewer. He had much vertigo and tinnitus, and his hearing had failed. He was nervous and irritable. His bowels were obstinately constipated, and his digestion was poor. He had a constant desire to micturate, but it is hard to start the stream, and his control is poor. The sexual power is much diminished. He has a tired feeling, his legs feel prickly, the right hip aches, and he feels often as if some one had hit him sharply back of the knees. Examination revealed optic atrophy, slight nystagmus on lateral movements, some uncertainty in using his hands, a rapid pulse (110), and a diminution of the skin reflexes on the right side. The knee-jerks were normal. Motion and sensation were not impaired. The pupils were equal and reacted normally.

In few instances, too, vaso-motor and trophic disturbances have developed. Blake[8] has spoken of certain rather well-marked vaso-motor disturbances in the ear. Krause[88] and Bidon[7] report cases of swelling due, as they think, to vaso-motor disturbances, and cases of zoster and acute bed-sores have also been attributed to the epidemic. Mills[48] found a myxœdemoid condition in one patient. Lojacono[46] reports a case of exophthalmic goitre. Various circulatory and respiratory troubles, angina pectoris, palpitation, etc., have been attributed to nervous derangements.

It is, however, with the neuroses that influenza has the greatest influence. Bidon,[7] Van Deventer[73] and Grasset[28] report various cases of hysteria following influenza, but, although I have seen patients who were emotionally unstable, hysterical in common parlance, I have not seen grand hysteria following influenza. This is to be expected considering the rarity of grand hysteria in this country. In three cases of chorea there had been a previous attack of influenza, but the causal influence of the disease seems doubtful. Villard[74] and Eichhorst,[18] however, report cases where chorea followed close upon the epidemic disease. Van Deventer[73] and Landgraf[42] report cases of epilepsy. Here we must, as in so many other cases, be very sceptical, for we can seldom exclude the possibility of previous petit mal or nocturnal attacks.

The chief effect of influenza upon the nervous system is the production of that condition which we term neurasthenia. Under this heading may be grouped a vast number of symptoms of various sorts due to unknown conditions of the nervous system. Many of them, it is true, may be referred to exhaustion or asthenia. Many of us have had personal experience of that condition of prostration after influenza when the grasshopper became a burden. In many cases, after a little, the victim has been able to attend to the routine of daily work, but it was done with increased effort, new undertakings appeared formidable, and any pretext to shirk them was readily seized. Slight mental or physical effort produced unusual fatigue. In more marked instances there was a condition of hypochondria, and slight disturbances produced apprehension of some impending disease; mental irritability and depression have been common. Headache, insomnia, and nervous dyspepsia have been prevalent. The capacity for mental and physical labor has been diminished, or if it could still be done, it was followed, as I have said, by profound and unusual exhaustion. In my own experience, for example, I found that, three months after a very slight attack of influenza, although I could still work as rapidly and apparently as easily if the pressure were great enough, if the work were kept up until one or two o'clock in the morning sleep was disturbed.

It is hardly necessary to cite the various writers who have noted the neurasthenic conditions. A case or two from my own observations will suffice to show the common condition.

An old man worked for a week through a mild attack of influenza. After it he became very nervous, he had pain in the side and palpitation, his appetite and digestion failed, he had vertigo, he felt weak and miserable, and complained of persistent insomnia. Physical examination was negative. He slept some under sulfonal, but convalescence was slow.

A young married woman, naturally nervous, whom I saw last February, had influenza two years ago. Ever since then she has been weak and more nervous. She has some headache and a little indigestion, and complains much of soreness and pain in the chest and back, and darting pains in the arms and legs. There were various hyperalgesic spots on the trunk. She had a good appetite and slept well. There were no disturbances of motion or sensation, the reflex and pupils were normal, and an examination of the chest revealed nothing but a rapid action of the heart. She improved quite rapidly under treatment.

A lawyer, aged fifty, had begun to get nervous under very hard work. Then he had influenza, and after it had some very important and difficult work on his hands, working late at night. After a fortnight he had swimming in the head, vertigo, and a "paralyzed" feeling in the legs and arms, and he staggered a trifle on walking. At times he had a numb feeling in one foot or one hand. He had a little headache, and slept worse than usual. After a month's rest at the seashore, and five months after his attack of influenza, he went to pieces nervously; he had intense nervous paroxysms in which he walked the floor, "feeling as if he should fly." His appetite and digestion failed. His bowels were very costive. His tongue at times felt thick and he had more or less swimming in the head. His will power was diminished, but he had no confusion of ideas or mental impairment. He was depressed and wretched. Examination of the chest, the urine, the eyes, the reflexes, sensibility and mobility revealed nothing of importance. He made a good and speedy recovery.

If we were to judge by the reported cases, mental disease is probably more frequent than nervous disease as a sequela of influenza, but I think this is to be explained rather by the fact that more interest has been taken in the mental sequelæ, and that more of the cases have been reported. Through the kindness of Drs. Elliot, Dewey and Noyes, I have been able to collect statistics from Danvers, South Boston and McLean hospitals, which may supplement those of Dr. Harrington,[29] which he reported to this Society two years ago.

To Dr. Harrington's twelve cases at Danvers Dr. Elliot adds ten, two mania, two melancholia and six confusional insanity. Out of one hundred and seventy-five admissions at the McLean, five were possibly due to influenza, three melancholia, one delusional insanity and one mania. Here influenza was only one of various etiological factors. Of eight cases at South Boston two were mania, two melancholia, one epileptic insanity, one senile insanity, and two post-apoplectic insanity. Out of three hundred cases that I have collected, including the above and my own personal cases, I find ninety-three set down as melancholia, sixty as mania, forty-four as acute confusional insanity, twenty-nine as acute delirium, fifteen as delirium tremens, where influenza proved the exciting cause, nine as dementia, eight general paralysis, six febrile delirium, seven paranoia, and five hypochondriasis, the rest being divided among the other forms of insanity. The figures for acute confusional insanity are doubtless too small, as it is often mistaken for other troubles. Clouston notes particularly an increased percentage of melancholia as compared with mania since the epidemic began. Excluding the cases of acute delirium, which may be referred to conditions of profound congestion, the majority of the other forms of insanity may be regarded as of asthenic types.

In regard to the more chronic forms of insanity or to organic affections, like general paralysis, I feel sceptical, although a few are reported. I am more inclined to believe, with Mills,[48] that the influenza has stirred up some old syphilitic process or exaggerated some previously unnoticed defect, although Krypiakiewicz [40] reports one case where the etiology seems fairly clear.

In an obscure case of my own, influenza was only one cause. The patient was a man of thirty-five, who lost his situation as a painter four years before. This made a profound impression on him, but influenza made matters much worse. There was for a time nocturnal enuresis, memory failed, he became depressed and irritable, dwelt on the inconsistencies of life, was nervous and hypochondriacal, but withal he did not seem to realize his financial situation or to be anxious about it. For six months the speech had been hesitating and nasal, but the hand-writing was unimpaired. The pupils were unequal and failed to react to light. Otherwise the physical examination was negative.

The action of influenza upon those already insane is, curiously enough, not very marked. The insane seem, for some reason, to be less susceptible to the epidemic. At South Boston, Danvers and Somerville a larger percentage of the attendants than of the patients were attacked. Cantarano[12] found 7.28 per cent. of the insane patients. and 62.9 per cent. of the infirmary patients at Palermo were attacked. At Sales 9.28 per cent of the insane and 31.48 per cent. of the infirmary cases suffered. Sander[61] considered that at Dalldorf the insane had a more benign form of influenza. Perhaps the greater exposure and harder work of the attendants have something to do with these figures.

In some cases insanity is little influenced by influenza. In other cases it is made worse. Snell[68] found at Hildesheim that in two cases out of eighty-two the insanity grew worse. Robertson and Elkins[59] found that the influenza increased the mental symptoms. Mispelbaum[49] found similar conditions. Cantarano[12] found little change, although at times the patients were exalted by it. Helweg[80] thinks that in the stable forms of insanity influenza has little influence, but in progressing cases it may cause an outburst of symptoms. In cases where the brain has very little activity, as in tumors or advanced general paralysis, influenza may bring the little activity to a standstill. Influenza may also change the type of the insanity; thus Morselli[50] noted the first apoplectic seizure in a general paralytic after an attack of influenza, and that the phases of *folie circulaire* were suddenly changed by it. Bartels[2] states that a quiet paranoiac became confused, excited, refused food and finally died. In a few, rather questionable cases, it seems to have worked beneficially. Dr. Elliot writes me that a patient at Danvers had general paralysis, alleged to be due to influenza; while in the hospital he had another severe attack of influenza which has caused a very pronounced remission, so that he is considered well. Roller[50] and Metz[47] report alleged cures of paranoia.

There is another action of influenza of which I have thus far spoken indirectly. Enough has been said to show that its action is that of a depressant. It lowers the entire plane of the individual, mental, moral and physical, and in this way he becomes more vulnerable to other injurious influences. Thus there have been several patients in the City Hospital with syphilis, but in a latent state; after the influenza the syphilitic symptoms began to manifest themselves, but yielded to the appropriate treatment. I have already stated that insanity may be rendered worse by it. All observers agree, however, that the essential factor in all these cases of insanity alleged to be due to influenza is predisposition. Dr. Cowles states that influenza is but one factor in the production of insanity in the cases at the McLean, and in my own cases heredity, trouble, and excess had an important share in the etiology. In lowering the plane, influenza has given other factors a chance to work, or has lessened the patient's resistance to morbid conditions already existing. I could cite several cases of neurasthenia where the progress to recovery has been materially checked, and one case of traumatic hystero-neurasthenia which has been reduced from a condition of tolerable comfort to a state of invalidism. In other cases, as in insanity, influenza has seemed to have little effect on the original trouble.

We see from what has been said that there is no special form of nervous or mental disease which is the specific product of influenza, nothing even which bears the close relation to it that pharyngeal paralysis does to diphtheria or tabes to syphilis. The chief nervous sequalæ are peripheral nerve troubles, — neuritis or neuralgia, — and depressive asthenic conditions, which may be classed under the vague general heading of neurasthenia. The mental states are most commonly exhaustive states, represented by acute confusional insanity (acute Verwirrtheit), which Krypiakiewicz[40] thinks is commoner in young persons; depressive states, melancholia, which is commoner in those of more adult years; and mania. With profound febrile conditions and intense congestion we may have acute delirium. Pronounced mental disturbance demands, as I have said, some individual predisposition. If the individual be previously sound the nervous sequelæ are usually slight and the prognosis is favorable. Where other factors come into play, of course, their influence must be considered.

These conditions, however, are by no means specific. They occur after any of the acute infectious diseases. Neuritis, as is well known, may follow typhoid, pneumonia or diphtheria; neurasthenic conditions, of a much more severe and protracted type, are common after typhoid and other diseases; and the various psychoses may also occur. Cantarano,[12] indeed, believes that the percentage of insanity due to influenza is smaller than that due to the other acute diseases.

Much has been said, especially in common talk and the patent medicine advertisements, to lead us to believe that nervous affections have been unusually prevalent as a result of the epidemic. Clouston[13] states, that the nervous tone of Europe has been lowered by it. "The influenza epidemic," says Mills,[48] "has impaired the *morale* of the community. Lack of spirit in work, and an apprehensiveness with reference to health, business, and all matters of personal interest have been abnormally prevalent. The hysterical have become more hysteric; the neurasthenical more neurasthenic. Hypochondria has displaced hopefulness in individuals commonly possessed of courage and fortitude. In brief, certain neuropathic and psychopathic features have been temporarily impressed upon the community." With these opinions I would agree. Influenza has undoubtedly been followed by a general weakening of the entire system, but the percentage of true nervous troubles due to it is, I believe, very small. I have seen in the past three years, for instance, more cases of post-diphtheritic neuritis than I have of neuritis following influenza. In my service at the City Hospital, embracing each year the months from February to May inclusive, just after the violence of the epidemic was over, I have found that the epidemic had after all but little influence on the number of cases or the character of the nervous troubles. In only a few cases of the many seen during the service did it exert any marked influence. When we consider that, according to Shattuck's[67] estimate, forty per cent. of the adult population was seriously affected during the first year of the epidemic, such a statement has some bearing on the question. The only statistics which have come in my way are those of the German army:[26] here nervous sequelæ, chiefly in the form of neuralgia, were noted in only 0.53 per cent. of the cases.

Of course, if we take into account all the nervous disturbances of the attack itself, the pains, headache, etc., Kirn's[36] statement that in no other acute infectious disease do we meet with so many nervous disorders, may be regarded as approximately true, but if we consider merely the nervous and mental sequelæ we must admit that, as influenza is one of the milder acute infectious diseases, so its sequelæ are less frequent and less severe than those of the other affections. It has taken heavy toll from the aged, the degenerate, the neuropathic and the alcoholic, but its effects on the healthy, considering its prevalence, have been mild.

A final word as to the causes of the nervous disturbances. Kirn,[36] Nägy[53] and Ladame[41] lay some stress upon the fever of influenza. This, however, is usually slight, and in many cases seems inadequate, for the symptoms often do not develop until several days or even a week or two after the fever has subsided. It is undoubtedly a factor in causing the delirium of the attack, and perhaps in producing the subsequent congestive conditions. The most probable cause of the symptoms in the majority of cases seems to me to be the poisonous effect of some ptomaïne formed by the bacterium of the disease.

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A SUCCESSFUL CASE OF NEPHRECTOMY FOR PYELO-NEPHRITIS WITH CALCULI.[1]

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THE patient, a married lady of American parentage, was born and has always lived in New England. She is now forty-six years of age. A careful investigation respecting hereditary tendencies, clinical history, locality of residence,[2] manner of living, or occupation,[3] furnishes no data previous to 1883 which can be regarded as etiologically connected with the disease for which I first saw her in August, 1891, at the request of Dr. E. J. Cutter, of Leominster, Mass. Till 1883 perfectly well; all functions normal; menstruation regular; molimen three days, almost always painless, interperiod approximately four weeks. One normal confinement twenty-one years ago. No miscarriages.

In 1883 an attack causing confinement to bed for four weeks. Reported diagnosis, "Inflammation of the bladder with prolapsed uterus." The attack was characterized by difficult painful micturition. Retention of urine with chills. Suppression of urine. Pain in right side. Urine, thick, turbid. No vomiting.

In 1885 another attack, attended with some icterus. Hepatic enlargement. No gastric symptoms. Intestinal action habitually sluggish. The urine was much diminished in amount, turbid, with a heavy sediment. There were distinct chills, followed by fever. Was relieved by weak diuretics (uva ursi, buchu, gin), and was better for a short time. Then frequent relapses which subsided under similar treatment.

In 1889 a uterus retroverted to the first degree with hypertrophy required treatment. The local examination and manipulation thus necessitated failed to demonstrate any indication of trouble elsewhere in the abdomen.

Since 1889 the general condition has been impaired ("felt poorly"). A constant sense of fatigue. Pain in the lower extremities.

In the summer of 1890 menstruation recurred every two weeks.

In January, 1891, attention was first attracted to the right side. Patient was unable to lie on that side, but did not complain of pain or tenderness.

In February food caused distress. "Catch" over right hip reported. Urine, diminished in amount, thick, turbid.

During the spring the subjective symptoms became gradually more marked. Considerable pain, referred to right hypochondrium and "through the back." A dragging sensation in the dorsal region. Pain described as more posterior than anterior, and extending up rather than downwards.

In May became still worse, with anorexia, loss of flesh and strength, etc., so as to require medical attendance during this month. When relieved, first noticed a "bunch" in the right hypochondrium, which could then scarcely be felt but which steadily became more distinct.

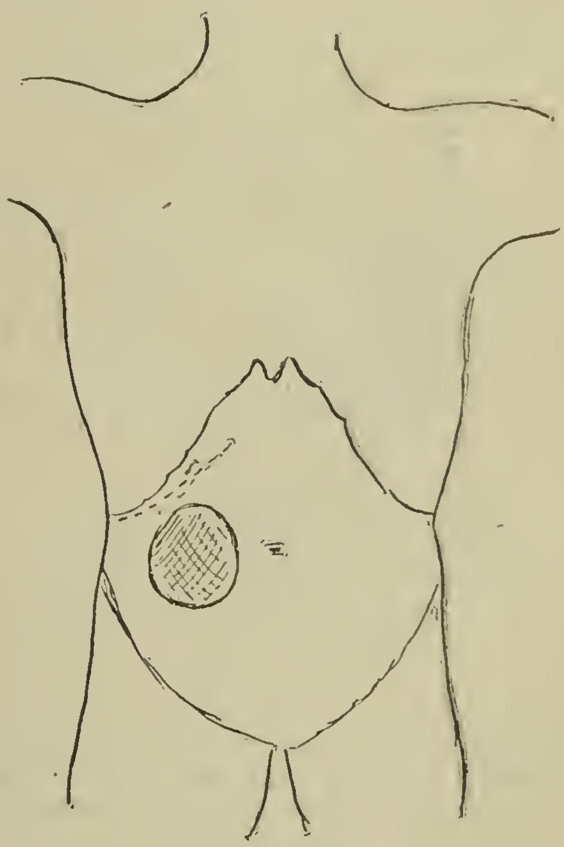

FIG. 1. June 25th.

About June a careful examination disclosed a somewhat movable tumor in the right hypochondriac and lumbar regions. (See Fig. 1.) Contour generally ovoid or globular, but not easily defined; surface lobulated, but smooth; at some points, elastic, if not fluctuating; at others firm. Percussion flat. Tumor separated by a narrow tympanitic zone from the liver dulness. Towards the median line and below, the adjacent surface was tympanitic; but externally the outline was not well defined, merging into the lumbar dulness. Bimanual examination failed to show any connection with the pelvic organs. The urine was diminished in amount; alkaline; specific gravity 1012; albumen absent; sediment heavy and flocculent, consisting of mucus, indifferent cells and am. mag. phosphate crystals. No renal elements detected, except perhaps a few renal cells. Generally characteristic of a chronic catarrhal process, probably vesical.

During June and July the tumor increased continuously in size, growing downwards and laterally. Considerable loss of flesh, great weakness, restless, unable to sit or stand without discomfort. Pain in side, sometimes in groin or over right nates. Easier when right hip flexed. Slight œdema of right leg. Micturition at times increased in frequency. No relief was obtained from careful, skilful medical treatment. The patient's condition was steadily becoming more serious, and surgical treatment was advised.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, May 4, 1892.
[2] Twenty years in Massachusetts, previously in Vermont.
[3] Tailoress, and housewife for the past twelve years.

I first saw her about August 3d. Her subjective symptoms were as above described, but more marked. The tumor was now visible, even when covered by the clothing. She was a fairly well developed person, somewhat above medium height. Considerably emaciated; cheeks thin; facial expression anxious. Temperature, pulse and respiration normal.

Examination of the chest negative.

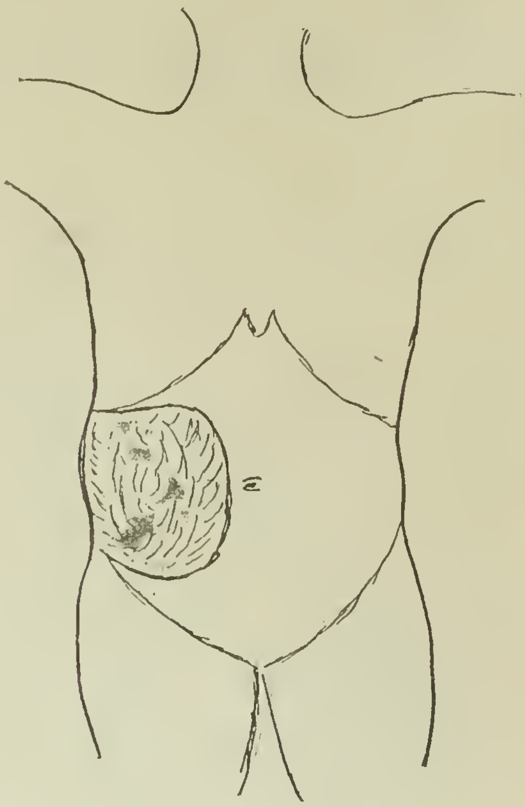

FIG. 2. August 6th.

The abdomen was somewhat distended on the right side but otherwise normal in appearance. The enlargement extended from just below the right costal arch to the level of the right anterior superior iliac spine, and laterally from about the centre of the right rectus abdominis muscle to the external border of the right erector spinæ. The surface was rounded, of slightly irregular contour, as in Fig. 2. Skin normal. Position of tumor not altered by respiration. The abdominal wall moderately thick.

Palpation disclosed a large, irregularly ovoid and slightly movable tumor. Its outlines were not well defined, except that it extended from under the liver to the brim of the pelvis, and from a little to the right of the median line laterally outwards so as to distend the right loin (Fig. 2). Its surface was irregular, lobulated, but otherwise smooth. At some points it was dense and firm; at others tense, elastic or fluctuating. No vibration on concussion. Distinct tenderness with more than moderate pressure.

Percussion. — Note over tumor, flat. A narrow zone of different resonance between hepatic dulness and its upper border. Abdomen to left of growth and below, tympanitic. The "flat" area extended round the right side to the spine, including the whole area between the tenth rib and the iliac crest.

Auscultation negative. Outlines of resonance not altered by change of position and site of tumor, only by its sagging slightly to the left during left lateral decubitus.

Vaginal Examination. — Uterus somewhat retroverted and enlarged. Otherwise no indication of the presence of the tumor, at least, without ether. There was a slight œdema of the lower extremities. A careful examination of the lymphatic vessels and glands — pelvic, axillary, supraclavicular, inguinal or elsewhere — gave negative results.

The *urine* was pale, turbid, alkaline; specific gravity 1014; albumen absent (at least by HNO_3, or heat test); a large amount of white sediment containing much pus, many cells of bladder epithelium, numerous crystals of am. mag. phosphate, and considerable unrecognizable organic detritus.

Concisely, then, the case was that of a patient, age forty-five, who for eight years had had recurrent attacks resembling a chronic catarrhal inflammation, with exacerbations of the vesical tract, and no indication that the kidney had been affected, or at least more than temporarily so. Within the past few months the general constitutional disturbance indicating the existence of some serious pathological process. More recently the appearance and rapid growth of a tumor apparently affecting the right kidney. The character of this growth was doubtful. It was partly solid, partly cystic. It must be inflammatory or neoplastic. The temperature, pulse and general condition favored the latter hypothesis rather than the former. The urine showed no elements which would indicate a renal origin. There had been "no hæmaturia." Cystic tumors of the kidney which could produce the present physical conditions are only the result of suppurative processes or malignant disease (generally cancer, sarcoma or adenoma). There seemed no means of making a more accurate diagnosis without an actual inspection of the growth. In either case the only treatment which offered any hope of relief was operative. Hence I decided that an exploratory incision was justifiable; also, if found possible after a careful examination, to endeavor to permanently relieve the patient by some radical operation. That such an incision should be abdominal, not lumbar, seemed necessitated by the size of the growth, and the probable subsequent operation, that is, nephrectomy. I do not think either a satisfactory exploration or operation would have been possible by the lumbar method.

On August 7th (11 A. M.) this plan was executed. During the preceding few days the patient was carefully prepared by hygienic, dietetic, antiseptic and other treatment, the object of which was to empty the alimentary canal, accustom the patient to change of diet and environment, to insure a proper action of the skin and renal functions, and secure as far as possible an aseptic surface for operation.[4]

Operation. — Incision in right semilunar line, 20 cm. long, over the most prominent portion of tumor, through the abdominal wall. Abdomen opened without difficulty, and the tense elastic surface of the tumor found in contact with the parietes. After separating the adjacent adhesions with the fingers, the growth was grasped with cyst forceps and incised.

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[4] Instruments — towels, sheets, etc. — were sterilized by moist heat. Sutures, twisted white silk, prepared by the Brunner method. Sponges, the Eliot worsted, sterilized with steam and sublimate solution. Hands aseptic by Furbinger method. Dressings sterilized by dry heat. External irrigation, hot sublimate solution (one-tenth per cent.). Intra-abdominal irrigation, hot saline solution (six-tenths per cent.), with boiled filtered water. Anæsthetic ether preceded stimulating enema.

About 3,000 c. c. of a yellowish-white, gruel-like, somewhat sparkling fluid gushed forth, leaving a large cavity whose walls were here and there adherent to the parietal peritoneum and adjacent organs. Exploration with the hand inside, and as far as possible outside, the cyst, discovered a solid, firm, irregular mass, somewhat fixed, situated to the right of the spine. Its lower end could not be defined with any accuracy, but apparently extended over the pelvic brim and towards the centre of the cavity. The upper border was under the liver. Although by exclusion the growth was the kidney, the recognition of it as such from its contour or appearance was impossible. It could not be definitely determined that it was not connected with some pelvic organ. Hence the best course seemed to be to attempt its removal, and such an attempt was begun. The adhesions were first attacked and gradually separated by clamping, ligating, tearing, sponging, etc., till at length the insertion of the cyst wall to the solid portion of the tumor was reached. At this point the mass was first definitely recognized by the arrangement of the renal fat at the junction of the pelvis with the body of the organ. By degrees the solid portion of the growth was freed from its attachments. The vena cava inferior was exposed for several inches. The ureter was found, isolated, doubly ligated, divided, and the end disinfected. The renal vessels were next clamped, ligated separately and *en masse* with heavy silk, and cut off. The tumor, thus freed from its last attachment, was removed from the abdomen. The latter cavity was now rapidly irrigated. All bleeding points were controlled as far as possible, but still leaving considerable bleeding from the extensively abraded surfaces. The abdominal wound was next closed with seven heavy silk sutures, at intervals of one inch, which penetrated the entire abdominal wall and peritoneum. No drainage. The skin was apposed where necessary by fine silk, superficial sutures. Dressing, bleached gauze, wet with sublimate solution. Sterilized (baked) absorbent cotton pads. Sheet wadding and swathe.

The duration of the operation, was one hour and twenty minutes.

Shock marked. Stimulation by hypodermic injection was necessary at times during the operation and immediately after. Marked pallor, sunken cheeks, dilated pupils, shallow respiration, very weak, rapid, occasionally intermittent, radial pulse, and cold extremities, indicated its severity.

The patient recovered consciousness rapidly, but reacted slowly; and only after eight to ten hours of careful and energetic treatment did pulse, respiration, surface temperature and general appearance indicate that danger from immediate collapse was successfully passed. There was considerable pain referred to the seat of operation which finally required morphia (gm. 0.016) to relieve. The abdomen was tender over the same area. All motion was quite painful. Vomiting occurred at times.

Eight hours after the operation 450 c. c. of urine were removed from the bladder by catheterization. It was turbid and slightly alkaline; specific gravity, 1,025; albumen absent; sediment abundant, white and flocculent, consisting chiefly of phosphates, round and squamous bladder-cells and a few columnar cells. Six hours later (fourteen hours after operation) 300 c. c. were similarly removed; still turbid, rather dark, *acid*, albumen one-eighth per cent., sediment still considerable. Twenty-three hours after operation micturition became voluntary.[5]

During the last twelve hours the abdomen became somewhat distended and tympanitic. Pain less, tenderness unchanged, temperature and pulse normal, respiration easy, except on forced inspiration.

Treatment. — Absolute rest, nutriment and medicine by rectum. Catharsis by magnesia sulphate. Flatus relieved by soft rubber rectal tube and enemata.

Second day. — General condition improved; stronger, can move a little without assistance. Temperature, pulse and respiration practically normal. Vomiting ceased during the forenoon. Abdomen less distended and tympanitic, but still marked tenderness at site of operation. Urine 900 to 1,050 c. c. Considerable flatus during the night and small fæcal dejection at 2 P. M. A dark-colored vaginal discharge noticed. Feeding by mouth begun.

Third day. — Steadily improving. Respiration, even forced, without discomfort. Abdomen soft, still somewhat tympanitic, not distended, less tender. Patient can move a little without pain. Amount of urine 1,410 c. c. Saline cathartic diminished.

Fourth day. — Better. Temperature, pulse and respiration normal. Some flatus. Abdomen flat, less tender, no induration. Urine 1,440 c. c. No vaginal discharge. Some smarting at site of abdominal incision. Diet liquid. Nutritive enemata omitted. External dressing removed and renewed after moistening internal layers with sublimate solution.

Fifth day. — Steady improvement; moves easier; abdomen tender only in right loin; no dulness. Urine 1,320 c. c.

Sixth day. — Doing well. Slight tenderness about wound; abdomen apparently normal. Wound dressed. Found united, with some redness about deep sutures, apparently from tension. Superficial sutures removed. Urine 1,080 c. c.; color normal, *clear;* acid; specific gravity 1,032; albumen absent; sediment slight, calcic oxalate crystals numerous, round bladder-cells, vaginal epithelium, and a few leucocytes. No vaginal discharge. Diet increased to solid farinaceous and small amount of nitrogenous food. Lithia water.

Seventh day. — Still slight discomfort from wound. Redressed and five deep sutures removed. Supported by strapping. Sterilized dressing. Urine 1,380 c. c. Now normal in appearance, without visible sediment.

Eighth day. — Cheerful and happy; wants to be dressed and sit up. Much stronger. No abdominal tenderness; abdomen flat, soft. Urine 1,350 c. c., clear; normal yellow; normal odor; slightly acid; specific gravity 1,029; albumen absent; sediment slight. Wound redressed, and all remaining sutures removed; union complete. Redness about suture punctures nearly gone; no discomfort; slight vaginal discharge this forenoon. Food increased.

Recovery from this time was uninterrupted. The chart shows no general disturbance. The urine before the operation, as stated, was alkaline, with an excessive sediment characteristic of suppuration. In the first twenty-four hours after operation the amount was 900 to 1,050 c. c. In the next it increased to 1,410 c. c.; and in the next (that is, the third day) to 1,440 c. c. The urine became acid during the first twenty-four hours after operation. Its character also rapidly changed as regards its other constituents, so that on the seventh day it was normal.

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[5] Amount small (45 c. c.) at 11 A. M., 2, 2.30 P. M.; acid, rather dark, still turbid; albumen one-eighth per cent.; sediment less, but still considerable; bladder and vaginal epithelium in large numbers; considerable pus; also earthy phosphate in large amount.

Its average composition during the next three weeks was as follows: Amount 1,290 c. c. (maximum 1,380 c. c., minimum 1,140 c. c.). Color normal or pale; odor normal; reaction acid; specific gravity 1,018 (maximum 1,029, minimum 1,010); sediment slight (few bladder or vaginal cells) or absent; albumen absent.

TEMPERATURE CHART.

Date.	Day.	Temperature.		Pulse.		Remarks.
		A. M.	P. M.	A. M.	P. M.	
Aug. 6..	..	..	97.5°	..	70	
7..	1	98.4°	99.0	70	90	Operation.
8..	2	98.6	99.0	75	80	
9..	3	98.6	99.4	70	80	
10..	4	98.6	99.8	70	80	
11..	5	98.6	98.6	70	82	
12..	6	98.6	98.8	70	80	
13..	7	98.6	99.0	70	82	Dressing opened.
14..	8	98.0	99.5	75	81	Five sutures removed.
15..	9	98.6	99.4	74	74	All sutures removed.
16..	10	98.6	99.2	82	78	
17..	11	98.6	99.5	90	74	
18..	12	98.8	99.6	90	80	Sat up.
19.	13	98.6	99.2	100	90	
20..	14	98.6	99.6	80	90	Sat up; about room nine hours.
21..	15	98.6	99.4	80	92	

Since then occasional examinations show an average analysis as follows: Amount in twenty-four hours 1,305 c. c. (maximum 1,580 c. c., minimum 960 c. c.) pale, clear; slightly acid or neutral; specific gravity 1,009 (maximum 1,010, minimum 1,008). Sediment (except once specimen obtained during menstruation) slight or absent. Never any histological elements found which would indicate any lesion of the remaining kidney. Albumen absent (once slight trace).

Last analysis was made May 17, 1892, eight months after operation.

The general condition rapidly improved and strength increased.

Sat up first on the twelfth day and could have done so earlier had it not been considered desirable to protect the recently united wound from tension as much as possible. On the fourteenth day was up and about the room for nine hours. The remaining kidney was apparently performing without effort its double task. On this day it excreted 1,350 c. c. of urine, color and odor normal, acid, 1,021; albumen absent; sediment slight, mostly vaginal, with a few bladder-cells. The wound of operation was supported by strapping and swathe.

From this time till the twenty-first day the patient was simply under observation except as regards the protection of the wound to insure firm union and a careful regulation of diet. The urine was made as unirritating as possible by extreme dilution and modification with liquids and Lithia water. After the sixth day no calcic oxalate crystals were seen.[6]

On the twenty-first day the patient went home, a journey of several hours by carriage and rail, without assistance or very much fatigue. Apparently well.

The subsequent history is uneventful. She is now, eight months after operation, well, ruddy, eyes bright, skin firm, no pain, sleeps well. Can lie, sit or stand in any position. The operation cicatrix is 12.5 cm. long. Its greatest diameter (at one or two points, otherwise linear) is 0.75 cm. It is firm, freely movable, and shows no signs of yielding. There has been no treatment except that an excess of nitrogenous food has been avoided and the urine has been kept diluted with Lithia and later with Poland water. She is now well, but with reference to future attacks nothing definite can be assured. They may, if the diathesis still exists, recur, and a calculus formation affect the remaining kidney, but there is no indication that such an event will happen and it may, perhaps, be permanently avoided by careful prophylactic treatment.

The specimen (alcoholic) is here for inspection. It is an irregular, globular-shaped mass ten inches in diameter and consists of a sac, the remains of the dilated kidney, attached to a solid mass.[7] The sac wall was irregular in thickness but is now apparently uniform. It was chocolate colored, eight millimetres thick, and firm. Histologically it consisted of fibrous tissue, some remains of tubes lined with cubical epithelium and some areas of round cell infiltration. The solid portion on section showed fibrous and fat tissue, also, microscopically, some round cell infiltration. Impacted in the fibrous tissue were calculi, dark brown, hard, surface irregular. They consisted[8] of almost pure calcic phosphate with a trace of ammonio-magnesic phosphate. The pelvis, or other remains of kidney structure were not seen.

The fluid contained in the cyst is described as thick, opaque, grayish.[9] It contained a large amount of granular débris and small fat drops. Many small granular and fatty cells. Many plates of cholesterin. A few altered blood globules. Fluid partly dissolved and cleared up with ether, showing that it contained much fat.

The following points have been of especial interest:

(1) Was a more accurate diagnosis possible? I do not see how it could have been more definitely made although I should now be more prepared to find a suppurative than a neoplastic process when similar physical appearances existed. And this case demonstrates that the former process can exist without causing urinary changes except those common to disease in other portions of the urinary tract. Also, hæmaturia is not a necessary symptom to demonstrate the existence of a renal calculus as has been frequently stated.

(2) The choice of operation. This is not an easy task. First, as regards nephrotomy or nephrectomy. Second, as regards the route, lumbar or abdominal, that is, transperitoneal. General statistics, tables of mortalities or general rules are of little value in cases similar to the one reported, and the operator must decide on the procedure preferable according to the especial conditions presented. According to many rules,

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[6] The presence of these calcic oxalate crystals is rather surprising. They are reported as present only on the sixth day; but their rapid disappearance and the character of the urine both before and after these dates would seem to indicate that the observation was incorrect, and that some other substance had been mistaken for them; possibly uric acid crystals.

[7] From report of Dr. H. F. Sears, Pathologist, Boston City Hospital and Harvard Medical School.

[8] Analysis by Prof. E. S. Wood, Harvard Medical School.

[9] From report of Dr. E. M. Greene, Pathologist, Carney Hospital and Boston Dispensary.

my operation was contra-indicated, for nephrectomy is not generally considered to be the operation for renal calculus. In my case the result has justified my selection. It was made on account of the uncertain diagnosis, the size of the tumor and the necessity for room for work. The kidney was so disorganized as to be functionally worthless, and if nephrotomy had been done the evidence is in favor of a renal fistula as a result. My patient is not only relieved but is well, and recovered rapidly.

As regards the route, I think there was here no choice, for if in such a case nephrectomy is the selected operation it must be abdominal. I do not see how the operation would have been possible by the ordinary lumbar method on account of the size of the tumor and its adhesions.

By the König lumbo-abdominal operation or similar modifications, such an extensive division of the muscles would be necessary that the operation would become practically a transperitoneal one before its conclusion. Again, the abdominal route has the following advantages:

A better opportunity for diagnosis.

A better appreciation of the exact conditions under which the operation must be done.

An opportunity to examine the remaining kidney.

More space for operation.

An easier access to the pedicle.

(3) The dangers of the operation seem to be: (1) shock; (2) hæmorrhage; (3) uræmia; (4) peritonitis; (5) septicæmia; (6) Renal fistula.

(4) I have wondered at the comparatively slight constitutional disturbance and uneventful rapid recovery from so extensive an operation. The condition resembles that seen after continued exertion or great fatigue. Also at the rapidity with which the urine became normal, and the readiness with which the remaining kidney performed its increased task.

(5) The case demonstrates that it is possible to obtain a recovery by nephrectomy without drainage, and it is preferable to drainage, if followed by its frequent unsatisfactory sequel of fistula and its attendant discomforts. This, even when the peritoneal cavity has been tainted with fluid from a kidney extensively disorganized by a suppurative pyelo-nephritis.

Note. — Patient last seen on July 1, 1892. Was in perfect health as far as could be ascertained.

Clinical Department.

A CASE OF BROKEN NECK, WITH AUTOPSY.[1]

BY EDWARD O. OTIS, M.D.

H. L. W., Jr., a student, seventeen years old, was attempting to do the "cut-down" in the gymnasium of the institution where he was at school, when he fell upon the underlying mattress. This accident happened about five o'clock in the afternoon of January 20th. The "cut-down," as it is called in gymnasium parlance, is a simple feat. The performer stands beneath the parallel flying rings, holding them in his hands. He swings his feet up so as to throw them inside his hands, and letting go without breaking the continuity of the swing, lands upon his feet. It is a pretty and not a difficult trick.

Young W. when about the middle of this manœuvre, fell a distance of about five feet, upon a thick mattress lying beneath. He fell at the point of time when his head was down and the superincumbent body was moving forward with the momentum of the swing. The resultant of the two motions was that he struck upon his head — the occipital part — and upon his knees and elbows. The weight of the body, then, bent over the cervical spine on the one hand, while the head resting on the mat, held it fixed, on the other. The boy weighed about a hundred and twenty-five or thirty pounds, and had a long, slender neck. The weight of the body, not the force of the fall, did the mischief.

As one can readily see, no more perfect way of breaking one's neck could be devised; and yet in a considerable gymnasium experience I have never seen or heard of this or any accident happening in the performance of this common trick, although it possesses this awful possibility. There is no evidence to show that the fall was accompanied with any great amount of pain. Paralysis was immediate, the patient finding it impossible to extricate himself from the peculiar position in which he had fallen. He was seen by his attending physician, Dr. Nute, of Exeter, N. H., who had him very carefully transported to his room, near by, on a stretcher.

I saw him, together with Dr. G. W. Gay, of this city, the next forenoon, seventeen hours after the accident. There was complete paralysis below a line drawn two or three inches above the nipples. He could flex the forearm upon the arm, but could not extend it, or make any other movement of arm or hand. Respiration was diaphragmatic. There was paralysis of bladder and intestines. He could rotate the head, but any antero-posterior movement gave him pain. There was a tender spot, painful on pressure, between the fourth and sixth vertebræ. There was no sensation in the paralyzed portion of the body. He could swallow perfectly well, but could not clear his throat. An attempt was made by extension, counter-extension and manipulation to reduce whatever displacement might exist from dislocation or fracture. This gave him much pain and was apparently without result. Operative interference was not advised.

I saw him again the next forenoon, January 22d, and thenceforward constantly until the end, and made another attempt with his attending physician to reduce whatever displacement there might be. Extension and counter-extension with rotation was tried, and twice we heard something snap, which was also noticed by the patient, but no results followed. We then applied permanent extension from the occiput and chin, with a weight of from seven to twelve pounds, and counter-extension by elevating the head of the bed. This seemed to give him relief and when it was discontinued from time to time he often asked to have it re-applied. He was given simple liquid nourishment, catheterized regularly, and the tympanites was relieved by a rectal tube kept *in situ*. An ice-bag was placed at the back of his neck. The temperature was about a degree above normal, the pulse 62°, and the respiration 24. His mind was remarkably clear and he was perfectly self-possessed, although he realized the gravity of his condition. His fortitude for one so young was remarkable; he expressed himself as having no fear, and showed the greatest care and consideration for all about him. Not the slightest thing escaped his notice, and he frequently suggested little devices for his own comfort.

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[1] Read at the Surgical Section of the Suffolk District Medical Society, May 4, 1892.

On Saturday, January 23d, the third day after the accident, breathing became difficult from the accumulation of mucus. This was removed from the throat and larynx by a pair of long placental forceps with cotton. Then nitro-glycerine, one-fiftieth of a grain, was given, which had a most marvellous effect in clearing the lungs with great rapidity. The administration of this drug was continued every three or four hours up to the time of his death. Brandy and aromatic spirits of ammonia were also given from time to time. On Saturday afternoon dissolution seemed imminent, but the heroic determination of the patient to live until his mother arrived from the West, together with the happy effect of the nitro-glycerine, seemed to be the factors in averting imminent death. On Sunday, January 24th, the fourth day after the accident, the temperature arose to 102°, the pulse to 96, and the respiration to 40. By trying to breathe as gently and quietly as possible he seemed to keep the collection of mucus at a minimum. He would sleep an hour or two at a time. Now and then for a moment he would be delirious. On Monday, the fifth day, the temperature went up to 104° in the afternoon, the respiration varied from 40 to 44, and the pulse from 98 to 112, and at times would become very weak. Death took place early Tuesday morning, the sixth day after the accident.

An examination was made of the spine in the cervical region, nine or ten hours after death. Drs. W. T. Bull of New York, Symington of Santa Fé, New Mexico, Perry and Nute of Exeter, N. H., being present. The space between the atlas and atloid seemed to be unusually wide, but the ligaments were not torn. Neither did there appear to be any rupture of the various ligaments anywhere in the part of the spinal column examined. A fracture of the lamina of the fifth or sixth cervical vertebræ was found, but no displacement. Neither was there a dislocation anywhere. On opening the spinal canal over the seat of fracture the dura was moderately injected and the spinal cord was found to be soft and diffluent. The bodies of the vertebræ were in place. If a dislocation or displacement occurred at the time of the accident it is probable that it immediately righted itself. The cord, however, was probably crushed and irretrievably damaged at the moment of the accident, remembering that the paralysis was immediate. In the light of the autopsy no operation could have accomplished anything, thus verifying Moullin's statement[2] that "in cases of fracture by indirect violence, the operation of trephining offers little or no hope. It is probable that in the majority of cases the cord is only subjected to momentary compression, but yet it is so reduced to a pulp that recovery of function very rarely follows."

Such a case as this, however, is a most trying and unpleasant one for the surgeon, for, as Dr. Gay remarked, his inclination is to attempt some operative interference, but his judgment opposes it. The length of time the patient survived such an injury is remarkable and unusual I think. Operation in case of injury of the spine has been recommended since the time of Ambrose Paré, and has been not infrequently done in suitable cases, not, however, with great success. I will only refer the reader to the most exhaustive review and discussion of the subject I am aware of by Dr. J. William White, in a paper read before the American Surgical Association, last September, in Washington, and published as a reprint from the *Therapeutic Gazette* of October 15, 1891. In the *American Journal of the Medical Sciences* for April, 1892, p. 395, Church and Eisendrath of Chicago report cases of spinal cord surgery.

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CANCEROUS KIDNEY REMOVED BY LAPAROTOMY; RECOVERY.[1]

BY S. J. MIXTER, M.D.,
Surgeon, Carney Hospital; Surgeon to Out-Patients, Massachusetts General Hosp.; Demonstrator of Anatomy, Harvard Med. School.

CAPTAIN J. B., age sixty, of late lighthouse-keeper and formerly sailing-master, was sent to me in July, 1891, by Dr. MacKeen, of Cow Bay, C. B., on account of an abdominal tumor, probably renal.

Several months before, he had stepped through a hole in the floor while going about in the dark, and struck heavily against a beam. He was unconscious for a few minutes and on coming to found that he was severely bruised in the left side just below the ribs. He was confined to his bed for a few days, and soon resumed his usual work.

He first consulted Dr. MacKeen on June 20, 1891, on account of hypogastric pain and hematuria. The bladder was found to be distended with urine and blood-clot. Considerable quantities of fresh blood and clots were passed for nine days when the urine became clear and has remained so ever since.

When I examined him in July, I found him to be a man of about six feet in height, weighing about two hundred pounds, and the picture of health and strength. In the left of the abdomen could be felt a hard, quite movable mass, about the size of a cocoanut, filling that side to a point between the linea alba and linea semilunaris. There was no tenderness on pressure and no suggestion of fluid.

The position of the descending colon was not made out, though it would probably have been easily located had it been distended by air injection. Nothing abnormal was to be found in the other organs or in the urine.

Dr. Fitz examined the patient with me, and agreed with me that the mass was probably an enlarged kidney, which, even if cancerous, was so movable as to offer a good chance for its removal.

The patient entered the Carney Hospital, and on July 22d I operated. On opening the abdomen through the left semilunaris I found the descending colon outside and somewhat behind the tumor. A small cut was made through the peritoneum which covered it, and by stretching and tearing an opening of sufficient size was made for the removal of the mass, without damage to the large branches of the inferior mesenteric vessels. Gauze pads packed into the abdominal cavity kept the intestines out of the field of operation and also prevented the blood from getting into the peritoneal cavity.

The tumor was covered by a network of enormous veins that ruptured at the least violence, and it was necessary to work very rapidly in order to secure the renal vessels, the hæmorrhage being tremendous. As soon as the vessels could be felt and partially isolated a large clamp was placed on them and the ureter, the tumor was cut off and the pedicle (artery, vein and ureter) tied with two heavy silk ligatures. No part of the kidney or its capsule was left behind.

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[2] Treatise on Surgery, 1891, p. 661.

[1] Read before the Surgical Section of the Suffolk District Medical Society, May 4, 1892.

Several large vessels in the perinephritic tissue required ligation, and as the patient had lost a large amount of blood, the cavity was packed with strips of iodoform gauze in a handkerchief of the same to stop the oozing, which was considerable. The edges of the openings in the anterior and posterior peritoneum were then united by a continuous catgut suture, thus shutting off the peritoneal cavity. The upper part of the abdominal incision was closed, a small opening being left at its lower end. The gauze was removed on the third day. There was some necrosis of the torn and crushed tissue rendering necessary daily irrigation with hydrogen peroxide.

Recovery was rapid and uneventful. Owing to the silk ligatures there was still a small sinus when he left the hospital.

Some weeks after his return to Cape Breton, he resumed his work as lighthouse keeper.[2]

Dr. W. F. Whitney, who examined the tumor, reported as follows: "The tumor of the kidney was a large, irregularly, rounded mass, the size of the head of a child at term. Microscopic examination showed it to be made up of masses of large epithelial cells separated by a coarse framework of connective tissue. In places, the cells were packed solidly into the spaces of the framework, in others, there was an evident lumen with the cells arranged about it, in this respect recalling the tubules of the kidney. The diagnosis is cancer of a marked glandular type."

The percentage of recoveries after removal of the cancerous kidney is small. One of the later surgical text-books speaks of the operation as one not considered justifiable by the best surgical authorities. The present case shows that this opinion is not correct in all cases. Here we had to do with a cancerous growth still confined to the kidney, and probably not of long duration. The result has certainly justified the operation.

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A CASE OF LARGE CYST OF THE KIDNEY; NEPHRECTOMY; RECOVERY.[1]

BY ERNEST W. CUSHING, M.D., BOSTON, MASS.

Mrs. S., forty-two years old, entered the Charity Club Hospital on March 13, 1892, for operation on a ruptured perineum of old standing. On examination it was found that she had an abdominal tumor about the size of a cocoanut, situated on the left side, at and above the level of the umbilicus, freely movable, but apparently limited in its movements by attachments on its upper part as it could not be made to descend into the pelvis. The uterus and its appendages appeared to be in a normal condition, except that there was a moderate degree of procidentia; no connection between the tumor and the pelvic organs could be discovered. The urine was normal in amount and in its properties and reactions.

The patient, who was married and the mother of five children, stated that she first noticed a small swelling, in the region now occupied by the tumor, when she was sixteen years old, this mass was always freely movable, but was not painful; when she was twenty years old the mass seemed as large as an orange, and now she began to suffer frequently from attacks of nausea and vomiting which recurred at irregular intervals of three or four weeks, and which were always attended with considerable enlargement of the tumor. The most severe of these attacks had occurred about five years previous to her admission to the hospital, when she was quite seriously ill for several weeks. Ever since that attack the tumor had been larger, being of nearly or quite its present size, with occasional periods when it was larger.

A probable diagnosis of wandering kidney with cystic enlargement was made, but the patient did not desire operation for its removal. The perineum was therefore repaired in the usual manner and the convalescence was uninterrupted and recovery complete. Under ether it was very clear that the tumor was not connected with the uterus or its appendages, unless possibly by a very long pedicle, complicated and masked by the presence of new attachments above.

Three weeks after the operation on the perineum, when the patient was just ready to leave the hospital, she had an attack of vomiting with abdominal pain, which she said was like previous attacks only rather more severe. The tumor began to increase rapidly in size until at the end of three days it was larger than a man's head, while severe constitutional symptoms were developed; the temperature rose to 104° degrees and the pulse was 130 and over. The urine was clear and free from albumen. Under these circumstances death seemed imminent and when the state of affairs was explained to the patient she desired surgical relief. The diagnosis was too obscure and the condition of the abdominal contents too uncertain to warrant any attempt to reach the tumor and evacuate it through the loin, and I determined to perform abdominal section at once. Therefore, on April 7th I operated, commencing with an exploratory incision below the umbilicus, in the median line. I soon found that the tumor was not ovarian and that there was no sign of peritonitis; the incision was next extended some two inches above the umbilicus, over the most prominent part of the tumor, this was found to be covered by the peritoneum of the posterior abdominal wall, which was incised, and working carefully the upper part of the thin cyst was enucleated. A large trocar was now plunged into the cyst and more than a gallon of foul urine was evacuated, but still the cyst was not entirely emptied, appearing to be in several compartments. The kidney being entirely disorganized and the ureter apparently occluded, it seemed necessary to complete the removal of the organ, which was accomplished without especial difficulty. By careful enucleation the ureter was presently brought into view; this was followed down as far as possible, ligated with catgut, severed and dropped. The lower part of the cyst was extremely thin and in attempting to separate it from its connections it ruptured, and some urine escaped into the abdominal cavity. Nevertheless, the whole of the kidney was enucleated, the pedicle formed by the vessels which was some three inches distant from the origin of the ureter, was securely sewed off with catgut, using the shoemaker's stitch, the bed of the tumor was carefully cleansed with sponges, and then the whole abdominal cavity thoroughly flushed with hot distilled water. Two glass drainage-tubes were inserted, one to the bottom of the bed of the tumor coming out obliquely at the upper angle of the incision, the other at the lower angle of the wound and reaching to the bottom of the space of Douglass. Curiously enough the lower tube took all the drainage for while nothing could be drawn from the upper tube after the first few hours there was a free discharge stained with blood for two days from the lower tube.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, May 4, 1892.

[2] August 27, 1892, he was strong and well.

Convalescence was uneventful except that there was some mental aberration for about a fortnight; the patient lived mostly on koumiss, which she demanded in large quantities, refusing almost every thing else. The upper tube was removed on the night of the day after the operation, the lower tube the subsequent morning. The wound healed by first intention, and the patient is now in good condition, four weeks after the operation. The urine is abundant and normal.

NOTE. — September 9, patient well five months after operation.

Medical Progress.

RECENT PROGRESS IN FOODS, DRUGS AND ARTICLES OF DOMESTIC USE.

BY B. F. DAVENPORT, M.D.

(Concluded from No. 10, page 241.)

SMOKING OPIUM.[9]

OPIUM is not considered as fit for smoking purposes until it has undergone a fermentative change which, if spontaneous, usually requires not less than ten or twelve months. The opium thus acquires a kind of bouquet more or less delicate, which is appreciated by the smoker, and in particular it has lost the rank odor and acrid taste of burnt horn which characterizes newly-made opium. Also, the kneading of the paste becomes more easy, and the pipe can be smoked without further delay.

M. Lalande published in the *Archives de Médicine Naval et Coloniale*, of 1891, a very complete chemical account of smoking opium, ascribing its peculiarities to fermentative changes. This led M. Calmette, of the Laboratory of Neurobiology, at Saigen, to study the subject, for if the opium could be prepared for consumption in one to two months instead of ten to twelve, the Custom House and Régies would immediately have at their command a capital of 1,500,000 francs, that being the value of the opium undergoing spontaneous fermentation.

In the vats producing the best opium, he found only aspergillus and mucous, bacteria proper being almost entirely absent. The very best old opium he found to have perfectly pure cultures of aspergillus niger. He found it was very easy to raise cultures of this upon M. Raulin's fluid, which when transplanted to opium would germinate easily and run over all its surface forming a wrinkled velvet crust. This fungus will complete the desired fermentation in at most a month, destroying the glucose and dextrine, and changing the tannic into gallic acid, giving it all the qualities of old opium already some years old.

SUGAR, MOLASSES AND SYRUP.[10]

Collections of fifty samples each of sugar, molasses and syrup have been made for the United States Department of Agriculture in Massachusetts, New York, Pennsylvania, Louisiana, California, Nebraska, Kentucky, Ohio, Indiana and District of Columbia.

The total absence of any added substance to commercial sugar is proven by the results upon these 500 samples thus purchased in the markets of these widely different sections of the country. The chief adulterant, if it can be so called, of low-grade sugars, is water. In these, by modern methods of boiling, much water can be incorporated and the sugar made to show almost a white color. This is accomplished by the use of bone-black, and a low temperature in the vacuum pan, for by the black the syrup can be nearly or quite decolorized, and by boiling at 115° to 120° F., a soft crystal is obtained, capable of holding a large percentage of water, and reducing sugar. These sugars find ready sale for cooking purposes. For a given sum, however, a greater quantity of sweetening matter is obtained by purchasing the high grade sugars.

During the process of manufacture all, white as well as yellow sugars, are usually colored some. The white with a wash of ultra-marine blue, to give it a still whiter and brighter appearance. The yellow sugars are also treated with a dilute wash of tin chloride or crystals to cause it to retain its bright color, and not to become of a dead or grayish-yellow. The depth of yellow color set in the sugar depends largely upon the strength of the tin chloride solution. Very little of the solution, however, remains in the sugar, as it mostly passes into the molasses, from which it will, if allowed, mostly settle out. Granulated white sugar derived from beets is liable to develop a characteristic foul odor if kept in tight-closed vessels.

The most proper distinction between molasses and syrup is that the former is the natural product of the manufacture of sugar-cane, sorghum or maple sap, or any product from which a part of the sugar has been removed. Syrup is the product of the refining of these products, or the mixing of various other articles together. No table syrup made from beets is known, for, made from unrefined beet-sugar or the molasses resulting from the manufacture of beet-sugar, it would contain so large a quantity of alkaline materials as to render it unfit for use on the table or even for culinary purposes.

The purpose of admixing glucose with molasses is not now to cheapen the product, as the glucose is not a cheaper substance now that the price of molasses has fallen so low. It is to heighten the value of the mixture by reason of its fine body and lighter shade of color. A glucose mixture is readily detected by its high polarization, both before and after inversion, and by the comparatively low percentage of sucrose. The light color in molasses and syrup, for which there is a strong demand, is also brought about by the use of bleaching agents; and much of the dark, centrifugal molasses from Louisiana is reported to be thus treated before being sold in Northern markets.

TEA AND COCOA.[11]

The names designating the different kinds of tea depend upon the manner of curing the leaf and its relative age, and not, as popularly supposed, to difference in species. The tender, unexpanded, terminal leaf forms the Flowery Pekoe, the next older leaf the

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[9] Rev. Scientifique, February 27, 1892.

[10] Bull. No. 13, Part 6, Division of Chemistry, United States Department of Agriculture.

[11] Bulletin No. 13, Part 7, Division of Chemistry, United States Department of Agriculture.

Orange Pekoe, the next the Pekoe, the next the Souchong (first and second), the next Congou. The six youngest leaves, when mixed together, form Bohea. The manner of curing the leaves makes them into black or green tea.

Tea-brokers in India judge of the quality of teas from the appearance of the prepared leaf, the liquor obtained by infusion, and the turn-out or appearance of the leaves after infusion. The leaf should be black — grayish, with a gloss on it, not dead black — of a uniform shade, size and form. The infusion should be strong, rasping and pungent, and generally dark, although some choice teas yield a very pale liquor. The turn-out leaves should be uniform in color, and preferably it should be of the shade of a bright, new penny.

The Japanese prepare what they term a flat or unrolled tea. The plants are kept in darkness for a week or two before picking, thus producing a finer aroma. As high as twenty-five pickings are made in India during a season, the earlier yielding the finer grades. The India teas are usually about three times as strong as the China and Japan teas. Black tea usually contains more nitrogen-free extract than green tea prepared from the same picking, and this at the expense of the tannin, a part of which is decomposed during its fermentation. This is probably one of the reasons why, in England, the black tea is considered more wholesome than green tea. Leaves which have been damaged in the manufacture, or which from age and other imperfections are inferior, are faced to improve their appearance and price. The teas consumed by the Chinese and Japanese themselves are never so treated. Tea contains a much larger proportion of its peculiar alkaloid, theine, than does coffee caffeine, which chemically and physiologically is identically the same alkaloid.

Perhaps no food material offers conditions so favorable for profitable adulteration, and is so well utilized by the manufacturers, as all cocoa preparations. There is probably no more misleading or misabused term in the language than the term "soluble cocoa." No cocoa in the market contains a very considerable percentage of matter soluble in water, unless the material so dissolved is foreign soluble material that has been added during the process of preparation. The term seems to be used to denote a preparation that allows none of the insoluble matter to deposit from the beverage prepared from it. This purpose may be accomplished in two ways. The material may be so finely ground that a very long time will be required for its deposition, or foreign substances may be added to render the liquid of so high a specific gravity or so pasty that the insoluble matter will not be deposited. The attempt to render cocoa more easily digested by the use of alkalies is quite generally regarded as injurious, and the investigations of Stutzer show that the effect is opposite to that desired. Experience shows that the soap formed by this treatment is not agreeable to the stomach.

Teacher. — How many bones have you in your body, Jimmie?

Jimmie. — Two hundred and nine.

Teacher. — But the other pupils have not so many.

Jimmie. — Well, they ain't had fish for dinner, like me. — *Pharmaceutical Era.*

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

REGULAR meeting, Wednesday, May 4, 1892, DR. A. T. CABOT in the chair.

DR. A. T. CABOT showed photographs of a case of lymph scrotum, and also showed specimens of the filaria sanguinis hominis. The case will be reported later. He also showed

A FIBROID TUMOR OF THE UTERUS,

removed that morning. The case was interesting, because difficult of diagnosis. The tumor, which had existed a year or more, was central, about the size of an adult head, and adherent to the anterior abdominal wall. About ten days previously an incision had been made to remove the tumor, but upon cutting down upon it, the peritoneum was so much thickened and there was so much infiltration with a thick, dense, fibrous mass in the sub-peritoneal tissues, that the tumor, which was absolutely continuous with the peritoneum below, was explored and found to contain pus. The opening was enlarged, and a pus cavity containing two or three ounces was opened.

The character of the swelling now being doubtful. it being thought possible that it was a case of localized tuberculosis, portions of the wall were cut away for microscopical examination, and the pus-cavity was filled with iodoform gauze. The patient bore this operation perfectly well, and the tumor rapidly shrank in size.

The microscopical examination of the portions removed showing that it was probably a fibroid with a sloughing centre, a second operation was done and the tumor was removed. It was extremely adherent to the whole anterior surface, and was peeled out with a great deal of difficulty. It occupied the whole fundus of the uterus, the amputation being about at the internal os.

DR. E. O. OTIS read a paper on

A FRACTURE OF THE CERVICAL VERTEBRÆ, WITH AUTOPSY.[1]

DR. G. L. WALTON reported cases of

DISLOCATION OF CERVICAL VERTEBRÆ,

and exhibited photographs illustrating the characteristic deformity of unilateral dislocation. The position of the head resembles that of torticollis resulting from spasm of the sterno-mastoid, the distinguishing feature being that this muscle is lax on the side which would be affected in torticollis while that on the other side is put on the stretch, together with the other muscles of the neck. The reader reported that he had seen in all fourteen cases of dislocation without fatal result, and had been communicated with regarding another.

The important point of the contribution related to the method of reduction. Forcible traction is generally used, but always without result, whereas spontaneous reduction had taken place in a number of instances, showing that force was not the element lacking to success. The reader had experimented with Dr. M. H. Richardson upon the cadaver and the result had been extremely satisfactory. Unilateral dislocation having been produced upon the subject, it was found that no amount of traction separated in any degree the misplaced processes, but that extending the head diagonally, in a direction between the backward line, and the lateral, on the side of the convexity, the lateral processes and laminæ of the vertebræ furnished a fulcrum by means of which the misplaced articular process was readily lifted, upon which a slight rotatory movement completed the reduction. It would seem that in bilateral dislocation a similar process should be attempted, first on one side, then on the other. It is probable that this is the movement which takes place in spontaneous reduction. No opportunity had offered for the practical test, the cases at present under observation being of too long standing to warrant the attempt considering their comparatively comfortable condition.

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[1] See page 261 of the Journal.

Dr. M. H. Richardson: I am much interested in this subject, because several times I have met with cases of dislocation of the neck, and in none of them have I been able to accomplish a reduction of the displaced bone. I recollect quite a number of cases, not only in my own wards but in those of my colleagues at the hospital, where death or paralysis and permanent disability have followed this condition. In one of the cases which Dr. Walton has referred to — that of Dr. Warren — I remember that a good deal of force was used in trying to reduce the dislocation by extension and counter-extension. The patient having been thoroughly etherized, several men pulled on the legs. while I applied a counter-extension by grasping and manipulating the head and neck. This procedure accomplished nothing. He was discharged as incurable, and sent to Tewksbury to die. A year or two after, I met him successfully engaged as an elevator boy. There was still some of the characteristic deformity of a cervical dislocation. I have taken great interest in Dr. Walton's suggestions for the reduction of cervical dislocation, and I have made with him a number of dissections at the Medical School which have demonstrated to my satisfaction the feasibility of this method of reduction. We must bear in mind, however, that artificial dislocations of the neck on the cadaver, like those of the hip or shoulder, do not give more than an approximate idea of the difficulties which attend this condition during life, owing, of course, to the fact that the muscles no longer contract. A dissection of the bones of the neck, with special reference to the reduction of a dislocation, has convinced me that Dr. Walton's statement cannot be denied — that direct traction is not efficacious in restoring the displaced bones without tearing the ligaments or intervertebral discs. Something must give way. On the other hand, by intelligent manipulations the articular processes slip easily and naturally into place without complicating the already existing lacerations.

Dr. O. K. Newell: I happen to have one or two cases of this sort. It seems to me unless there were a separation of the vertebral body from the disc, effective extension would be practically impossible. In reduction of dislocation, considering the enormous strength of the muscles of the neck, the great essential is complete unconsciousness through ether, if the patient is not already unconscious, with relaxed muscles; and then I believe the reduction would be perfectly simple, according to the methods Drs. Richardson and Walton have described. Reduction might be prevented by a condition similar to that in thumb dislocations, where a part of the bone comes out and buttonholes the ligament behind it. In such a case it would be almost impossible to reduce without operation.

Dr. E. W. Cushing: I had a case twenty years ago, while house-officer in Bellevue Hospital. A sailor was brought in with the head distorted. There was a dislocation and fracture in the cervical region. I was alone, and it was in the night. I acted on general principles, pulled the head the other way from what it was, and it went into place. I cut a piece of blanket, folded it, made a plaster-of-Paris bandage, and put that over the head; and when that was set, it became rigid. He got entirely well.

I saw one other case in 1874, that of a young man who while doing the giant swing in the Technology Gymnasium fell and broke his neck. He was utterly paralyzed and died within three days.

A CASE OF LAPAROTOMY FOR REMOVAL OF A TUMOR OF THE KIDNEY; RECOVERY,[2]

by Dr. S. J. Mixter.

A CASE OF NEPHRECTOMY; RECOVERY,[3]

by Dr. H. W. Cushing.

A CASE OF LARGE CYST OF KIDNEY; NEPHRECTOMY; RECOVERY,[4]

by Dr. E. W. Cushing.

Dr. Cushing asked what the effect would be of opening a cyst of the kidney, when it does not seem to be malignant, and sewing it into the abdominal wall, thus attempting to save what is left of the kidney. I do not seem to find much information about that. It would be a conceivable thing to do.

Dr. Warren: I once treated a cyst of the kidney by a permanent opening through the loin. The patient got along well. It is now two years since the operation.

Dr. Cushing: In this case it would have been easier to match the peritoneum together, and leave the cyst with a fistulous opening, which possibly would have healed.

Dr. Cabot: About a year ago I was asked to operate by another gentleman who had got the patient all ready for operation, and I therefore did not examine the patient before the operation. I went to operate on an ovarian cyst. There was a large cyst filling the whole abdomen. I opened; and at first there seemed no reason to think it was not an ovarian cyst, lifting the peritoneum in front. I divided the peritoneum, shelled the cyst out, and emptied with a trocar. This yellow fluid ran into a dish on the floor, so that I did not smell of it to distinguish it from other cystic fluid that you are likely to get from the cavity of the peritoneum, but presently the adhesions carrying me up behind the peritoneum I did make an examination of the fluid that had run out, and found I was dealing with an enormously distended hydronephrosis, and not as I supposed with a broad-ligament cyst that had pushed the peritoneum up in front of it. After working for a long time — it was an old woman, and this cyst was very adherent — and after considerable work, finding that her strength was not holding out properly for the operation, and that the cyst was not separating satisfactorily, I cut off a large part of the cyst, and stitched the edges of the cyst to the abdominal wound in the way Dr. Cushing asks about.

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[2] See page 262 of the Journal.

[3] see page 257 of the Journal.

[4] See page 263 of the Journal.

The patient lived, I think, three days only, so that I do not know how the case might have turned out. She was old and frail. The other kidney shut off work.

I have had one case in which, operating through the loin, I have had hydronephrosis heal up and get well and the kidney go on functionating. In another case I aspirated a cyst of the kidney and cured by one aspiration.

When a commencing hydronephrosis occurs, it may possibly cause a kink in the upper part of the ureter, just at the entrance of the kidney; and that twist or kink is kept up by the distention; and relieving that distention may relieve that twist. That has seemingly happened in a number of cases. We all know that cases of hydronephrosis are intermittent, the kidney filling up, becoming quite a large tumor, and then disappearing again; and probably that has the same cause which sometimes occurs in cases of movable kidney. That being the case, it is conceivable that by relieving the pressure and dragging of a large cyst, the ureter may after that succeed in emptying the pelvis. Dr. Mixter, I notice, ligated all the contents of his pedicle together. It succeeded well. He put on a good many ligatures. I lost one patient through the same manœuvre. My case was operated through the loin.

Dr. Mixter: There was such tremendous hæmorrhage that I did not want to lose any time.

Dr. Cabot: In the case I spoke of, the pedicle slipped out through the ligature, and the patient died several hours later from hæmorrhage. The ureter pulled out first, and that loosening the ligature, the whole thing went out and tremendous hæmorrhage occurred. I think it is better, as a rule, to ligature the ureter separately. I think, in all the operations reported to-night, the ureter was left in, and not brought out as Thornton recommends.

Dr. H. W. Cushing: Mine was left in the abdomen.

Dr. Cabot: Apparently they all worked well. Thornton makes a point of that — of bringing the ureter out in the angle, for fear of possible urine leakage through the stump.

Dr. E. W. Cushing: Dr. H. W. Cushing's case was harder to handle than mine. There might be a case where it would not be easy or wise to enucleate, and where opening the cyst and stitching to the abdominal wall would seem to be a feasible thing to do. It seems as though it would be very easy to do.

Dr. E. W. Cushing then showed

FOUR SPECIMENS OF VAGINAL HYSTERECTOMY.

One of the cases shows the very incipiency of the disease. The lady was about sixty years of age. She began to bleed. On the posterior lip I found a little growth about as large as a filbert, which I snipped off in the office. On examination it was found to be malignant. I removed the uterus. Further examination shows it was undoubtedly malignant. In such a case hysterectomy is easy.

The second case was a woman about sixty. This case illustrates the fact that you cannot tell from the outside how far up the disease goes, and it is easier to remove the whole organ than try to remove the upper part of the disease tissue. I do not think the opening of the peritoneal cavity increases the danger much if you have proper drainage.

The third case was caught in the beginning. She was the mother of twelve children. There was a foul discharge from the uterus. When I curetted the uterus, I got white friable material which I knew was malignant. I removed the uterus, and although the organ was large, there was little or no difficulty. A sarcomatous growth is sessile in the upper angle of the uterine cavity.

The fourth case was a woman thirty years old. Hæmorrhages last winter. The diagnosis was made a month before operation; and that was a very difficult case simply because there was a commencing infiltration of the right broad-ligament. She had had no children, the vagina was narrow and long, the uterus strongly anteflected and difficult to turn back.

These represent the three grades — very easy, average and very difficult.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-fifth Annual Meeting, held at the Fort Griswold House, New London, Conn., July 19, 1892.

The Society was called to order by the President, Dr. Gorham Bacon, of New York.

The first paper was entitled

CASES OF MASTOID DISEASES EXHIBITING SOMEWHAT EXTENSIVE CARIOUS PROCESSES,

by Oren D. Pomeroy, M.D., New York.

Case I. J. W., aged nineteen years, applied November 22, 1887. In December, 1885, he had a post-aural abscess, which was incised. A few months afterward, the mastoid was freely opened, and carious bone removed. On entering the hospital, the mastoid opening was nearly closed and the middle ear was suppurating. There was a swelling below the auricle — red, painful, and preventing free movement of the jaws. Pressure on this part evacuated pus from the tympanum.

November 24th, the swelling has extended to the face. Temperature 101.4°. Pulse rapid and weak. Nourishment and stimulants used. The patient was etherized, and the granulations in the tympanum were removed by the curette. The opening in the mastoid was extended downwards, and opened into a large cavity that seemed to include the mastoid and tympanum. A large quantity of pus was evacuated by syringing. Temperature in the evening, 103.6°.

November 25th, temperature 99°, within two days an abscess in front of the velum on the left side was opened. This showed no apparent communication with the ear cavity. During the next three days the temperature was nearly normal, and after this became so. Antiseptic irrigation was continued. After two weeks the discharge became much less, and the carious cavity showed signs of filling up with healthy tissue. The abscess in the throat was probably due to the ear trouble.

Case II. M. G., aged thirty-four years. Admitted February 20, 1890. In December last had acute suppurative otitis in left ear, with mastoid periostitis. Wilde's incision was done. On entering the hospital, there was an opening in the mastoid three-quarters of an inch deep, into which the little finger could be thrust, at the bottom of which pulsation was apparently felt. The meatus was filled with dried epithelium and pus. There was elevation of temperature from rheumatism in the left hip-joint. The mastoid cavity was cleaned out and packed with iodoform gauze. Large doses of iodide of potassium were given. Temperature a little elevated in the evening.

Early in March easily detachable bits of carious bone were removed with curette and gouge; temperature 103°, but this was reduced by phenacetine. By March 20th, temperature became normal. Stimulants were freely used; and the patient became much better, and was able to walk about the wards.

April 7th pieces of carious bone were removed by the bone curette and gouge; other portions were washed out by the syringe. Considerable granulation material and a cheesy substance were also removed. The part was dressed with iodoform gauze after irrigation with bichloride solution. The patient was discharged April 21st, much improved.

Case III. T. S., aged sixteen years. Came into the hospital August 11, 1891, with an acute suppurative otitis media of both ears. Six days later a Wilde's incision was done on the left mastoid. The discharge continued from each ear when he left the hospital some weeks later.

March 23, 1892, he came under the author's care for the first time. Over the left mastoid was a small aperture leading into a large carious cavity, which included the mastoid and tympanum. This opening was enlarged by a stout knife, so that the finger could be introduced into the mastoid cavity. Dead bone and granulations were found. On syringing, a soft, flocculent material, resembling broken-down brain substance, was removed in large quantities. Granulations were removed from the drum cavity by the curette. The opening in the mastoid was more than an inch in depth. Antiseptic irrigation was practiced, and cotton smeared with vaseline (5000 parts) and bichloride (one part) was applied to the wound. After three weeks, granulations and small bits of bone were removed by the curette. On May 10th an abscess appeared above the meatus and communicating with it. This was opened, and found not to communicate with dead bone. It was treated antiseptically and by a compress.

June 20, 1892, the mastoid is closed, and the discharge from the ear has nearly ceased. He hears words loudly spoken close to the ear.

The right ear in the meantime had filled with granulations, which were removed with the curette. On April 8th, it was found that pressure on the mastoid caused pus to exude from the meatus; and a Wilde's incision was done, expecting to find an opening in the mastoid but none was found. The wound was kept open by a cotton tent.

May 9th, there was an opening into the mastoid; and two or three considerable masses of dead bone were drawn out with artery forceps. This left an enormous cavity, which seems to include the tympanum. Polypi were also removed. There was much hæmorrhage. Antiseptic irrigation was practised, and vaseline and bichloride on cotton was applied. Since this time granulations and bits of dead bone have been removed.

June 20, 1892, the external wound has closed, with considerable sinking, and the ear has almost ceased discharging. The temperature has some of the time been above normal, and it seemed as though recovery would be impossible.

Case IV. A. W., aged two years, has suppurative otitis of the left ear, dating back five months. The author first saw her November, 1890, when the tympanum was full of polypi. There was a large carious opening in the mastoid which was filled with granulations. Small bits of carious bone and cheesy-looking detritus were removed. The wound was irrigated, and dressed with bichloride gauze. Patient was much improved in a few days. After another month more granulations were removed and some dead bone. Four months later, the mastoid opening was closed, with considerable sinking. The discharge from the ear diminished after each operation.

Case V. J. S., aged four months, had a swelling behind the left ear, of four days' duration, with a discharge from the ear for one month. A Wilde's incision was made and an opening into the antrum found. There was considerable discharge of pus. Antiseptic irrigation and bichloride-gauze dressing. After a few days a probe was passed in, one and one-half inches in the direction of the tympanum, touching bone. This opening was enlarged by the drill and kept clear by syringing with an antiseptic solution. The patient was brought very irregularly; the treatment was not carried out intelligently, and the child died two months later, with brain symptoms.

Case VI. A. P., Italian, aged forty-two years, has an otitis media, suppurating since three months, with a swelling over the mastoid. The latter was at once incised, and the handle of a scalpel could be thrust through an opening in the cells, which seemed to include the tympanum in its area. Antiseptic irrigation was practised for some weeks. March 22d the temperature was 100.2°. Granulations were removed from the mastoid. On the 23d there was considerable œdematous swelling about the mastoid, which subsided in a few days, and the temperature became normal. On March 29th, some pain in the side of the head was relieved by quinine. A subsequent headache was relieved by bromidia. More granulations and dead bone were removed. April 18th, temperature 100.5°, with headache. The next day was better. Being offended at the nurse, he made a serious attack on her. He was then sent to the New York Insane Asylum, to be examined as to his mental condition. He was, however, soon discharged from the asylum. The patient has recently been heard from and the ear symptoms are not urgent.

Case VII. A. P., aged forty-two years, has a suppurative otitis media on the left side, of one week's duration, and a painful swelling over the mastoid since two weeks. Pus was evacuated by a Wilde's incision. A large opening was found in the mastoid, extending inward one and one quarter inches from the skin surface. It was treated by antiseptic irrigation, using a hard-rubber drainage-tube. After four weeks of treatment, the external wound was nearly closed; but the temperature was 99.6°, and a sequestrum of bone was found. There was also apparently some cellulitis of adjoining soft parts. The opening was enlarged, and more dead bone removed. After this, there was decided improvement, and the patient disappeared from observation.

In reviewing these cases it will be seen that no effort was made to remove all the dead bone; but whatever was loose or readily detachable was taken away. Adequate antiseptic drainage was carefully looked after, and the vital energies were kept up by stimulants, tonics, food and proper nursing.

It seems unaccountable that only one of these cases resulted fatally, when it is known that any considerable quantity of dead bone in the vicinity of the brain, may induce fatal cerebral disease. The author did not think it proper to attempt the removal of dead bone where the meninges were in danger of being encroached upon.

Numerous cases are on record (one in the author's book) where a considerable portion of the bone has separated, leaving the uncovered meninges without fatal consequences. Moreover, when all the dead bone is removed, reparative action does not commence until a new barrier of dead bone has been established.

PRELIMINARY NOTES ON CRANIOMETRIC STUDIES IN RELATION TO AURAL ANATOMY,

by Dr. B. Alexander Randall, of Philadelphia.

The author referred to the numerous careful studies made of the temporal bone with special relation to operative procedure and the conflicting results of Kœmer and Schultzka as to a relation between the cranial index and the dangerous position of the lateral sinus and the middle cerebral fossa. Recognizing from the first the need of more extensive examinations, he had been accumulating data bearing on the matter, and offered now a preliminary report, principally to secure criticism of his methods. Only 122 skulls (73 broad-headed, 33 long-headed and 16 medium in index) were used in the tabulation; and the only clear showing was that maximum or minimum dimensions might be found on either side and in any form of skull. The greater danger of the right side and of the brachycephalic skull receives slight confirmation, the cerebral fossa being actually more often lower on the left; but no deductions should be attempted from so small a series of studies, and any indications are probably worthless which are derived from less than one thousand skull measurements.

Dr. Charles J. Kipp, of Newark, N. J., reported a case of

PURULENT INFLAMMATION OF THE MIDDLE EAR,

with double optic neuritis and other symptoms of intracranial lesion, but without tenderness of the mastoid process, in which the opening of the mastoid cells was followed by rapid subsidence of the optic neuritis and cure of the disease.

Particular attention was called to the absence of tenderness over the mastoid, even on percussion, and to the desirability of repeated ophthalmoscopic examinations in prolonged middle-ear disease.

MASTOID CASES,

by Dr. C. J. Blake, of Boston.

Of 25 cases of mastoid congestion and inflammation seen in the first six months of this year, three were treated by continuous cold coil, with excellent effect. The remaining 22 cases came to operation at various stages of the mastoid disease, and with various complications. Two cases died, one on the ninth day, complicated with pneumonia; and the other on the tenth day, with meningitis from extension of the suppurative process from the middle ear through the tegmen tympani.

CASE OF CHRONIC PURULENT OTITIS MEDIA; OLD PULMONARY TUBERCULOSIS; OPENING OF MASTOID; DEATH FROM ACUTE BASILAR MENINGITIS; AUTOPSY,

by Dr. H. Knapp, of New York.

The patient was a healthy-looking man, aged thirty-five years. About the middle of April, 1892, he began to complain of headache, apparently due to neuralgia. This, however, was succeeded by slight elevation of temperature; but there was no change in the pulse, no tenderness over the mastoid, and the pupils were normal. By April 27th there was drowsiness, with nervous movements of the hands. Meningitis, dependent upon aural disease was diagnosed by the attending physician. The patient was seen by two prominent neurologists, who diagnosed cranial abscess from ear disease. The speaker saw the case May 3d. There had been discharges from the right ear for three years, which had ceased during the previous week. Temperature 102.2°; headache; stupor; incoherent and difficult speech; delirium; pupils and fundus normal; no painful spot on percussion of skull. The diagnosis was concurred in, and operation urged, which was done the next day. The mastoid was found sclerosed throughout. The superficial portion of the bone presented some evidences of disease, but the deeper the bone was exposed, the healthier is appeared. The operation was then suspended. The patient continued to sink, and died a few days later.

The autopsy showed marked evidences of basilar meningitis. The lungs were then examined, and distinct evidences of pulmonary tuberculosis found. The patient had presented no symptoms suggesting examination of the lungs, and all the indications pointed to cranial suppuration following aural disease.

A CASE OF PYÆMIA FOLLOWING ACUTE SUPPURATIVE OTITIS; RECOVERY,

by Dr. J. B. Emerson, of New York.

A. D., female, twenty-four years of age, admitted to Manhattan Eye and Ear Hospital April 4th. April 1st, pain appeared in the left ear, followed on the 3d by discharge. The ear trouble had followed grip. Temperature on admission was 100°, pulse 104; free purulent discharge. No special tenderness over mastoid, no redness or œdema. The temperature to April 10th varied between 101° and 102°. April 10th, morning temperature 101°, slight chill; evening temperature 105°, pulse 125. No pain except in back of neck. Tenderness much less over mastoid and left side of head. No redness or œdema over mastoid. Ear discharging profusely. Condition continued about the same until April 15th, when evening temperature reached 105.4°. No redness, œdema or tenderness over mastoid; free discharge from ear; signs of septic pneumonia. The general condition of the patient continued to improve; but an abscess developed over the right sterno-clavicular articulation. Later a second collection of pus formed over the sternum. May 18th, an abscess formed above the sternum. This was opened May 29th; swelling formed over left side of the neck. June 3d, an incision was made into the swelling, and pus found at a depth of one and a half inches. No direct communication with the mastoid could be found. Following this the patient slowly and steadily improved, and was discharged August 4th, the treatment extending over a period of four months.

MASTOID OPERATION IN A CASE OF MIDDLE-EAR DISEASE, WITH SEPTICÆMIC SYMPTOMS AND CEREBRAL COMPLICATIONS,

by Dr. T. Y. Sutphen, of Newark, N. J.

March 17, 1892, the speaker was called to see Miss B. K., sixteen years of age. There had been chronic otitis media of the left ear for several years. For a few days there been intense pain and a temperature of 105°. No sign of mastoid trouble other than the pain. The next day there were general septicæmic symptoms with chills, alterations in temperature, and vomiting. A hard swelling beneath the sterno-cleido-mastoid muscle was discovered. May 22d, the mastoid was opened. There was only a drop or two of purulent fluid. The condition of the patient continued very unfavorable until May 30th, when pus began to flow freely from the mastoid wound. The temperature then fell to 99°, and the patient made a rapid recovery.

A CASE OF MASTOID DISEASE, FOLLOWING AN OPERATION FOR THE REMOVAL OF ADENOID VEGETATIONS.

by DR. GORHAM BACON, of New York,

The patient, A. R., thirty years of age, came to the New York Eye and Ear Infirmary, February 16, 1892. She said that a physician had, on February 8th, removed adenoid vegetation from the naso-pharynx, by means of the index finger, and completed the operation the following day with forceps, she having a subacute pharyngitis at the time. Two days after the operation, she had severe pain in the right ear, followed by a muco-purulent discharge on February 16th.

On the day of admission, she had a very anxious appearance, and had suffered from well-marked mastoid symptoms for several days. She was immediately put to bed, and the Leiter coil applied, and the ear douched frequently with a warm boracic-acid solution, when these symptoms soon disappeared.

February 23d, a periosteal abscess on the right side was opened, and about a drachm of pus escaped. An incision in a similar abscess on the left side gave a negative result. The patient made a good recovery, and at no time did the temperature go above 100° F.

The case was reported because the writer had not seen in the literature of the subject, any mention made of acute otitis media and mastoid disease following the operation for removal of adenoid vegetations. It is possible, however, that the carbolic-acid solution which the patient was advised to syringe through the anterior nares by the physician before she came under the author's care might have had something to do with the etiology of the disease.

THE VALUE OF WEAK SOLUTIONS OF BICHLORIDE OF MERCURY IN THE TREATMENT OF OTITIS MEDIA SUPPURATIVA,

by DR. SAMUEL THEOBALD, of Baltimore.

The author stated that boracic-acid in fifteen-grain solution was still, as it had been for some years, his first choice in the treatment of all cases of recent, and in most cases of chronic, otorrhœa. Boracic-acid, however, occasionally fails to accomplish what is expected of it, and in exceptional instances aggravates rather than lessens the inflammation. It is in these cases that the speaker has recently used with very good effect, weak solutions (usually 1 to 8,000) of mercurial bichloride. The ear is simply syringed with the solution. Unlike some who have recommended the use of this agent in otorrhœa, he has not usually found it necessary to repeat the syringing more than once in twenty-four hours. Notes of several cases were given, in which a prompt arrest of suppuration and closure of the perforation in the tympanal membrane followed the employment of the bichloride solution after boracic-acid had been used without effect.

DR. H. KNAPP, of New York, exhibited a specimen showing

PERFORATION ON THE MEDIAL SIDE OF THE MASTOID,

removed from a patient dying from cranial abscess.

(To be continued.)

Recent Literature.

Temperament, Disease and Health. By FRENCH ENSOR CHADWICK, Commander, U. S. N. 12mo., pp. vi, 85. New York: G. P. Putnam's Sons. 1892.

The author of this little treatise advances the hypothesis that temperament is largely "dependent on the molecular change in the physique," and that "a failure to have elimination keep pace with accession of material, is the primal cause of organic disease." He attempts to support this view, not very satisfactorily, as it seems to us, by a review of the doctrines of bacteriology. Many bacteria, he thinks, would not assail us were there not scavenging to be done. His method of aiding elimination is simple and harmless. The skin and especially the feet are neglected. A morning bath, and a second bath with a complete change of clothing before dinner, will, he believes, be of great benefit in aiding elimination by the skin.

Essentials of Bacteriology. Being a concise and systematical introduction to the study of micro-organisms for the use of students and practitioners. By M. V. BALL, M.D. Philadelphia: W. B. Saunders. 1891.

The second part of this little book, and especially that part relating to pathogenic bacteria, shows a good deal of skill in the arrangement and treatment of the subject, and will make the book of value to those who have occasion from time to time to do some bacteriological work. The first part, on "General Considerations," is much too brief and often inaccurate. A student making his first acquaintance with the subject would quickly get confused, while the practitioner who wished to refresh his knowledge would not find the subject matter well arranged or the definitions clearly, accurately and concisely given. Some essentials are unmentioned. To write a book of the essentials of a scientific subject is probably the most difficult task that an author can undertake. And though the volume before us has many good points it does not fill the demands which should reasonably be made.

Hydrotherapy at Saratoga. By J. A. IRWIN, M.D. New York: Cassell Publishing Company. 1892.

This little book contains a fair and unprejudiced estimate of the scope and value of mineral waters in general and of those of Saratoga in particular. While not intended as a guide to self-treatment it furnishes to persons who may visit Saratoga and make use of its waters, such general knowledge of their characteristics and modes of action as is desirable. It also contains for the physician not already familiar with the subject, practical and interesting information.

The first five chapters give the early history of Saratoga and its advantages as a health resort, treat of the origin of mineral waters, of the geological conditions at Saratoga and of the classification, analysis and composition of its waters. The remaining chapters discuss the science of bathing and the therapeutic applicability of the waters, with directions as to their use.

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THE CHOLERA EPIDEMIC.

The present epidemic of cholera has been characterized by its very rapid westward advance. It is only two months and a half since it crossed the Caspian Sea, and less than a month since it appeared west of Russia. In these days of rapid transportation, and emigration of large masses of squalid people, the only means by which wide-spread diffusion of the disease can be prevented is by thorough cleanliness, isolation and detention, especially along the lines of travel. It appears to be directly owing to lack of these at Hamburg that Western Europe and the United States are now threatened. Hamburg presented filth conditions not inferior to those which had invited the devastations recently of Russia, and of late years of Naples, Sicily, Spain, Marseilles, Toulon, and the mild outbreaks of Paris. Most of these cities had learned the lesson of cleanliness, Hamburg had not: the Elbe was filthily polluted, and it furnished part of the drinking-water of the city, very ill-filtered or unfiltered.[1] The authorities of the city appear to have been either negligent or culpable in allowing emigration from Russia to continue through the city, and concealing the first appearance of the disease. Before other States were fully prepared, infection was carried in all directions.

The mortality in the present epidemic in India, Persia and Russia has apparently been as high as in any other cholera epidemic. In Russia, the deaths from this cause alone have, during the present year, reached 150,000.[2]

Asiatic cholera is essentially a filth disease; it is carried by dirty people to dirty places, it is not contagious after the manner of small-pox, scarlet-fever and measles, but goes into the body with food. These statements, even if they need some modification to be absolutely true, are near enough the truth to be worthy of wide publication. If they were better understood, the cholera riots in Russia and the popular uprising at Fire Island would not have occurred. Our Boards of Health in different parts of the country are now distributing bulletins embodying these principles, and suggesting means for making them of practical use.

Dr. E. O. Shakespeare, who has recently pubished "A Report on Cholera in Europe and Asia," the result of several months' study of the subject abroad, in a paper advocating the establishment of a national quarantine system in charge of the Federal government, in place of our present State system,[3] says that the best equipped and administered of our quarantine stations as they now exist would be unable long to cope successfully with an uninterrupted stream of immigrants from infected districts. The best equipped quarantine station is New York, but its capacity would be nearly filled, without crowding, by a thousand infected immigrants. That the capacity for caring for passengers held as suspicious is sadly deficient has become very evident during the past week. Dr. Shakespeare's paper goes to show that a nation's quarantine like a bridge, is no stronger than its weakest part, and that the national government is in a much better position to form a solid barrier than isolated authorities.

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BERI-BERI IN THE JAPANESE NAVY.

The Japanese Minister of State for the Navy, has recently published a short review of the preventive measures taken against kak'ke or beri-beri in the Japanese navy. These were so eminently successful, and resulted so completely not only in eliminating the disease from the navy, but also in improving the general health of the service, that Japanese naval officers are justly proud of it. Director-General Takaki, in 1880, noticing the great difference between the number of kak'ke cases on board ship and in barracks, came to the conclusion that the food supply was responsible for a large amount of the disease. A few years later by a personal application to the Emperor he obtained the appointment of a special committee. As a result, in the year 1884 the dietary of the vessels of the navy was entirely remodelled, the principal changes being in the substitution of nitrogeneous for non-nitrogeneous food; the amount of animal food was much increased, barley and other grain, condensed milk, and other more or less nitrogeneous foods substituted for rice. A war vessel had just arrived from a long cruise in South America, and had had during 271 days, 160 cases of kak'ke in a crew of about 350. Another vessel with the new dietary, was despatched for the same cruise in the next year, and on this voyage, the conditions with the exception of the food being practically the same, the number of cases fell to sixteen. In the navy as a whole the number of cases of the disease dropped suddenly after the improvement in the scale of diet. In 1882 there were 1,900 cases in 4,700 men, in 1883 1,200 cases, in 1884 100, in 1885 41, and since this date the disease has become practically extinct. The improvement upon the general health of the men has also been very noticeable. In the year 1882, 12,000 general cases were reported; in 1885, 6,000; and this number has decreased since. Surely no better argument is needed to show that beri-beri is essentially a disease of malnutrition. Dr. John C. Berry, Director of the Doshisha Hospital, in a report of the institution for last year, says that he now approaches the treatment of kak'ke confident of success. The treatment pursued by him is in general, salicylate of soda with sweet spirits of nitre and acetate of potash, with strophanthus if necessary for the heart, and bromide of soda in case of labored breathing and rapid heart.

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[1] Mr. Ernest Hart: British Medical Journal, September 3d.

[2] Shakespeare: Medical News, September 10th.

[3] Loc. cit.

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THE MATTEI CURE FOR CANCER.

The Mattei treatment of cancer was one of the most widely advertised of the numerous medical quackeries which have arisen of late years. It became so widely known in England and so many testimonials of its wonderful cures were presented that it received a great deal of free advertising. In response to certain representations made by Lady Paget in a monthly periodical, and by the editor of the *Review of Reviews*, a committee of investigation was formed in the early part of last year, to inquire into the claims of the treatment. The committee consisted of Sir Morell Mackenzie, Mr. Lawson Tait and Dr. G. W. Potter.[1] It seems remarkable that a nostrum, the composition of which was kept secret, except that it was given out to be bottled electricity of different colors, supplemented by certain globules, should have been the subject of serious investigation, but as several people of influence and education had announced themselves as believers, and as the Matteists openly avowed that they courted full investigation, it appeared that to bring to light its true character would be an important public service. After the committee was ready to work, the champions of the cure began a series of tactics to prevent themselves from being proved impostors. At first, on one pretext or another, they declined to receive for treatment each case of genuine cancer as it was presented to them. After it became evident to the public that they were doing this, they agreed to take five cases of genuine cancer of the breast. These five cases were treated by the Mattei system for a year, under the observation of the committee, but as was to be expected, they grew steadily worse. The editor of the *Review of Reviews*, who at the outset was a strong partisan of the method, and who appears to have acted in the capacity of an umpire, began to see that the Matteists were not gaining credit by their results. When these five cases were evidently not being cured, the Matteists requested the committee to report on old cases which they produced, claiming that they had already been entirely cured. This the committee declined to do, and the champions of the treatment began to make technical objections to different points in the investigation. The editor tried to keep them up to their part and explained away all objections which they raised. Finally, the Matteists positively declined to continue the treatment of the cases under the observation of the committee, thus making an ignominious retreat. The chemical analysis of the electricities, the potions of the Matteists, showed no other reaction than that of plain distilled water. In spite of the exposure of the treatment of Count Mattei, this latest cure for cancer does not appear to have entirely died out.

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MEDICAL NOTES.

Cholera.— During the past week the reports from Europe have been favorable. The number of cases and deaths from cholera reported in the countries west of Russia are less than a week ago. Except in Hamburg the epidemic is not as yet at all serious, in fact that city remains the only one in which the epidemic has become at all wide-spread. The disease seems to have been entirely stopped in England. During the past week the number of cases and deaths in Hamburg is less than during the preceding week.

At the New York quarantine, in addition to the three infected ships held last week, the *Scandia*, another steamer of the Hamburg line, arrived in a worse condition than any of the preceding vessels. There had been 63 deaths from cholera upon her at sea and 20 more died in port, leaving 50 still suffering from the disease, and making a grand total of 133. This is larger than the record of all of the other infected ships together, and consequently increased the seriousness of the situation in New York materially. The *Wyoming* of the Inman line was found to have two or three cases which broke out after the vessel arrived in port, but luckily before she was allowed to get up to her dock.

Much popular indignation has been aroused by the fact that the cabin passengers, especially of the *Normannia*, were detained upon the infected ship. They were finally transferred to an old Sound steamer, but the next day Fire Island was purchased by the State to be used as a quarantine station for these passengers. After everything had been prepared to receive them, there was a popular uprising of the inhabitants in the neighborhood of the island to prevent their landing, which with the help of an injunction from a local court was for some time successful. The governor, after the injunction was withdrawn, found it necessary to call out the militia in order to prevent the interference of the inhabitants. The New York Chamber of Commerce have appointed a committee to co-operate with the health authorities and to advise on quarantine matters. This committee consists of Drs. A. Loomis, A. Jacobi, E. J. Janeway, Stephen Smith, R. D. Derby, T. Mitchell Prudden and Allan MacLane Hamilton.

Chicago Drainage Canal.— The canal which is to take the sewage of Chicago towards the Mississippi and relieve the lake and the water-supply from the filth which is now poured into it in large quantities, has been formally begun. This canal will take from Lake Michigan 600,000 cubic feet of water a minute, which it is hoped will be enough to dilute the sewage sufficiently to make the region tolerable through which the canal will pass. From the point at which the Chicago River leaves Lake Michigan to the Union Stock Yards is about four and a half miles, and it is at this point that the canal will leave the Chicago River and run about thirty miles to the Des Plaines River near Joliet. It is estimated that it will take four or five years to complete the work and that the cost will be from twelve to twenty million dollars. The drainage district will comprise the city and considerable outlying territory.

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[1] British Medical Journal, August 13th.

THE TENTH ANNUAL OPENING OF THE PHILADELPHIA POLYCLINIC. — The Philadelphia Polyclinic will open its fall and winter term on Monday, September 26, 1892, and, from present indications, with a large class of students. Dr. John B. Roberts will deliver, as an introduction to the course, a lecture on "Injuries of the Hip-Joint," on the evening of the same day, in the hall of the college, to which members of the profession are invited.

SCARLET FEVER IN LONDON. — The epidemic of scarlet fever which has existed in London during the summer does not appear to be subsiding. The number of new cases reported is still very large, but the disease appears to be of a mild type and but few of the cases are fatal. The total death-rate of the city is below the average.

OVERSTOCKED PROFESSION. — The number of medical men in this country seem to be greatly in excess of the requirements. As compared with a few European countries the ratio of physicians to population is very large. Sweden is said to have one physician to 7,000 population, Italy, one to 3,500, Germany, one to 3,000, Austria-Hungary, one to 2,400, France, one to 2,000, while the United States has one to 600 population.

THE PROFESSION IN AUSTRALIA.— A letter from a physician in Adelaide to the *Australasian Medical Gazette*, points to the overcrowded condition of the medical profession in Australia. In Adelaide and its suburbs, during the past five years, with no increase in the population, the number of physicians has increased by seventeen. He thinks it is time that a word of warning should be given to parents, guardians and the aspiring youth as to the overstocking of the medical profession in the colonies.

MEDICAL ATTENDANCE IN INDIA. — The *Medical Reporter* (Calcutta) states that the supply of medical aid in India, by Government as well as that by private companies in certain quarters for their working staff, is quite insufficient. This condition of affairs, in view of the prevalence of cholera in many of the stations, calls for speedy remedy.

DIGESTIBILITY OF BEEF AND FISH. — Popoff's researches on the digestibility of beef and fish after different methods of preparation show that both are more digestible in the raw state than when cooked. The longer beef is cooked, the more indigestible it becomes. After the same method of preparation, except smoking, beef will, in general, be better digested than fish. Smoked fish is more digestible than raw or cooked. On the other hand, smoked beef is peptonized with more difficulty than if in some other condition, perhaps because the digestion is impaired by the strong salting which precedes the smoking.

BOSTON.

MALARIA AT CHESTNUT HILL. — At a recent meeting of the Brookline Board of Health, attention was called to the fact that malaria appears to be unusually prevalent in the region of Chestnut Hill, which is partly in Brookline and partly in Newton. There is a district of swampy land which seems to be at fault.

CHOLERA PRECAUTIONS IN BOSTON.— As yet no case of cholera has appeared in Boston Harbor. All vessels, nevertheless, from European ports are thoroughly overhauled and disinfected. Several voting booths have been put up on Gallop's Island to be used in case of emergency, and a new hospital and accessory buildings are being built there. The city is being made as clean as possible, and many other precautions taken to prevent the disease from gaining a foothold. The City Board of Health have issued a circular calling attention to many suggestions for the prevention and restriction of the disease if it should visit us. These include the care of vaults and cesspools, collections of dirt, proper hygiene for dwelling-houses, personal cleanliness, proper diet and care of the body, and a description of the early symptoms of the cholera and the proper course to pursue in case the disease breaks out or is suspected.

NEW YORK.

THE HEALTH OF NEW YORK. — In order that the public may be accurately informed of the situation of affairs as regards cholera in the city, the Board of Health has commenced the issue of daily bulletins. The first of these, dated September 5th, was as follows: "No cases of cholera have occurred in this city, and the city is now more exempt from contagious disease than at any time in several years." There was a further decline in the mortality during the week ending September 3d, the number of deaths reported being 718, against 726 for the preceding week, and 789 for the week ending August 20th. This mortality is 91 less than the average for the corresponding week for the past five years, and represents an annual death-rate of only 20.38 per thousand of the estimated population. Typhus fever has entirely disappeared, and but six cases of small-pox were reported during the week. Under the same date, September 5th, the Board issued a circular approving of a scheme of disinfection prepared by Dr. H. M. Biggs, and directing that the disinfectants described and the methods of their use be employed in the hospitals for contagious diseases in charge of the department, while it recommends the same to the public in all cases of contagious disease. The disinfectants mentioned are carbolic acid, corrosive sublimate and chloride of lime.

Quarantined Passengers. — The old frigate *New Hampshire*, has been offered by the United States Naval authorities, for the cabin passengers of the *Rugia*. Provision for over one thousand steerage passengers from the infected steamers has been made in barracks at Sandy Hook, the camp being guarded by United States soldiers, in order to prevent escape. Dr. John M. Byron, of the Loomis Laboratory, has taken up his residence on Swinburne Island, where all the cholera cases from the quarantined steamers are sent, for the purpose of bacteriological investigation. Miss Merries, a volunteer nurse on the island, who contracted the disease while attending patients, was reported, according to the latest accounts to be recovering.

Miscellany.

CREMATION OF BODIES DEAD WITH CHOLERA.

Dr. A. S. Ashmead,[1] late foreign medical director of the Tokio Hospital, Japan, says there are a few things which it would be wise for us to consent to learn from Japan, and one of them is the cremation of all persons dead with cholera. Exclusive of the private establishments of each Buddhist burial-place there are in the city of Tokio six public crematories, each large enough to burn twenty-five bodies at a time. It is to be regretted that cremation has not with us that religious origin which first recommended it to the Japanese. Reason and good sense have never proved such strong foundations, otherwise the advisability of the cremation of cholera victims would have occurred to us long ago. In 1866, when a few cholera immigrants had been buried on Ward's Island (N. Y.), an epidemic started almost immediately in the part of the city nearest to that burial-ground.

THE EFFECTS OF HEAT AS MANIFESTED IN WORKMEN IN SUGAR-REFINERIES.

During the very hot weather in Philadelphia this summer Dr. W. M. L. Coplin,[2] Dr. D. Bevan and Mr. H. Sommer, Jr., had an opportunity of studying the effects of extreme heat on the workmen in a certain sugar-refinery. The number of men on duty was 800 in the day and 500 in the night. The number of cases treated by them in an accident-room specially fitted for the purpose was 213 in eight days, beginning July 25th. Of these, 98 were affected in the morning, 115 at night; 183 returned to work, 28 were sent home, two were sent to the hospital, and one died. In two the temperature was over 108° F.; one of them died (temperature 110° F.). In 28 the temperature ranged between 105° F., in 50 between 102° F. and 105° F. In the remaining 133 the temperature in 62 was above 101° F.; in 49 between 100° F. and 101° F.; in eight between 99° and 100° F.; in 11 between 97° and 99° F.; in one 96° F. and in two between 95° and 96° F. The larger number of attacks occurred between three o'clock and five o'clock a. m. and p. m. The humidity seemed to be the most important factor in the development of the attacks, more cases developing in a room where the temperature averaged between 115° and 117° F. with high degree of humidity than in a room with a drier atmosphere where the temperature averaged between 122° and 124° F. There was no evidence that men who drank beer freely suffered as much as those who drank little or none at all, while "those who drank largely of the water were extremely prone to suffer."

The most constant and troublesome symptom is "cramp" in the epigastrium, with not infrequently similar pain in the calves, sometimes in the back and hypogastrium, less commonly in the thighs and upper extremities. Other symptoms may be difficulty of respiration, pain in the splenic or hepatic regions, headache (in nearly all cases), nausea, rarely vomiting, agitation, pale skin (if moist, cold and clammy). The axillary temperature is not reliable. In a few cases diarrhœa was present; in the majority constipation preceded the attack. Later delirium, sometimes active, comes on with occasionally convulsive movements ending, in fatal cases, in coma. The pulse is irregular, the urine scanty and high colored (in excessive pyrexia albumen may be present in small quantities). There is pain in the cervical region and generally in the back. The patient may be conscious of the high temperature, but, as a rule, feels cool when brought out of the intense heat. He complains of flushes of heat alternating with chilliness. There is great thirst. There is but one condition, namely, uræmia, with which these cases may be confounded. The pathology is obscure. There is undoubtedly a large accumulation of blood in the portal system. The area of hepatic dulness is largely increased, as a rule, in proportion to the intensity of the attack; the area of splenic dulness is also increased. The rectal temperature is two to five degrees higher than the oral.

Apart from early treatment, the prognosis will depend almost entirely on the temperature. If it does not exceed 105° to 106° F., recovery is the rule. The object of treatment is to increase the peripheral circulation. Rubbing with hard, undressed sponges was found useful. Atropine hypodermatically in large doses (one-sixtieth of a grain, in severe cases one-fortieth or even one-thirtieth of a grain, preferably in two doses at an interval of five minutes), gave excellent results. Aromatic spirits of ammonia, half a drachm to a drachm in milk, acts well. Morphine in doses of not more than a quarter of a grain may be combined with either of the above remedies. Strychnine does good in great prostration. Twenty drops of the tincture of digitalis was generally administered. Towards the close of the epidemic amyl nitrate, (three minims on a handkerchief,) was used in one case with great success.

In seventy-five per cent. of the cases the cold bath was used. It must be employed with judgment. Its efficiency depends largely on the accompanying friction. From five to ten grains of antipyrin or antifebrin in mild cases relieved the headache. Alcoholic stimulants should be used in the majority of cases. A cold spray, of some force, was found most beneficial. The cool-air blast is a valuable adjunct. Active friction should be conjoined with it, or if the patient is quiet he should be in a recumbent posture, covered, except his face with a sheet.

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[1] Science, September 2d.

[2] Medical News, September 3, 1892.

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THERAPEUTIC NOTES.

Vomiting of Pregnancy. — Dr. Weil[1] proposes the use of ten drops of a twenty per cent. solution of menthol in olive-oil, to be dropped on powdered sugar and sugar sprinkled over it. The sugar prepared in this way is to be taken whenever nausea appears. In this way a good result can be obtained in the most severe cases of apparently uncontrolled vomiting. The action of the remedy merely by suggestion, Weil maintains can be excluded.

Fedorow-Charkou obtained a rapid and complete cure from the fluid extract of hydrastis canadensis (twenty drops four times a day). He believes that this drug reduces the blood pressure, diminishes the hyperæmia of the uterus and calms the irritated vasomotor centres of the digestive apparatus.

Treatment of Gastric Ulcer by Resorcin. — Dr. Frank M. Pope, in the *Provincial Medical Journal* for May 2, 1892, reports sixteen cases of gastric ulcer treated by this remedy with excellent results. For the three prominent symptoms of gastric ulcer, fermentation, pain and hæmorrhage, the antiseptic analgesic and hæmostatic properties of resorcin appear to be remarkably well combined. The drug is administered in five-grain doses, dissolved in one ounce of water, as far as possible, on an empty stomach. The patient is kept on a milk diet, or, if vomiting is very constant, digested milk is sometimes substituted. The author has been able to dispense with nutrient enemata and suppositories. Rest in bed in the recumbent position is insisted on as an important factor in the treatment.

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Correspondence.

LEGISLATION FOR THE PREVENTION OF BLINDNESS.

Boston, September 13, 1892.

Mr. Editor: — In a recent article published in the Journal, I have called attention to "An Act for Prevention of Blindness," which has become law in the State of New York, and expressed the belief that some good would result if a similar law were passed by the legislature of this State. This act is directed against midwives and nurses, and reads as follows:

> Section 1. Should any midwife or nurse having charge of an infant in this State notice that one or both eyes of such infant are reddened or inflamed at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant, to report the fact in writing within six hours to the health officer or some equally qualified practitioner of medicine of the city, town or district in which the parents of the child reside.
>
> Sect. 2. Any failure to comply with the provisions of this act shall be punishable by a fine, not to exceed one hundred dollars, or imprisonment not to exceed six months or both.
>
> Sect. 3. This act shall take effect on the first day of September, eighteen hundred and ninety.

Maine has followed New York's lead in this matter, and other States undoubtedly will.

I have lately received a circular issued by the Pennsylvania State Board of Health on the "Prevention of Blindness," and this means of calling attention to the importance of the subject is also to be highly commended. It is addressed to "Physicians, Nurses and Midwives," and after making prominent the facts, that from twenty per cent. to twenty-five per cent. of the inmates of blind asylums are blind as a result of ophthalmia neonatorum, that the disease is much less liable to develop when the preventive measures recommended by Credé are practised, and that an unfavorable termination is of rare occurrence when the trouble is recognized and properly treated from the beginning, the Board states that it has formally adopted the following regulation:

> "Whenever, in any city, borough, village or place in this State having no health authority of its own, any nurse, midwife or other person, not a legally qualified practitioner of medicine, shall notice inflammation of the eyes or redness of the lids in a new-born child under his or her care, it shall be the duty of such person to report the same to some legally qualified practitioner of medicine, within twelve hours of the time the disease is first noticed."

In Boston, the employment of midwives is probably not so commonly practised as in some of the other large cities, for the reason that the out-patient department of the lying-in hospitals provides, in a great measure, for the class of patients who would be likely to come under their care. I have seen within the last month, however, one unfortunate midwife case, a child six weeks of age, who is blind in one eye and nearly so in the other, as a result of this disease. If it had been sent to the Eye and Ear Infirmary, or some other charitable institution when the inflammatory symptoms were first noticed, there is little doubt but that the child would have recovered with a sight unimpaired.

Some form of legislation for the prevention of blindness is certainly demanded in this State, and I trust that an act similar to that passed by New York and Maine will soon become law.

Yours very truly,
Frederick E. Cheney.

RECORD OF MORTALITY

For the Week ending Saturday, September 3, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,827,396	718	335	23.94	12.88	13.58	3.36	2.10
Chicago	1,250,000	534	281	16 04	5.70	1.47	4.18	6.46
Philadelphia	1,092,168	411	196	23.76	12.00	16.08	4.46	1.20
Brooklyn	955,333	350	197	29.00	10.15	18.85	4.64	2.03
St. Louis	477,873	181	72	17.05	7.70	10 45	3.30	2.20
Boston	469,645	200	96	24.50	13.50	18.50	2.50	.50
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	305,000	80	31	18.50	13.75	8.35	5.00	3.75
Cleveland	281,353	87	42	42.84	1.19	29.75	2.38	10.71
Pittsburg	255,000	113	75	48.95	3.56	32.93	5.34	7.12
Milwaukee	234,440	—	—	—	—	—	—	—
Washington	230,360	95	42	22.05	8.40	15.75	1.05	2.10
Nashville	87,754	27	11	14.80	29.60	7.40	—	7.40
Charleston	56,048	36	10	16.68	13.90	8.34	—	—
Portland	40,000	10	5	40.00	—	30.00	—	—
Worcester	92,313	33	13	27.27	6.06	18.18	3,03	3.03
Lowell	82,455	39	16	28.16	12.80	25.00	—	2.50
Fall River	82,128	—	—	—	—	—	—	—
Cambridge	74,644	24	13	33.28	8.32	29.12	—	—
Lynn	60,809	23	11	26.10	26.10	17.40	—	4.35
Springfield	47,052	15	5	20.00	13.33	13.33	—	6.66
Lawrence	45,910	20	13	40.00	—	35.00	—	—
New Bedford	44,947	24	11	12.48	4.16	—	8.32	—
Holyoke	40,099	—	—	—	—	—	—	—
Salem	31,495	18	9	33.33	—	33.33	—	—
Haverhill	30,065	15	6	26.66	13.33	20.06	—	6.66
Chelsea	29,479	12	6	8.33	8.33	8.33	—	—
Fitchburg	27,444	7	3	14.28	—	14.28	—	—
Gloucester	26,805	8	2	12.50	—	12.50	—	—
Malden	26,783	13	4	38.45	—	38.45	—	—
Newton	26,498	11	6	9.09	9.09	9.09	—	—
Brockton	26,464	4	0	—	—	—	—	—
Taunton	26,464	12	4	50.00	25.00	41.66	—	—
Waltham	20,942	6	2	10.00	10.00	10.00	—	—
Pittsfield	18,294	2	0	—	—	—	—	—
Quincy	17,930	4	1	—	—	—	—	—
Northampton	15,684	3	0	—	—	—	—	—
Everett	14,745	6	1	16.66	33.33	16.66	—	—
Newburyport	14,031	3	2	33.33	—	33.33	—	—
Amesbury	13,561	1	0	—	—	—	—	—

Deaths reported 3,164: under five years of age 1,530; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 654, consumption 315, acute lung diseases 197, diarrhœal diseases 384, diphtheria and croup 108, typhoid fever 95, whooping-cough 37, scarlet fever 21, cerebro-spinal meningitis 14, malarial fever 13, measles 11, small-pox 3.

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[1] Münch. Med. Woch., August 23, 1892.

From whooping-cough New York 12, Brooklyn 9, Chicago 5, Pittsburgh 3, Philadelphia and Boston 2 each, St. Louis, Charleston, Worcester and Cambridge 1 each. From scarlet fever Chicago 6, New York and Philadelphia 4 each, Boston 3, Brooklyn 2, St. Louis and Pittsburgh 1 each. From cerebro-spinal meningitis New York 5, Chicago 3, Brooklyn, Boston, Portland Lynn, Lawrence and New Bedford 1 each. From malarial fever Brooklyn 6, Washington 3, New York and Charleston 2 each. From measles New York 8, Chicago 3, Brooklyn 2. From small-pox New York 3.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending August 20th, the death-rate was 18.0. Deaths reported 3,511: acute diseases of the respiratory organs (London) 139, diarrhœa 386, measles 93, scarlet fever 62, whooping-cough 55, diphtheria 49, fever 34, small-pox (Plymouth) 1.

The death-rates ranged from 11.6 in Nottingham to 28.2 in Preston; Birmingham 19.0, Bradford 14.7, Croydon 12.3, Hull 12.0, Leeds 17.9, Leicester 16.8, Liverpool 23.2, London 17.2, Manchester 19.1, Newcastle-on-Tyne 14.9, Norwich 18.8, Portsmouth 18.2, Sheffield 22.1, Sunderland 19.2, West Ham 21.9.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending August 27th, the death-rate was 18.5. Deaths reported 3,618: acute diseases of the respiratory organs (London) 148, diarrhœa 524, measles 100, diphtheria 60, whooping-cough 59, scarlet fever 52, fever 35, small-pox (Bradford) 1.

The death-rates ranged from 14.7 in Croydon to 32.5 in Preston; Birmingham 20.5, Bolton 19.2, Bradford 16.6, Bristol 16.1, Hull 19.4, Leeds 19.3, Leicester 17.4 Liverpool 21.2, London 17.2, Manchester 20.9, Newcastle-on-Tyne 16.0, Nottingham 17.4, Oldham 20.6, Portsmouth 16.2, Salford 22.0, Sheffield 25.5, Sunderland 16.4, West Ham 18.0.

METEOROLOGICAL RECORD,

For the week ending September 3, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:–

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...28	30.07	60	65	55	86	79	82	N.	S.E.	9	2	O.	O.	
M..29	30.12	64	69	60	78	84	81	N.W.	E.	5	5	O.	C.	
T..30	30.10	61	64	58	81	87	84	N.E.	E.	3	6	O.	F.	
W .31	29.91	68	75	62	85	90	88	S.	W.	13	10	O.	R.	.17
T...1	30.01	64	71	57	69	66	68	W.	N.	10	18	C.	C.	.03
F ...2	30.29	56	63	50	65	73	69	N.	N.E.	14	6	C.	C.	
S...3	30.33	64	76	51	63	72	68	S.W.	S.W.	2	10	C.	C.	
☞	30.12	62	67	56	75	79	77			8	8			0.28

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 3, 1892, TO SEPTEMBER 9, 1892.

Leave of absence for one month, to take effect on arrival of First-Lieut Henry A. Shaw, assistant surgeon, U. S. A., at Fort McKinney, Wyo., is granted Captain George E. Bushnell, assistant surgeon, U. S. A.

Leave of absence for one month is hereby granted to Major Peter J. A. Cleary, surgeon, U. S. A.

Captain William C. Borden, assistant surgeon, U. S. A , is relieved from further temporary duty at Mount Vernon Barracks, Alabama, and will return to his proper station, Jackson Barracks, La.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 10, 1892.

James Stoughton, assistant surgeon, ordered to the "San Francisco."

L. W. Spratling, assistant surgeon, detached from the "San Francisco," and granted leave for one month.

SOCIETY NOTICES.

Massachusetts Medical Society, Suffolk District. – The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, September 21st, at 7.45 o'clock.

By request: Dr. H. P. Walcott, Chairman Massachusetts State Board of Health, Dr. S. H. Durgin, Chairman Boston Board of Health, Dr. S. W. Abbott, Secretary Massachusetts State Board of Health, Dr. J. H. McCollom, City Physician, will speak upon the measures for the prevention and control of Cholera.

Albert N. Blodgett, M.D., *Sec'y*, 390 Boylston St.
E. G. Cutler, M.D., *Chairman.*

American Gynecological Society. – Programme of the seventeenth annual meeting, to be held in Brooklyn, N. Y., on September 20, 21 and 22, 1892. Physicians are cordially invited to be present.

September 20th, Address of Welcome, Dr. Charles Jewett, of Brooklyn; Periodical Intermenstrual Pain, Dr. Chauncey D. Palmer, of Cincinnati; Oxygen in the Treatment of Septicæmia, Dr. Andrew F. Currier, of New York; Technique in Plastic Surgery of the Cervix Uteri, Vagina and Perineum, Dr. William H. Wathen, of Louisville; Pyosalpinx, with Report of Cases, Dr. Archibald McLaren, of St. Paul; Elective Cæsarean Section — Time of Operation, Dr. Henry C. Coe, of New York; The Remarkable Results of Antiseptic Symphysiotomy, Dr. Robert P. Harris, of Philadelphia; Cœliotomy after Labor, Dr. William H. Parish, of Philadelphia; Stomatitis due to the Irritation of Epithelial Pearls in the Mouths of New-born Infants, Dr. Henry J. Garrigues, of New York. September 21st, Certain Aspects of Gonorrhœa in Women, Dr. Charles P. Noble, of Philadelphia; Retro-peritoneal Tuberculosis simulating Hernia, Dr. Edward P. Davis, of Philadelphia; The Treatment of Post-partum Hæmorrhage, Dr. Egbert H. Grandin, of New York; President's Address; Supra-vaginal Hysterectomy for Uterine Fibroids Report of Fourteen Cases, Dr. William M. Polk, of New York; Supra-vaginal Hysterectomy, with Sub-peritoneal Treatment of the Stump without Ligature, in Operations for Uterine Fibro-myomata, Dr. B. F. Baer, of Philadelphia; Vaginal Hysterectomy for Cancer of the Uterus, Dr. Hermann J. Boldt, of New York; Business Meeting 5.30 to 6.30 P. M. September 22d, In Memoriam — Dr. Gilman Kimball, Dr. Francis H. Davenport, of Boston; Can we prevent Secondary Hæmorrhage after Ovariotomy? Dr. Horace T. Hanks, of New York; The Experience of the Boston Lying-in Hospital in the last Five Years of Eclampsia, Dr. Charles M. Green, of Boston; The Value of the Forceps in Complicated High Arrest of the Breech, with Report of Two Cases, Dr. Edward Reynolds, of Boston; The Management of Occiput-posterior Cases, Dr. Chauncey D. Palmer, of Cincinnati; Umbilical Hernia in the Female, with Report of Five Cases, Dr. A. Palmer Dudley, of New York; Conservative Laparotomy, Dr. William M. Polk, of New York; The Etiology of Intra-pelvic Effusions of Blood, Dr. Florian Krug, of New York.

John Byrne, M.D., *President*, Brooklyn.
Henry C. Coe, M.D., *Secretary*, New York.

RECENT DEATH.

Samuel J. Brady, M.D., of Brooklyn, died at Jamaica Bay, September 8th, aged fifty-one years. He was born in Baltimore. He resided for nearly forty years at Williamsburg. He graduated from Bellevue Hospital Medical College in 1868, and was for some time surgeon in St. Catherine's Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Ninth Annual Announcement of the Medical and Dental Departments of the National University. Washington, D. C. 1892–93.

Memoria Bianual de los Trabajos del Laboratorio Histo-Bacteriologico, é Instituto Anti-Rabico. Por el Doctor Enrique Acosta. Reprint. Habana. 1892.

Transactions of the Thirteenth Annual Meeting of the American Laryngological Association, held in Washington, September, 1891. New York: D. Appleton & Co. 1892.

Annual Report of the Civil Medical Department of H. H. the Nizam's Government for Fasli 1300. By Surgeon Lieut.-Col. E. Lawrie, M.D., Residency Surgeon, Hyderabad.

Prevention of Blindness. Sanitary Protective Associations. The Treatment of the Apparently Drowned or Suffocated. Circulars of the Pennsylvania State Board of Health. 1892.

A Practical Treatise on Diseases of the Skin By John V. Shoemaker, A.M., M.D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia, etc. Second edition. New York: D. Appleton & Co. 1892.

Original Articles.

MALIGNANT ENDOCARDITIS, WITH REPORT OF TWO CASES.[1]

BY GEORGE B. SHATTUCK, M.D.,
Visiting Physician, Boston City Hospital.

CASE I. MALIGNANT ENDOCARDITIS FOLLOWING TYPHOID FEVER; DEATH; AUTOPSY.

F. D., seventeen years of age, single, a roofer, entered the City Hospital January 7, 1892. Family history negative. Personal history: It was reported that he had scarlet fever, measles and typhoid fever when "young"; had had a sore on the penis two years ago; was in the habit of drinking a glass of beer at night. He considered himself well up to December 30th when he worked out in the cold all day; on the 31st he had a severe headache, followed the next morning by vomiting, intestinal irritation and diarrhœa — movements frequent, small and at times accompanied by pain. Had frequent attacks of epistaxis, small in amount; but the night before entrance he had one quite profuse attack. For five days had cough, with occasionally dark, bloody expectoration. Pain in limbs, back and joints; general abdominal pain and tenderness; temperature 101°, pulse 96, respiration 28. Slight trace of albumen in the urine, otherwise negative. The heart impulse was plainly seen in the fifth space half an inch inside the mammary line. Systolic murmur at apex, not transmitted; systolic blowing murmur over aorta; double murmur over pulmonary area, second sound reduplicated. Lungs negative. Abdomen distended and tender to pressure, tympanitic. Liver apparently normal. Splenic dulness beginning at seventh rib, the edge felt below the margin of the ribs; rose spots. The tongue was dry, brown coat, sordes on the teeth. Cyanotic.

Diagnosis of typhoid fever was made before entrance to hospital. Patient was admitted with that diagnosis, which was accepted.

January 9th. The pulsation of all the superficial arteries is visible with extraordinary distinctness, the whole length of the dorsalis pedis is very distinct, and a loud, aortic, regurgitant murmur could be heard with the stethoscope. Patient had had one typical typhoidal stool, and two stools containing dark blood; raising dark, bloody sputum.

January 11th. Sharp epistaxis last night. Evidences of passive congestion in sputum, urine, and from mucous membranes.

January 14th. Breathing rapid and labored; getting out of bed; temperature 103.5°; pulse 120, and very poor; respiration 60.

January 16th. Respiration fell yesterday to 32, to-day it is 40. Delirious; less diarrhœa; but complains of pains and tenderness in right ankle.

January 18th. General condition more favorable, with a bed-sore developing over the sacrum.

January 21st. Temperature reached normal yesterday, to-day 101.5°, respiration 40, pulse 100, and of better character. Less diarrhœa. Pulsation in arteries less marked, though still visible. Presystolic and systolic murmur at cardiac apex, systolic murmur over aorta. Complains of pain along right leg and in the ankle. No delirium; mind clear.

January 23d. Improving. Better color; is hungry; pain and tenderness in right popliteal space; no swelling.

January 26th. Since last record temperature has steadily risen to 104.5°; pulse weak and jerky. Had a well-marked chill in the afternoon. No diarrhœa. No delirium. Said he was hungry.

February 6th. Patient, since the last record had an irregular temperature, varying between 100° and 105.8°, and accompanied by several chills. Takes nourishment well, and says he is hungry.

February 10th. No more chills, but temperature between 104° and 105°; pulse between 130 and 140; respiration between 50 and 60. Delirious at night.

February 14th. Diarrhœa began again on the 11th, one dark, bloody dejection. Pulse 160. Patient growing weaker and more delirious. Died on the 15th.

Autopsy, by Dr. F. B. Mallory, twenty hours after death:

Head: Several small hæmorrhages in the pia, beneath which the cortex of the cerebrum was softened, and contained several small, opaque, yellowish-white specks and points of hæmorrhage.

Heart: About normal size, pale, firm. Mitral valves much thickened, admitting one finger-tip; curtain shredded with low, cauliflower-like vegetations. Aortic valves much thickened, interadherent, incompetent to water-test; numerous vegetations; thrombus extending down over curtain of mitral valve. Tricuspid valve admitted five finger-tips. Pulmonary valve normal. Cavities normal. Beneath endocardium of right ventricle, and to a less extent of left ventricle, were numerous yellowish-white opaque specks, many of them surrounded by a red zone; a few similar specks beneath pericardium.

Spleen: Much enlarged; on section, several large, irregular, yellow, opaque areas.

Intestine: Peyer's patches pigmented, and five or six small, shallow, almost healed ulcerations present. Mesenteric glands moderately enlarged.

Diagnosis: Multiple emboli of brain; chronic aortic and mitral endocarditis; acute vegetative aortic and mitral endocarditis; stenosis of aortic and mitral valves; insufficiency of aortic and mitral valves; thrombus of aortic valve; multiple emboli of heart; embolic infarction of spleen, kidneys and liver; multiple emboli of kidneys and liver; chronic perisplenitis; healing typhoid ulcerations.

SUMMARY.

Little attention need be given probably to this patient's statement that he had had typhoid fever when "young." He very likely had syphilis. He had an endocarditis affecting both the mitral and aortic valves, probably of some standing. Then came the typhoid fever, which at the time of entrance to the hospital was at least ten days old and possibly older — as the course in the hospital and the autopsy would indicate. During the progress of the fever the heart's action was exaggerated and labored, and the Corrigan pulse was remarkable distinct in all the superficial arteries, even in the small superficial arteries about the face and lips. The typhoid fever ran a rapid and normal course, with the exception of the symptoms dependent upon the impaired condition of the valves of the heart, the tendency to epistaxis and hæmorrhage from the bowels being undoubtedly increased by the passive congestion. Clinically there was no doubt about the diagnosis of typhoid fever: the mode of onset, the enlarged spleen, the rose spots, the epistaxis, the stools, the clinical chart, all gave the same testimony.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, April 20, 1892.

On the 20th and 22d of January the temperature, which had been steadily falling from evening to morning for a week, in the morning touched normal; the mind was clear; the color was good; the appetite had returned; and the patient was clamoring for food as the convalescent typhoid clamors. Suddenly, on the evening of the 22d, the temperature began to rise rapidly and steadily to above 104° F. During the next two weeks there were several violent fluctuations between 105° F. and 100° F., accompanied with occasional chills. The pulse and respiration, which had previously been somewhat rapid, even with a falling temperature, probably on account of weakness and the cardiac inability, increased steadily in frequency, and the patient died three weeks after the promise of convalescence, five weeks after entrance to the hospital, and six weeks and a half after his first recognition that he was ill. The day of his death the temperature was 105° F., the pulse 170 and the respirations 70. There was no return of rose spots and no return of diarrhœa (which ceased January 23d) four days before death, yet the question of renewal of the typhoid process was constantly before my mind, though becoming from day to day a less satisfactory explanation of the symptoms and condition of the patient; and it was practically put aside at least ten days before the patient's death. The possibility of malignant endocarditis was suggested, but diagnosis was not fixed.

At the autopsy the condition of the cardiac valves, the emboli and the embolic infarctions were the prominent features. The intestine was examined, but the typhoid ulcers were so few and so far healed that they were not evident at the autopsy table, and their presence was only established subsequently after a more thorough search. The first and natural impulse of the pathologist (perhaps instead of impulse I should rather say tendency, for pathologists are not supposed to have impulses) was to regard this as another instance in which the clinician had mistaken malignant endocarditis for typhoid, and it must be acknowledged that such mistakes are not very rare, and sometimes they are very excusable. As such it would have been recorded, without the subsequent careful examination of the intestine and mesenteric glands, notwithstanding the plain clinical picture.

For this case, as there were no ulcerations of the valves I have used the term malignant, which is a better term to characterize the process in general. Malignant endocarditis is very rare in typhoid fever, tuberculosis and diphtheria; it is extremely rare in chorea, uncommon in rheumatism, and most common complicating pneumonia.[2] In the present instance we have given the typhoid ulcers of the intestine plus diseased valves of the heart, together sufficient factors for the infection. Given only one of them and the patient would probably have lived. Whether the bedsore may have played a part in the process I will not undertake to say.

My attention was directed by Dr. R. H. Fitz to a statement of Girade,[3] who reports having examined six cases of malignant endocarditis bacteriologically. One of these cases was engrafted upon a typhoid fever, and Girade states that he found the typhoid bacillus in the vegetations upon the cardiac valves, but he did not find them in the broncho-pneumonic foci; he also found them in this case in the cerebrospinal fluid. In another case, not following typhoid, he found the staphylococcus pyogenes aureus and the streptococcus pyogenes. In two other cases he found the Gilbert-Lionscher bacillus. In five cases, complicated with tuberculosis of the lungs and acute pneumonia in the third stage, he was unable to find the tubercle bacillus in the endocardial lesions. Finally in six cases he found, in the infarcts of various organs, a new bacillus, the characteristics of which he had not worked out definitely.

Dr. Sidney Martin has been delivering the Goulstonian Lectures this year, on "The Chemical Pathology of Diphtheria Compared with that of Anthrax, Infective Endocarditis and Tetanus." In Lecture III[4] he gives the following account of his examination of a case of infective or malignant endocarditis not associated with abscesses or pyæmia:

> "*Bacteriological Examination.* — No micro-organisms were found by making cultivations of the blood of the right ventricle. From the vegetations, with proper precautions, a pure cultivation was at once obtained of cocci with the same microscopical appearances as those seen in the valves — namely, they were cluster or staphylococci, and not streptococci. Only one culture out of the five made showed any contamination; four were pure, and showed only the growth of the staphylococci. Without going further into the bacteriological procedure, this organism may be described as growing on agar in bluish-white opaque circular colonies, and on gelatine in a similar manner, but rapidly liquefying the medium. Microscopically it is a staphylococcus, forming clusters and not chains.
>
> "*Pathological Action.*— This coccus does not produce pus when introduced under the skin of a guinea-pig or into the circulation of a rabbit. In a guinea-pig it produces a febrile disorder lasting over eleven weeks, accompanied by extreme wasting and ending in death. When injected into the circulation only a slight illness results, from which the animal recovers. When killed no micro-organisms were discovered in the blood. The pathological effects of this micro-organism have yet to be completely worked out. I contented myself, as a commencement, with determining what sort of illness it produced in animals, and whether it formed abscesses. The kind of illness produced, and the absence of abscesses when subcutaneously introduced, showed that it had the characteristics of the coccus found in the valves of the heart. Each case of infective endocarditis must be studied by itself, for the disease is by no means an entity. Some cases of ulcerated cardiac vegetations occur as part of a pyæmia proceeding from pelvic or other abscesses where the primary infective agent appears to be the staphylococcus or streptococcus pyogenes. In others, again, no primary pus focus is found, but there are multiple abscesses due to infective emboli from the ulcerated valves. Other organisms, such as Friedländer's pneumococcus, may also possibly play a part in the disease. In the case under consideration, however, there was only one micro-organism, and that one not a pus-former."

I will not detain you with a dissertation upon malignant endocarditis in the abstract, for the process itself has already received careful study and description at competent hands. But I will, in this connection, ask your attention to another case which presented itself in my service at the City Hospital one year ago, and which interested me and some of my colleagues very much.

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[2] Osler: Goulstonian Lecture, Lancet, vol. i, 1885. Ibid: Practice of Medicine, p. 595.

[3] Baumgarten's Jahresbericht, vol. v, 1889, pp. 356-357.

[4] British Medical Journal, April 9, 1891, vol. i, pp. 755, 756.

In the case I have just gone over, the diagnosis of malignant endocarditis was not made clinically, though it was suggested. The patient died, as was anticipated, and the autopsy established that diagnosis. In the case I am about to describe the diagnosis of malignant endocarditis was entertained clinically, mainly by exclusion — many of these cases admitting during life of no other diagnosis than by exclusion — the patient was expected to die but did not. She got perfectly well, and the diagnosis remains a query.

CASE II. ENDOCARDITIS FOLLOWING PNEUMONIA, POSSIBLY MALIGNANT; RECOVERY.

A. McP., eighteen years old, single, seamstress, entered the City Hospital January 1, 1891. Good family history. Had influenza a year ago; was in bed two months, having "gastric fever" at the same time. Otherwise, always well until three or four weeks ago, since when loss of appetite, general malaise, and pain in the left chest, more severe on deep inspiration and on lying on either side. Loss of weight during last month, but is well developed and nourished. Catamenia regular. Temperature 99° F., pulse 120, respiration 48. Urine: acid, specific gravity 1030, much urates, no albumen, no sugar. Tongue slightly coated. Heart: action rapid, sounds at apex doubtful. Right lung negative, except exaggerated respiration. Left lung moves little; percussion dull above, quickly becoming more so, and this dulness extending to the base; respiration broncho-vesicular at apex, accompanied by fine and subcrepitant râles, and with faint respiratory murmur below; vocal resonance increased above and diminished below. Abdomen negative.

January 3d. Temperature 102° F., pulse 130, respiration 60. Patient feeling very poorly. From this time, for two weeks, there was an irregular temperature, tending downwards and reaching normal. Heart, systolic murmer at the apex.

January 8th. Cardiac apex three inches to the left of median line; systolic murmur more marked. Skin very dry; cheeks flushed. Patient drowsy and indifferent.

January 13th. Is feeling better, but physical signs remain about the same. Occasional vomiting.

January 18th. Since the 16th, heart's action exaggerated, irregular and intermittent; pulse very small. Urine steadily diminishing in amount, and the last twenty-four hours almost none. Recent examination of urine negative.

January 27th. Daily urine small in amount, but increased somewhat since last record. Signs over the left lung have been clearing up. Raised a little bright blood to-day two or three times.

January 28th. Raising considerable bright blood; nothing in throat or mouth to account for it. Complains of pain in right axilla. No physical signs on examination. Temperature 98° F.; pulse 80; respiration 35.

January 29th. Bright blood continued in the sputum; urine increased to-day to thirty-four ounces; vomiting, which has been troublesome, better. Patient stupid and listless, but can be roused.

January 30. Dulness over right back from angle of scapula down; respiratory murmur diminished here and in axilla. Bright blood continues in sputum; bright flush on right cheek, chin and nose; superficial veins over front right chest distended and plainly marked. Urine normal; specific gravity 1012, no albumen. Blood count 6,300,000 red blood corpuscles to the cubic millimetre. Temperature rose rapidly from 98° F. January 28th and is now 102° F.; pulse 130; respiration 45.

February 8th. Has continued to raise bright blood, half a teaspoonful at a time occasionally. Pulse latterly very irregular and intermittent. Still very irregular temperature with slight occasional chills and chilly sensations during the last week. Still stupid and listless, and pays little heed to surroundings. Says she aches all over. Complains of new pain in region of right interclavicular notch.

February 12th. Looks and feels better and brighter. Raises very little blood. No vomiting. Temperature normal, pulse 75, respiration 48. Superficial veins of upper chest engorged, especially on left side. Area of cardiac dulness increased to right. Loud, blowing, systolic murmur at apex transmitted to axilla Dulness and bronchial respiration over lower half of right back. Daily urine varies from twenty-five to thirty-five ounces.

February 23d. Still occasional vomiting and also raises bright blood occasionally. Loud, blowing, systolic murmur continues at cardiac apex. Urine slightly increased in amount.

March 18th. Temperature has continued normal since February 12th. Sits up, has a good appetite and has gained steadily but slowly in color, in flesh and in strength. Pain across front of chest, not severe but constant. Heart intermits about every tenth beat, and is irregular and flurried. Continued to improve slowly but steadily until April 21st, when pain and swelling developed over right ankle; there was also pain over the præcordia. She was ordered to bed and treated with salicylic acid, and by May 1st she had recovered from this attack. She still had pain, though slight, as previously described, across the chest.

She was discharged from the hospital May 7th. A blowing, systolic souffle audible at the cardiac apex but softer and less loud, apparently steadily diminishing.

In this case, we have a young woman of good previous history; with a pneumonia on the left side, a complicating endocarditis, and a subsequent limited pneumonia of the right side. The process, especially before and during the development of the physical signs in the right lung was accompanied by great irregularity in the pulse, respiration and temperature; by great prostration, physical and mental; by pain over the præcordia and across the chest; by great diminution of the activity of the kidneys and marked dryness of the skin, with absence of albuminuria; by the expectoration of bright blood during several weeks, apparently of pulmonary origin, and dating from the time that the right lung became involved; by several mild chills and shiverings; by convalescence at the end of six weeks notwithstanding an unfavorable prognosis; by recovery at the end of four weeks; by an attack during convalescence of pain and swelling in one ankle which yielded under salicylic acid. The only cardiac murmer detected was a mitral systolic. The right side of the heart may have been affected; there may have been emboli carried to the right lung and causing the limited pneumonia on that side, though its development was rapid. A pneumonia complicating endocarditis sometimes yields an unusual amount of pulmonary hæmorrhage. The continued raising of arterial blood, however, I could not explain.

Discussing pulmonary embolism, Wilson Fox[5] says: "The symptoms of embolism, not immediately fatal, but resulting in the hæmorrhagic infarct, very closely resemble those last described, but present a minor degree of intensity. Breathlessness and palpitation are the most common among these. Rigors occasionally occur. Hæmoptysis is common when the embolism is of cardiac origin; sometimes it is copious, but it is generally only scanty and may be solely in the form of rusty sputa, akin to those of pneumonia. It is usually persistent, and may last for days or weeks. In the later stages hæmatoidin crystals are found in the sputa. . . . In a certain proportion of cases, even from apparently indifferent emboli, rise of temperature ensues, which may be attended with other symptoms of a pneumonia which may become diffuse. This pyrexia may occur even in heart dsease, and may attain a height varying from 101° to 104°. Rigors are not uncommon. Such pneumonias may apparently undergo resolution, but it seems not improbable that they may in some cases persist in a chronic form and pass into induration of lung."

In so far as any diagnosis was made, that of endocarditis, possibly malignant, following pneumonia, was the only one offering any satisfaction. Had the patient died and come to an autopsy I should have expected to find thickening and perhaps vegetations upon the cardiac valves (certainly upon the mitral and probably the tricuspid), emboli and probably infarcts in various organs. The patient got well, and I can only remind myself that other patients, supposed more positively to have had infective endocarditis, have recovered.

We must remember that malignant endocarditis is not a disease-entity in itself, but is rather a complication or development of something else. It has no well-defined clinical outlines; it may assume a number of different forms, and produce a variety of symptoms; the endocardial signs may even be entirely absent. Under these circumstances it is not strange that the clinician sometimes overlooks it or mistakes it for something else, especially when it assumes the typhoidal form, or that he is led to consider the possibility of its presence when subsequent events do not justify such a supposition.

It is certainly desirable that cases should be put on record, whether diagnosticated during life or not, and that each case should be carefully studied by itself.

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THE WEIGHT OF THE BODY IN ITS RELATION TO THE PATHOLOGY AND TREATMENT OF CLUB-FOOT.[1]

BY A. B. JUDSON, M.D.,
Orthopædic Surgeon to the Out-Patient Department of the New York Hospital.

I DESIRE to present a few thoughts, of an extremely practical kind, relating to the treatment of talipes equino-varus. Beginning with congenital club-foot, it is well to bear in mind that there is a vast difference between a child recumbent and a child walking. While the child is in arms the case is yet free from the complications and difficulties caused by the falling of the weight of the body on the deformed foot. These twelve months, more or less, are the most important year in the history of the case, because, in this period, the foot is to be changed so that, when the child begins to walk, the use of a slight walking-brace, exerting only a moderate degree of force, will convert the weight of the body from a deforming to a correcting agent. During these months of recumbency, with the weight of the body out of the way, with all the tissues soft and formative, and the foot more than doubling in size with the growth of the child, there is every reason to expect to succeed in what we undertake, provided time enough be given to the case, and faithful attention to the details.

The apparatus which I have conveniently used to effect this reduction, before the child learns to stand, is a simple retentive splint which acts as a lever, making pressure on the outer side of the foot and ankle, at A, in Figs. 1 to 4, inclusive, and counter-pressure at two points, one on the inner side of the leg, at B, and the other at the inner border of the foot, at C. It is advisable to keep in mind that this simple instrument is a lever, because, if we know that we are using a lever with its three well-defined points of pressure, we can make the apparatus more efficient than if we view it, in a more general way, as an apparatus for giving a better shape to the foot.

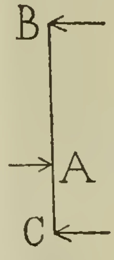

FIG. 1.

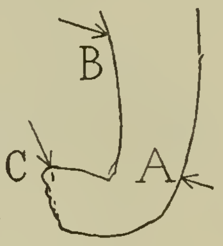

FIG. 2.

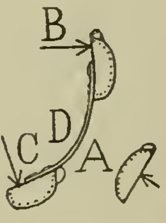

FIG. 3.

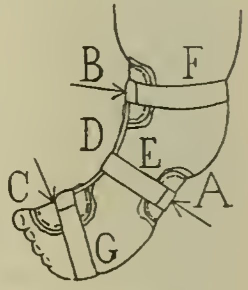

FIG. 4.

I use a little brace made of sheet brass, doing the work with a few simple tools. An advantage of doing the work one's self is that there is no room for doubt, as to where the blame lies, if the apparatus does not work well. Two curved disks, B and C, Figs. 3 and 4, are riveted to a shank, D, and thus is formed that part of the brace which applies the two points of counter-pressure, while, on the other hand, the point of pressure is brought into action by a third disk, or shield, A, which is drawn tightly against the outer side of the foot and ankle, and held in place by a strip of adhesive plaster, E, which includes the limb and the piece which connects the two disks, B and C. The disks are lined with two or three thicknesses of blanket, easily renewed, when necessary, with a needle and thread. These braces are so cheap and easily knocked together that it is nothing to apply new and larger ones, using heavier material for the shank as the child grows. In general, three sizes will be enough, the shanks being 12 gauge, $\frac{3}{8}$ in. wide; 14 gauge, $\frac{1}{2}$ in. wide; and 16 gauge, $\frac{5}{8}$ in. wide. The disks are conveniently made from 22 gauge, $1\frac{1}{4}$ in. wide. The rivets are copper belt-rivets, No. 13. A lip turned on the edges of the disks, with the flat pliers, gives stiffness to the thin brass and, protects the skin from the rough edge. If more easily obtained, tin disks, light bars of iron or steel, and ordinary iron rivets, would doubtless answer.

The brace is applied with three strips of adhesive plaster. The upper and lower pieces, F and G, Fig. 4, are simply to keep the apparatus in place, which they do effectively if ordinary gum plaster is used, while, by drawing the middle strip, E, tightly over the shield, and straightening the brace from time to time, the deformity is gradually and gently reduced. At each re-application the brace is made a little straighter than the foot at that stage. This may readily be done by the hands, and then the adhesive strip is to be tightened over the shield, till the shape of the foot agrees with that of the brace. After a few days, the brace is to be made still straighter, and again re-applied, and made tight till another point of improvement is gained. The brace is applied very crooked at the beginning of treatment, as in Figs. 3 and 4, and is straightened from time to time, and a longer brace applied as the deformity is reduced and the patient grows. It should be removed every week, or two weeks, and an interval of a few days allowed for freedom from the brace, when the mother is advised to manipulate the foot constantly, using as much force as she will in the direction of symmetry. Manipulating the foot during these intervals is of great importance, as cases have occurred in which varus and equinus have been entirely overcome by the mother's hand alone.

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[1] Read before the American Orthopædic Association, New York, September 21, 1892.

[5] Treatise on Diseases of Lungs and Plura, pp. 220, 221. 1892.

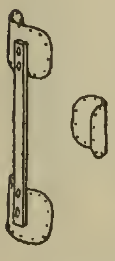

Fig. 5.

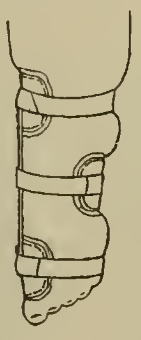

Fig. 6.

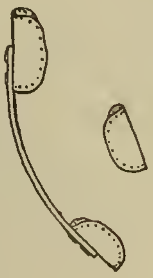

Fig. 7.

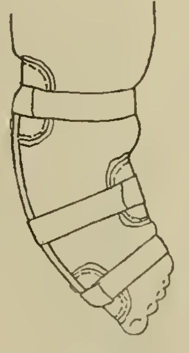

Fig. 8.

By this simple and prosy treatment, carried out systematically and without haste, or violence, or pain, the foot, unless it is a frightful exception, may with certainty, be changed from varus to valgus. At the same time, the tendo-Achillis is lengthened till the position of the foot is near the norme, or at right angles with the leg, as the result of manipulation and giving the brace from time to time a partly antero-posterior action. Figs. 3 and 4 show approximately the shape of the brace at the beginning of treatment, Figs. 5 and 6 when the varus is reduced, and Figs. 7 and 8 when valgus has taken the place of varus. The foot, in this latter stage, may not hold itself valgus, when left to itself, but, with almost no force, and with one finger, it may be pushed into valgus; and in this condition it must be when the child begins to walk, and then another stage of treatment begins.

When the patient begins to walk we have a new difficulty. It is now seen that the weight of the body, falling on the tender and ill-formed foot, will, if not properly directed, defeat all our efforts. Let us, for a moment, consider the mechanical environment of the human foot. In the first place, the corporal weight, which the quadruped distributes among four pedal extremities, falls in man, upon two. Again, the small floor area covered by the feet and their slight structure, seem unequal to the task of supporting the towering frame above them, which in some cases almost resembles a pyramid resting on its apex. And when we observe the effect of active locomotion we see weight and momentum combine in an apparent effort to crush and destroy. And furthermore, when extraneous weights are added and the strain is prolonged, as in the case of the burden-bearer among savage tribes, or the infantry soldier on a forced march, the endurance of the foot excites wonder. It is not strange that the feet are subject to ailments; to blisters, bunions, ingrowing nails, hallux valgus, hammer toes, loss of the arch, weak ankles, painful affections of the metatarsus, perforating ulcers, osteitis, and the varieties of talipes. The wonder is that they are not permanently disa[illegible]d soon after walking is begun, and certainly when the adipose tissue of the body takes on the development which accompanies age and good living. The gourmand, Savarin, said that, among the works of creation, the design of the human foot was a conspicuous failure. Considering the immense weight carried by the foot, it is evident, however, that only the most perfect natural adaptation of mechanics has enabled this insignificant member to perform its superlative functions, and that great caution should attend all procedures having for their object its artificial reconstruction.

It is also sufficiently evident that the correction of club-foot by mechanical means, while the patient continues walking, is a problem beset with difficulty. We have, however, a luminous ray of hope and encouragement in the observation that, in talipes varus, there is an important boundary line between deformity and the norm. If the foot is held in some way, now to be considered, on the right side of this boundary line, each step forces it in the direction of valgus and the increasing weight of the child is a powerful force acting in the right direction, or away from varus, so long as the foot is held, though never so little, looking toward symmetry. It may be said that the child stamps his foot straight, If, on the other hand, the foot is held, or allowed to fall, on the wrong side of this line, though never so little, each foot-step is a blow, driving the foot more and more into the varus position.

This point may be illustrated by the hand placed with its ulnar border on the table. If considerable pressure be made on the table, by the hand so placed, it becomes evident that there is a boundary line between pronation and supination. If the hand is pronated, never so little, additional pressure will force the palm into pronation; which represents valgus in the foot, and if the hand be supinated in the slightest degree, additional pressure will force the palm into complete supination, which represents varus in the foot.

By the application of the idea, the weight of the body may be made a beneficent, instead of a harmful, factor in the progress of a case of talipes varus, and the walking-brace should be constructed with this in view. It should be made of steel, and by an instrument-maker. One of its functions is to act as a lever, but the leverage is applied not chiefly to overcome the deformity by direct force, as in the retentive brace above described, but to hold the foot on the right side of the boundary line above mentioned, so that the weight of the body may straighten the foot, or overcome the varus in a direct and forcible manner, without general or local inconvenience.

The walking-brace consists, as usual, of leg-band, H, Figs. 9 and 10; foot-piece, I; and upright, J; riveted firmly together. A movable joint at the ankle should be discarded, as it undermines the lever by introducing an element of instability and, in this brace, serves no good purpose. Mild steel alone should be used, to facilitate alterations in shape, as point after point of improvement is gained, and to make easy the shifting of buckles and straps, as may be required, all of which may be done by the use of a few simple tools. The upright is to be on the inner side of the leg, as in Fig. 14. The upper part of the brace makes counter-pressure on the inner side of the leg, but it has another important function, in previously neglected cases, which is secured by the steel band passing across the back of the leg, to which are fastened two buckles for the attachment of a piece of webbing, K, in Fig. 9, which passes across the front of the leg. The steel band should make no pressure on the limb as its use is simply to furnish attachment to the buckles. A piece of webbing spanning the front of the leg in this manner, and carrying a pad, performs an important service in cases, like the one shown in Fig. 12, in which, from previous neglect, the varus has not been reduced before walking begins. It transfers a part of the weight of the body from the anterior part of the sole of the foot, where it interferes with correction of the varus, to the upper part of the anterior surface of the leg, where it is powerless to interfere with the treatment. That the weight-pressure thus transferred is considerable, is shown by the callus and bursa which appear where the padded strap crosses the leg near the tubercle of the tibia. This mechanical effect is similar to that of the brace, shown in Fig. 11, used in the treatment of paralysis of the muscles of the calf, resulting in talipes calcaneus.

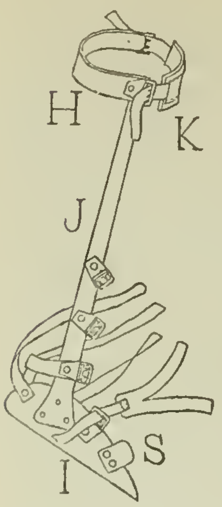

FIG. 9.

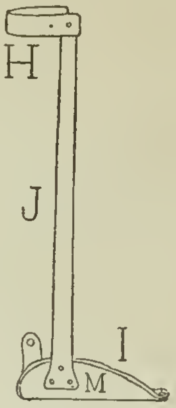

FIG. 10.

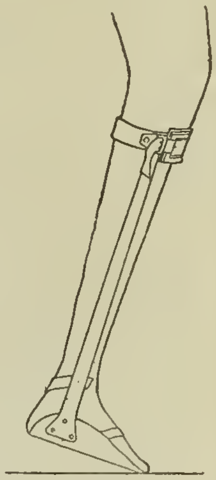

FIG. 11.

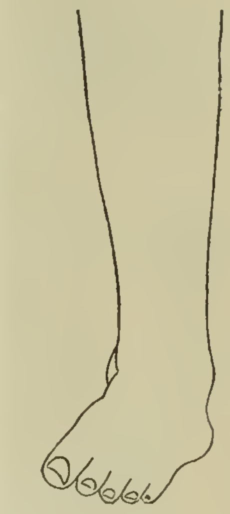

FIG. 12.

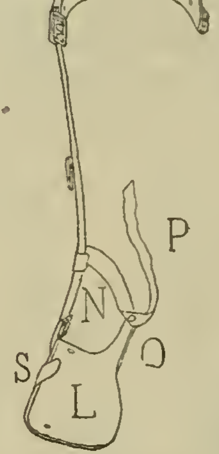

FIG. 13.

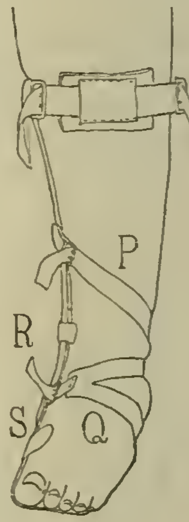

FIG. 14.

The upper part of the brace is also to be considered in another light, as follows: In previously neglected cases it is well to incline the upright fifteen to twenty degrees or more, backward from the vertical of the foot piece, as is shown in Fig. 9. Although correction of the equinus is postponed by this inclination of the upright, we are thus enabled to apply a better leverage against the varus, and when the varus is reduced, and the time arrives when the equinus is to be corrected, this backward inclination of the upright is to be lessened from time to time, till the vertical is reached, as in Fig. 10, or till the upright has an inclination forward, allowing the corporal weight to fall more and more on the anterior part of the sole of the foot, and gradually lengthen the tendo-Achillis. The vertical upright, Fig. 10, is to be applied at once to patients in whom the deformity has been corrected before walking begins.

We will now pass to a consideration of the other end of the brace, the foot-piece, which is to be made of sheet steel ranging from 18 gauge, for a child learning to walk, to 13 gauge for an adult. It has the usual tread, L, Fig. 13, and riser, M. Fig. 10. The heel-cup is formed by a piece of webbing, N, Fig. 13, passing behind the heel, from the lower part of the upright to a spur, O, Fig. 13, which projects upward from the back part of the outer border of the tread. Viewing the apparatus again as a lever for the forcible reduction of varus, in a previously neglected case, counter-pressure is made along the inner border of the foot, and on the upper part of the inner side of the leg, while pressure is made by one strap, or more than one, riveted and buckled to the foot-piece and the upright. But one strap is shown, P, in Figs. 13 and 14. This will be sufficient in the case of a child whose varus has been corrected before walking begins, but in a previously neglected patient, in whom the varus has yet to be reduced while the child is active on his feet, two, three, or more straps may be added, as shown in Fig. 9, partly encircling the foot. ankle and leg, the positions of the buckles and the straps being where they will assist most efficiently in opposing the varus and holding the foot in the best position to receive the weight of the body. These parts of the apparatus may be shifted many times, with advantage, in the treatment of a given case of unusual difficulty, and, in addition, a most efficient agent for applying continuous pressure is found in a strip of adhesive plaster, Q, Fig. 14, sewed to a piece of webbing, R, the plaster partly encircling the foot and ankle, with a single tail, or two tails, as may be required, the webbing being drawn tightly and buckled to the inner side of the raser. This device does more than simply to increase the amount of pressure; it also keeps the heel down on the tread of the foot-piece and, more important still, it gives the foot a rotation outward and thus directs the sole of the foot forcibly toward the ground, in the best position for making the weight of the body a corrective instead of a deforming force. The riser of the foot-piece may also, in previously neglected and difficult cases, carry an ear, S, Figs. 9, 13 and 14, made of sheet brass, which is to be bent downward over the first metatarso-phalangeal joint, to prevent the inner border of the foot from over-riding the edge of the riser. The foot-piece is to be lined with adhesive plaster, in several thicknesses if necessary, to prevent rust, and with a piece of leather fastened to the tread and spur with copper rivets, as shown in Fig. 10. In practice the details demand as much attention as the principles of treatment. The brace is to be applied over the stocking, the strap, R, passing through a hole cut in the stocking, and is hidden by the patient's trousers and shoe.

We will now consider the upright of the brace. It is a flat, tapering bar of mild steel and, when first applied to a previously neglected case, such as is shown in Fig. 12, should have a curve resembling that of the varus foot. The bar, though sharply curved, as in Fig. 13, should, however, be somewhat straighter than the foot, when the latter is forced manually into its best position. The multiple straps, shown in Fig. 9, should then be buckled and tightened daily till the continuous leverage has partly reduced the varus. The upright bar should then be somewhat straightened, and another point of improvement be gained, the patient in the meantime following his ordinary pursuits without interruption. In due time the upright bar, and the foot itself, will both be straight, as seen in Figs. 15 and 16, in other words, the varus will be reduced. The upright should then be bent, from time to time, in the direction of valgus, as seen in Fig. 17, and the persistent and gradual effort resumed until the foot has been pushed, or pulled, or pried, over the boundary line, into the domain of valgus, as seen in Fig. 18. These efforts would not be necessary if the varus had been converted into valgus before the child had learned to stand. In very badly neglected cases the interference of the weight of the body with the treatment may be prevented by the recumbent position, or the use of a high sole on the well foot and the ischiatic or axillary crutch, until the varus has been materially reduced. In all cases, when the child is old enough to be docile, domestic instruction and drill in eversion of the foot, and in the proper management of the foot in locomotion, should be a part of the education.

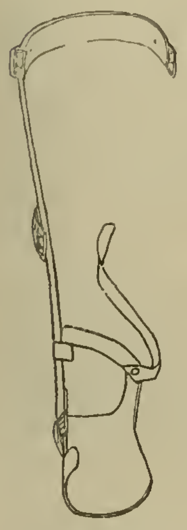
Fig. 15.

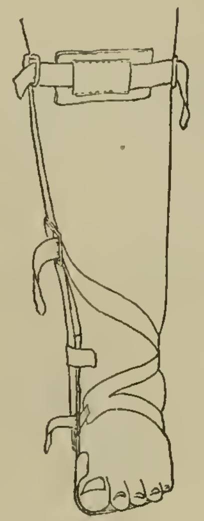
Fig. 16.

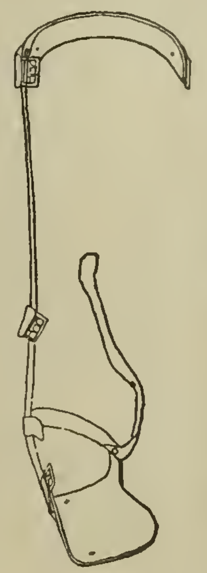
Fig. 17.

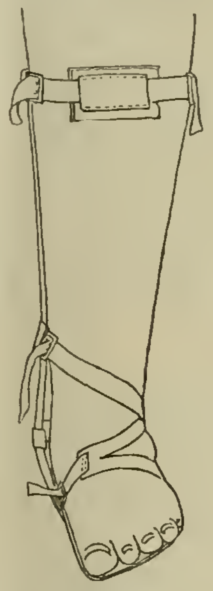
Fig. 18.

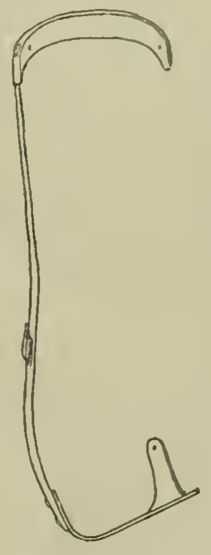
Fig. 19.

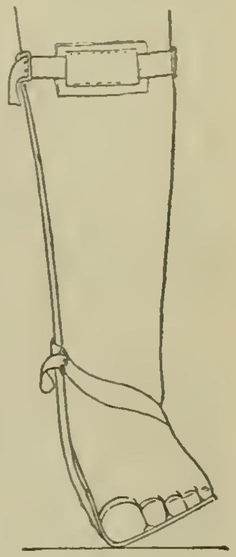
Fig. 20.

As soon as the foot has reached the valgus shape, whether it be at the moment of learning to walk, or only after prolonged effort, in a neglected case, a curious effect will be observed. It will be seen that the outer border of the tread of the foot-piece is raised from the ground, as seen in Figs. 19 and 20, and that we have secured, in a convenient manner, the effect which is sometimes sought by building up the outer border of the sole of the patient's shoe. This is a welcome and powerful ally in our attempts to hold the foot in a favorable relation with the weight of the body and the ground.

The walking-brace has been above described as though its chief use were to reduce varus which has become more or less confirmed by the habit of walking on the outer border of the foot. Strictly speaking, such cases should never occur. They are, however, too common and always indicate that the child has been neglected from the period of recumbent infancy, when deformity of this kind is the most easily overcome. If the varus were always corrected before the child learns to stand, then the only use of the walking-brace would be, as shown in Figs. 19 and 20, to gently hold the foot in valgus, so that the weight of the body shall be sufficient to lead the child to grow up with a foot practically normal. As such a child outgrows the brace, a larger one is to be made, and, when three or four years old, the foot will, without the help of the brace, strike the ground so fairly that, for two or three years, all treatment may be suspended. The patient is to be observed from time to time, however, and, as the foot grows in its original inclination to varus, it will, after the lapse of two or three more years, have to be kept in proper position, under the rapidly increasing weight of the body, by a walking-brace adapted to its needs, for another period of two or three years. When the foot is full-grown it will be shapely in appearance and practically perfect in its ability to perform all the duty of a foot congenitally normal.

Although congenital club-foot has been chiefly kept in mind in the above pages, the views expressed in regard to the influence of the weight of the body are applicable also to talipes varus of paralytic origin. In this affection, at an early stage, and before the foot has lost its flexibility, a simple walking-brace is needed, as in Figs. 19 and 20, to properly direct the action of the weight of the body on the paralyzed foot. At a later period, if this measure has been neglected, and the foot has been allowed to become varus, and more or less inflexible, the case will require more attention and probably prolonged effort, with multiple straps and adhesive plaster, to carry the foot across the line between deformity and the norm, to the position in which the weight of the body shall be a correcting and not a deforming force.

It has recently been proposed to try to remedy the nuisance caused by the flats in the Charles River basin by damming the river. A correspondent writes to say he has done this all summer without effect.

OBSERVATIONS ON CHOLERA.[1]

BY J. H. McCOLLOM, M.D.

At this time a short account of the different epidemics of cholera that have visited this country, at intervals during the past sixty years, may not be inappropriate.

In 1832 the disease crossed the ocean for the first time and entered this country by way of Grosse Island, the quarantine station for Quebec. From April 28, 1832 to June 3, 1832 there arrived at Grosse Island four cholera infected ships, namely, the ship *Constantia*, from Limerick, Ireland, which arrived April 28, 1832, the ship *Robert*, from Cork, arriving May 14th, the *Elizabeth*, from Dublin, arriving May 28th, and the brig *Carrick* from Dublin, which arrived June 3d. The importation of the disease by the immigrants on these ships was the origin of an epidemic that extended to Quebec, to Montreal, up the St. Lawrence and along Lake Ontario, down Lake Champlain to Albany and New York. From New York cholera extended to Newport, Boston, Newark, N. J., Philadelphia, Baltimore, Charleston, S. C., and Washington, D. C., during the months of July and August. This epidemic spread from Chicago and St. Louis down to New Orleans. At the end of the year 1832 the United States was free from cholera.

The next epidemic occurred in 1848 and 1849. On November 9, 1848, the ship *New York* sailed from Havre with a clean bill of health, for New York, but when she was some sixteen days out cholera appeared among the steerage passengers. On her arrival at New York the ship was quarantined, and the disease did not extend to New York city. In very great contrast to the history of this ship is that of the *Swanton*, which left Havre on October 31, 1848, bound for New Orleans. Cholera appeared after she was twenty-seven days at sea. The arrival of the cholera cases on the *Swanton* was the source of an epidemic that cost New Orleans 2,500 lives. This epidemic of 1848 at New Orleans extended to St. Louis and Chicago.

The most severe epidemic of cholera that Boston has ever had was in 1849, when there were about 700 cases and 611 deaths. A hospital was established at that time on Fort Hill; the first patient was received June 29th, and the last patient was discharged on the 15th of November.

Dr. Henry G. Clark, city physician at that time, says, in his report upon the epidemic, that the cases of cholera were found chiefly among the foreigners, and that they were mostly intemperate subjects. The number of people in easy circumstances attacked with the disease was so small that they might almost be overlooked in the history of the epidemic. The general opinion of physicians in this city at that time, was against the theory of the contagious nature of the disease. Of the four physicians, four medical students and twenty-five attendants attached to the hospital, only two exhibited any symptoms of cholera, and in these the attacks were so slight as to leave the question of diagnosis in abeyance. It is a very important fact as bearing on the subject of danger to the public health in the establishment of hospitals in a city, that no case occurred on Fort Hill that could be traced directly or indirectly to infection from the hospital. No cases occurred in the immediate vicinity of the hospital, but they were limited entirely to the houses on the northeasterly side of the hill, which were occupied by the most miserable part of the population living in the most miserable manner. At this time the disease prevailed extensively in the rear of 136 Hanover Street, Mechanics Court, Batterymarch Street, Humphrey Place, Burgess Alley, Cross, Broad, Well and Wharf Streets.

In East Boston there were quite a number of fatal cases in or near Liverpool Street, but in every instance as far as could be ascertained the cases occurred in houses which were without proper drains; while other houses in the same locality that were well drained entirely escaped. In Burgess Alley and Half-Moon Place, a part of the city in which the houses had privy vaults in a foul and filthy condition, the disease ran riot. Quite a number of the inhabitants in this locality lived in basement tenements, and this was found to be a potent factor in causing the prevalence of the disease. This epidemic, commencing in June, was practically over in Boston the latter part of September or the first of October, 1849, although the United States as a whole was not free from the disease until 1855. During this time cholera was very prevalent in India, Asia and Europe.

In 1854 there was a second epidemic of cholera in Boston. The number of deaths from this disease was 218. Although there is no published account of this epidemic, the fact that it caused considerable anxiety is evident from the report of the consulting physicians to the mayor and aldermen of the city of Boston. The text of this report is as follows:

> TO THE MAYOR AND ALDERMEN OF THE CITY OF BOSTON.
>
> *Gentlemen:* — In reply to the interrogatories proposed this day by the mayor to the consulting physicians of the city, the undersigned beg leave to state:
>
> That the cholera now exists in Boston, as in most large cities in the United States, but in so limited a degree as not to be considered a general epidemic.
>
> A careful and temperate diet, both in regard to the quantity and quality of food, an avoidance of all excesses, especially in the use of intoxicating drinks, and the observance of customary precautions such as have been repeatedly indicated by this board in former epidemics, constitute all that now occurs as necessary to be noticed in regard to the conduct of individuals.
>
> The consulting physicians concur in the propriety of an efficient prosecution of the active sanitary precautions which are stated to be in progress in the city, and they particularly recommend, as far as possible, the filling up of stagnant pools of water with earth, the separation of the poor who reside in over-crowded tenements, and especially their removal from cellars which are damp, foul and unwholesome.
>
> [Signed] GEO. HAYWARD, JACOB BIGELOW, Z. B. ADAMS, JAMES AYER, } *Consulting Physicians of Boston.*
>
> Boston, July 12, 1854.

In the history of this epidemic it is interesting to note that the *Glenmanna* came to Quebec from Liverpool June 15th, having had 45 deaths from cholera during the passage. The disease extended to Niagara Falls, Buffalo, Detroit, and west of the Niagara River; but whether it came to Boston from Canada or New York or New Orleans is a matter of doubt.

The epidemic of 1866 in Boston was probably due to the arrival of the *Virginia* at New York, from

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, September 21, 1892.

Liverpool, with 1,029 steerage passengers, having lost 38 from cholera during the passage, and having 46 sick with the disease on her arrival. From this time until November 28, 1866, six ships arrived at New York more or less infected with cholera. In Boston there were 37 cases reported during the year, of which 18 died. The first case occurred on April 5th, and the last case on November 16th. On September 16th of that year, Dr. A. A. Gould, the honored physician, the true gentleman, the man of culture, whose scientific attainments were second to none, fell a victim to the disease. The victim of the last case was the eminent and distinguished physician, Dr. W. E. Townsend, in whose death the profession suffered a great and irreparable loss.

From 1866, at various times, to 1873, cholera was prevalent in Europe. The disease did not visit Boston during this time, although epidemics of greater or less severity prevailed through the western and southern portions of the country. The disease found its entrance to this country in 1873 through New Orleans, probably by way of Hamburg or Bremen.

The epidemic of 1883 and 1884 in India, France, Italy and Spain, did not reach this country. It was during this epidemic that the well-known and important discovery of Professor Koch regarding the comma bacillus, as the cause of the disease was made. The importance of this discovery and its bearing on the prevention of epidemics of cholera cannot be overestimated.

The present epidemic in Europe, 1892, started from India, probably from Calcutta, and extended to Persia, from there to Russia, and from Russia to Hamburg, and from Hamburg, by means of immigrants, to quarantine at New York.

Dr. W. J. Simpson, the health officer of Calcutta, in his report for 1890, says, that although cholera is always prevalent to a greater or less extent in that city the year round, it does not prevail extensively until after the festival at Hurdwar on April 12th, the great bathing day. He says in his report, in describing the scene, that such a seething mass of humanity in constant motion, entering and coming out of the sacred water of the Ganges, could be seen in no other country, and reminded him of the agitation of myriads of moving creatures which one sees under a microscope in a colony of microbes. Professor Cunningham made a microscopical examination of the water and found that above the place of bathing there were very few of the comma bacilli; but at and below the place of bathing they were found in great numbers. Dr. Simpson also says: "That his study of the Hurdwar Fair confirms the view that cholera does not occur in a locality outside the endemic areas without importation; also that importation is not by the wind; and thirdly, that the danger of extension when importation has taken place, lies mainly with contaminated water. Moreover, that sanitation in its widest sense, including attention to the water-supply, to purity of air and soil, to conservancy supplemented by the adoption of measures to keep out as far as possible the disease, and in the event of such disease gaining an entrance, to isolate it promptly, is the practical safeguard against cholera." The effect of a contaminated water-supply on the causation of an epidemic of cholera, is vividly shown by a diagram in Professor Koch's report to the Imperial Board of Health on Cholera in Calcutta, in 1883. This diagram shows that the disease was much more prevalent from 1865 to 1869, inclusive, when the water was taken from the Hoogly directly opposite the city, than it was from 1870 to 1874, inclusive, when the water was taken from the river twenty miles above the city, where the chances of contamination are comparatively slight. It is also a very significant fact that 500 persons who drank water from a certain cholera-contaminated well in London, were taken ill with the disease within three days.

The number of instances in which epidemics of cholera can be absolutely and directly traced to a contaminated water-supply is so great, that it is unnecessary to weary you with detailed accounts.

In the *Engineering Record* of September 3, 1892, in an editorial, written by one of our most distinguished sanitarians, appears the following statement: "That the chief risk of anything like an epidemic comes from the general water-supplies. In the recent outbreak in Paris, the cases were almost exclusively confined to those who drank polluted Seine water." In the issue of September 10th, of the same journal, the same writer says: "That the effect of 50 cases of cholera in the worst tenement district in New York City, will be as nothing in spreading the disease, in comparison with the discharge of a single cholera stool into one of the branches of the Croton, by a sick tramp."

As the comma bacillus is conceded by all scientific observers to be the cause of the train of symptoms known as cholera, it is, therefore, important to know something in a general way of the nature of this microbe. A full and extended account of Professor Koch's views on this subject appeared in the *British Medical Journal* of August 30 and September 6, 1884. Professor Koch says that the comma bacilli flourish best at temperatures between 86° and 104° F., but that they do not grow very rapidly at lower temperatures.

Various experiments have been made which show that while at 62.5° F., the comma bacilli may grow comparatively well, the growth is slow. At 60.8°, their growth seems to cease entirely, although they are not killed. A temperature of 14° F., does not absolutely kill them, but it does hinder development. When deprived of oxygen, the same effect was noticed as in a low temperature, that is to say, the bacilli were not killed, but simply that their development ceased. Under suitable conditions of warmth and moisture the comma bacilli increase very rapidly for a short time, possibly for a period of twenty-four hours, but this luxuriant growth does not last long, for after two or three days they begin to die, while other bacteria begin to increase. The same conditions are found in the intestine itself; there is a rapid multiplication at first, but when the real vegetation period, which only lasts for a short time, is over, and especially when exudation of blood into the intestine takes place, the comma bacilli disappear, and other bacteria, especially putrefaction bacteria, commence to develop in their place.

Quite a number of experiments have been made regarding the effect of the different germicides upon the life of the microbe. Alcohol, in a ten per cent. solution, stops the development of the comma bacilli only when added in a proportion of one part to ten of the nutritive fluid. As sulphate of iron is frequently used as a disinfectant in an epidemic of cholera, it is important to recognize the fact, that it does not kill the bacilli; but it simply hinders their development. It does, however, stop putrefactive changes which would cause the death of these organisms. The use of this agent, therefore, is to be avoided in cases of cholera. Carbolic acid (one part to four hundred of the nutritive fluid), peppermint oil (one part to two thousand), sulphate of copper (one part to twenty-five hundred), quinine (one part to five thousand), corrosive sublimate (one part to one hundred thousand), possess the power of arresting the development of this microbe, and it is possible that they may absolutely cause its death. One very important point was brought out by these experiments, namely, that the comma bacilli die very easily when dried, and this may explain the fact, why epidemics of cholera disappear after a certain time. There is a very marked difference between the vitality of the specific germ of cholera, and that of small-pox. The former dies a natural death, while the latter may retain its vitality, when dried, for an indefinite period.

The arguments for and against the contagious nature of cholera are so many and so varied that more than a brief allusion to some of them would prolong this paper to an unreasonable extent. Dr. J. M. Cunningham, Health Commissioner of India, who has studied the disease where it is endemic, says emphatically that cholera is not contagious. He says, that from the record of about 8,000 attendants on cases of cholera in India, it is proved that they suffer no more than other people living in the same place. Surgeon-General Hunter, in his report on the epidemic of cholera in Egypt in 1884, expresses a decided opinion against its contagious nature. In the *Engineering Record* of September 10, 1892, the editorial writer says that patients ill with cholera can be attended, washed and lifted with very little risk, but that the discharges from the bowels are the chief, if not the only source of danger. Dr. Goodeve, who has had an extended experience with cholera in India, says that the disease does not spread from the sick to the well by any rapidly acting emanation. Lebert's views on this point are as follows, "That cholera can be spread only by contagion, that is, by germs which are carried from a diseased to a healthy person; but that these disease germs infect only comparatively rarely by intercourse or contact with cholera patients, since they possess relatively but little vitality in the air of the sick-room, and are present mostly in inconsiderable quantity. On the other hand, a certain number of the germs and a given vitality are necessary for the propagation of the disease, and these conditions are better met in fluids than in the air; hence contagion is more frequent when the germs are communicated through a fluid than when transmitted through the air."

From a study of the observations made in a recent epidemic in France, Dr. N. Mireur arrives at the following conclusions:

(1) "Cholera is not transmitted directly from the sick to the well either by contact or through the respiratory passages.

(2) "The products emanating from cholera patients, the dejections and vomited matters, contain a germ which is not immediately transmissible by itself, but which placed under favoring conditions, gives rise to a contagious principle.

(3) "Clothing and merchandise, much more than individuals, are the agents for the transportation of this principle."

From a careful study of the different authorities on this subject the general opinion seems to be:

(1) That cholera is mildly contagious.

(2) That the principal, if not the only, way of infection is by the alimentary canal.

(3) That the germs of the disease are carried only a short distance, if at all, through the air.

(4) That the great danger of infection lies in the intestinal discharges, and in the vomitus.

(5) That contamination of the water-supply, and of food, by these discharges is the chief source of danger.

(6) That linen or woollen fabrics soiled by cholera discharges, if excluded from air and sunlight, serve to keep alive the germs of the disease for an indefinite period.

The history of the *Swanton*, on which cholera did not appear until she had been at sea twenty-seven days, when clothing was unpacked by the passengers, and also the history of the ship *New York*, on which the disease did not manifest itself until she had been sixteen days at sea, prove the truth of the last statement. If the foregoing conclusions are correct, it necessarily follows that in order to prevent the admission of the disease to a city, and effectually to stamp it out, the following measures must be adopted:

(1) The proper isolation of all cases of the disease, mild and severe.

(2) The disinfection of all discharges, from the patient, by chloride of lime, or carbolic acid as recommended by the International Committee of Experts at Rome in 1885.

(3) The most careful supervision of the water-supply and of food.

(4) The rigid observance of all laws of hygiene in their widest sense.

(5) The disinfection of all persons in whom there is the slightest suspicion of infection by suitable bathing, and of their effects by super-heated steam.

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THE IMPORTANCE OF PUBLIC DISINFECTING STATIONS.[1]

BY S. W. ABBOTT, M.D.,
Secretary of the Massachusetts State Board of Health.

There is one point upon which I wish to say a few words — and the present emergency affords an excellent opportunity to enforce its importance with more than usual energy — and that is the need of a better sanitary equipment in all our large cities of this country for the carrying out of the principles of disinfection.

As at present conducted, in nearly all our large cities the Board of Health relies almost exclusively upon such disinfection as can be performed at the house where a case of infectious illness occurs, such disinfection being conducted either by an official of the Board of Health, or, as our statute prescribes, "by the householder in a manner approved by the Board of Health."

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, September 21, 1892.

The object of disinfection is the destruction of infection, nothing more and nothing less, and thus to render harmless any poison which the sick person may have propagated in the house; and if even the least amount of the poisonous principle of the disease which has invaded that house is left in it undestroyed, just so far does danger still exist to all whom may occupy the house.

Now, I take it for granted, that no one, or at least very few at the present day, seriously doubts the infectiousness of cholera. The history of its spread to this country is a sufficient answer to any one who questions its portability by human beings, and their immediate personal effects and luggage, I have no doubt that we shall find in the present instance, as we have seen in the past, that the New York cases (I mean those which have occurred within the limits of the city) have had some connection, either direct or indirect, with the infected ships and their human freight in the harbor.

Now, as one of the foremost of the means of prevention in all infectious diseases (cholera not excepted) consists in disinfection, we should have in every large city at least one well-equipped disinfection station, with a corps of trained operatives, who should have the entire charge of the disinfection of houses and of all material which has been subject to infection. Such stations should be built of brick, stone, iron, or other impervious material. A prime point of great importance is the construction of a dividing wall to afford absolute separation of all infected from the disinfected material. In this wall the apparatus for disinfection should be located with an opening at each end. There should also be ample means for the washing and boiling of infected clothing, and for the destruction of infected material by fire.

I wish to call attention to the instructions published by the Health Office of the city of Berlin, for the management of the principal disinfection station of that city. This establishment, like the similar one recently built in Paris, has a dividing wall running through the building; and all things in it, horses, men, carriages, and utensils used in disinfection are distinctly separated. One set of men, etc., is employed to bring the infected material from the infected houses, and another set is employed to carry it home after disinfection.

Everything is done with the greatest attention to details and with very explicit instructions. In visiting two of these stations I was obliged to put on a rubber suit and disinfect my hands and hair before passing from one side of the building to the other. No communication is allowed between the two sets of officials.

If disinfection is done at all, it should be well done; and even after all has been done that human power can do in the way of prevention, some minute particle of infectious material may yet find its way from the sick to the well. As sanitary officials, however, we are bound to give to the community all the protection that modern progress in such matters can possibly afford.

Such stations would not only prove useful in case of the invasion of cholera, but very much more so in the case of those far more destructive diseases which are constantly present with us; I mean scarlet fever, diphtheria, and also in the case of typhus, if it should ever find a foothold among us.

For the disinfection of the excreta, which after all carries with it the greatest danger in cholera, nothing should be considered satisfactory but the most thorough disinfection, and this must be done at the house of the sick. But it is through the excreta that other articles are liable to become infected, such as the mattress, bed-linen, clothing of the patient, the carpets, etc., all of which should receive attention as well as the excreta, and their disinfection can best be accomplished at such stations as I have described.

Clinical Department.

TWO CASES OF ULCERATIVE ENDOCARDITIS, WITH AUTOPSIES.[1]

BY A. L. MASON, M.D., BOSTON.

Case I. M. B., a chambermaid, eighteen years old, single, was admitted to the Boston City Hospital March 23, 1883. Her history threw little light upon her condition which was characterized by pain of rheumatic or neuralgic nature in the right thigh, for this she was treated with blisters and the subcutaneous injection of morphine. Physical examination and analysis of the urine gave no positive evidence. Her condition, though giving rise to an appearance of anxiety on the patient's part, presented no alarming symptoms whatever. The pulse was 92, temperature 98° F.

On the following day the left little finger at its distal end became swollen and painful, and in a few days required lancing. A little pus escaped. Four days after entrance there was a severe rigor followed by sweating. The temperature after the chill was 105.2° F. On the fifth day pain in the right wrist, without redness or swelling, ensued, and a papular eruption appeared on the face. Ten grains of salicylic acid were given every hour for one day; but this remedy was discontinued, as it did not appear to modify the articular pain. The temperature was 103.5°. Careful examination of the heart discovered nothing abnormal.

During the second week she complained greatly of general soreness and aching pain in the limbs. Diarrhœa ensued, with a moderately swollen and tympanitic abdomen. There were from three to six loose, dark dejections daily. Nose-bleed occurred several times. The conjunctivæ were congested, and petechial spots appeared on the abdomen. The tongue and throat became dry, and several small superficial white patches were noticed on the pharynx and uvula. There was no glandular enlargement. The continued febrile condition became marked, and stimulants were freely given, also sponge baths frequently. A grain of opium, with quarter of a grain of sulphate of copper, every six hours, partially controlled the pain and diarrhœa.

The symptoms, which at first might have pointed to a rheumatic origin, had now become rather "typhoidal," although the general appearance of the patient was not that of one suffering from typhoid fever. The face was pale, the eyes were congested, there was constant restlessness; occasional vomiting of bilious fluid occurred, with great pain and distress when moved in bed, and an appearance of intense suffering which was not localized. Non-remittent high fever and pulse continued. Chills and sweating were not prominent symptoms.

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[1] Read before the Section for Clinical Medicine, Pathology an Hygiene, of the Suffolk District Medical Society, April 20, 1892.

At the beginning of the third week in the hospital the patient was feeble and evidently failing, but no positive diagnosis of the cause of her condition could be made. The diarrhœa continued; delirium ensued and became active; fresh petechiæ appeared, with large ecchymoses on the buttocks and the left heel; she became semi-comatose with contracted pupils; the temperature remained at 105°, the pulse at 160; the sphincters were relaxed; and she died exhausted, seventeen days after entrance.

Autopsy, by Dr. W. W. Gannett.

In connection with the brain the only points of interest were three necrotic nodules of reddish-yellow color, about two millimetres in diameter; one situated in middle of right optic thalamus, the other two situated at the junction of the gray cortex, with white matter at the base of the sulcus in left parietal lobe. Pericardium contained about ten centimetres of clear fluid. Beneath pericardium were numerous small petechiæ, with one small yellow point having a red periphery.

The heart was of the usual size. Ventricles somewhat distended with partly coagulated blood. Aortic and pulmonic valves sufficient. The mitral valve would have admitted the thumb; tricuspid, three fingers. Aortic valves, not remarkable. Segments of mitral valve showed three or four ulcers, about seven millimetres in diameter, with thin and slightly raised edges; ragged, irregular bases; covered in part with opaque, grayish material, somewhat friable, apparently fibrin. Numerous colonies of micrococci were found. Several ecchymotic spots were found here and there; and in the spleen, under the capsule, were several opaque yellow nodules, varying from five to twenty millimetres in diameter, elevated above the surface. On section, surface showed numerous, irregular, opaque, yellow areas, varying in width from five to twenty millimetres, and in length from ten to fifty millimetres. Spleen about one-half larger than normal. Several opaque, yellow nodules in the kidneys. On section, these nodules were found to extend a variable distance into the kidney, having a general vertical course. Renal tissue, in general paler and more mottled than usual.

The ovaries and Fallopian tubes were doubled on themselves, and united into a firm mass by connective-tissue bands.

The uterus was of the usual size. Mucous membrane slightly reddened, thickened and injected. Fallopian tubes each measured about one centimetre in diameter. Lumina much dilated. Mucous membrane of grayish-black, shreddy appearance. Contents consisted of *grayish-black, putrid, thick fluid.*

One small opaque nodule in the liver. Intestines normal.

CASE II. A. S., aged twenty-seven, married, entered the hospital May 10th. She had had five children and two miscarriages, the last one occurring three months before admission. At the time of entrance the following history was obtained from the patient and her friends: She had had chills every morning and evening for a week, with pains in the joints and extremities; for five days a red, painful swelling in the right cheek; constant headache; nausea and vomiting; diarrhœa; bronchial catarrh; no epistaxis. There had been slight delirium for two days; congestion of left eye, but no disturbance of vision. Temperature 104.2°, pulse 144.

Urine: acid; specific gravity 1020; color normal; one-eighth per cent. albumen; a few brown granular and doubtful hyaline casts.

The joints did not present the appearances which accompany acute rheumatism, but salicylic acid was given in full doses for one day, with no effect upon the pain and little in reducing the fever. Morphine was used in frequent doses of one-eighth of a grain.

May 11th. A large ecchymosis appeared on the left heel, and a few petechiæ on the dorsum of the right foot and hand. There were swelling and redness of the backs of both hands, apparently unconnected with the joints. The conjunctivæ were congested; the tongue was dry and cracked; the respiration labored, with a terrified and anxious countenance. Fresh ecchymotic spots appeared on both arms and legs; the extremities were cold, sensitive and slightly œdematous; mild delirium continued, with a temperature of 103° and a pulse of 135.

The left pupil was contracted and the vision of that eye lost. Both feet were turned in and flexed, particularly the left one. The headache and diarrhœa ceased to the troublesome; the patient retained consciousness and complained greatly of soreness of the limbs.

Careful examination of the heart failed to show any thing abnormal, although a systolic murmur at the base was noticed at the time of entrance. Stimulants were freely administered, but the patient failed steadily, and died three days after entrance.

Autopsy, by Drs. Preble and Sawin, sixteen hours post-mortem: Numerous ecchymoses on the right leg and hands. Considerable œdema of legs. Upon removal of the calvaria an ecchymosis, an inch in diameter, was found in the right posterior parietal region, external to the dura mater. Slight œdema of pia with distention of veins. Brain and membranes otherwise normal. Beneath the pericardium were numerous petechiæ. Heart was normal in size, color, and density. Aortic and pulmonic valves not abnormal. Mitral curtains showed roughened, injected, and thickened edges on one side, with a warty appearance on the other. Pleuræ and lungs not remarkable. On section, the left kidney showed a softened nodule of grayish-red color extending inwards to the pyramids. This nodule was about one-half by three-quarters of an inch in size. The Fallopian tubes were matted together by old adhesions. The lumina were enlarged, and contained a few drops of non-offensive pus. The uterine mucous membrane was reddened and injected, but not much thickened. No intestinal lesions were found.

REMARKS.

In following the train of the symptoms, usually called pyæmic or diphtheritic, which result in secondary ulceration of the cardiac valves, the process must be one of exclusion, and the diagnosis often conjectural. Unusual forms of typhoid, typhus and rheumatic fevers are of frequent occurrence, and it falls to the lot of few physicians to recognize many cases of the disease in question, of which the characteristic phenomenon, ulceration of the valves, often gives rise to no sign, no abnormal sound. The patient dies in many instances, as in our second case, before this process has culminated in severe valvular lesion or rupture; but the wart-like valvular growths (endocarditis verrucosa) often contain the bacterial colonies.

In both these cases the starting-point of infection may have been the Fallopian tubes. The condition was diagnosticated, in Case II, with considerable confidence during life.

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TWO CASES OF SEPTIC ENDOCARDITIS.[1]

BY ALBERT N. BLODGETT, M.D.

G. W., aged twenty-one years, was seen for the first time January 15, 1892. Patient has always been in good health and comes of a long-lived family. Present illness is stated to have commenced in December; but he continued his work as expressman, until Christmas. From that date he has been in bed most of the time, though he sometimes lay on a sofa. He has been recently treated for a venereal disease accompanied by a purulent discharge from the urethra, from which he is not at present fully free. A definite history of the case is difficult to obtain, but he is said to have fainted on Christmas day, to have become ghastly pale, and to have remained very weak, and later to have passed stools of very dark color, of tarry consistency, and of intolerably offensive odor. At the time of my first visit, patient was in bed, the skin of the face, hands and visible mucous membranes was blanched, the tongue dry, the lips parched, the voice husky, throat dry; swallowing was painful and difficult, and the general appearance was that of profound anæmia. Liver dulness increased, urine scanty, otherwise normal. There are dark patches on the cheeks, eyelids, lips and other places, consisting of minute ecchymoses or extravasations beneath the skin, giving the parts a dusky appearance which does not disappear on pressure. There are large dark-greenish-brown ecchymoses beneath the ocular conjunctivæ of each eye. Vision not impaired. Belly is prominent and tympanitic. No examthem is present, though the mother states that there was a rash on the trunk when the patient was first taken sick. There has been earlier in the disease a moderate diarrhœa, but that has given place to constipation. There is complete anorexia, with a feeling of weakness and some pain in the stomach. Patient's condition is said not to have materially changed in the last three weeks. He is at present conscious and rational, but is rather dull; there is no active delirium. Pulse 120, temperature 5 P. M. 102° F. No further abnormal condition noticed.

Treatment advised: sponging with solution of bicarbonate of soda. Enema when necessary to relieve lower bowel; a moderate amount of bromide of potassium was administered to diminish the restlessness, and digitalis was prescribed for the evident cardiac weakness, with whiskey and milk in small quantities at intervals of two hours. Half a drop of carbolic acid was given in repeated doses to control the gastric uneasiness; with absolute rest in bed, and heat to abdomen. Urine passed voluntarily, not characteristic.

January 18th. Condition much the same. Bowels were evacuated by enema, but there is still tympanites and stupor. No efflorescence is visible, and the ecchymoses noticed at first visit have begun to fade. Tongue and lips parched; sordes on teeth; pulse 120; morning temperature 101° F. Has retained nourishment, and seems somewhat stronger. There is at times active delirium. The general condition of the patient strongly suggests typhoid, but some of the more characteristic signs of that disease are not present, and the period of illness does not correspond to the usual chronology of typhoid. The appearances resemble those of progressive septic poisoning, though any known origin for this condition is lacking unless the theory of infection of the general system from the gonorrhœal virus be accepted. Treatment now comprised nux vomica, gtt. five, with continuance of the gentle sedative p. r. n.

January 20th. Patient seems materially improved. Takes food regularly. Pallor of the surface not so marked; has slept naturally, is conscious and rational. Pulse 112, temperature 100° to 102.5° F. Large dark-colored, horribly offensive dejection occurred during the night.

January 25th. Patient has been gaining until last night, when from no ascertainable cause, he had a severe rigor, lasting about an hour. There was then high fever, thirst, restlessness and pain in left chest over cardiac area. Ausculation now for the first time revealed a mitral systolic murmur of rough character and constant occurrence. Pulse small and jerky, the so-called "Wasser-hammer pulse." There is constant thirst, anorexia, restlessness, and at times nausea. Treatment comprised synapisms to cardiac region; tincture of digitalis every three hours, with whiskey and milk, an ounce every hour; with heat to the extremities. Glycerine lotion was ordered for the mouth and throat, which are parched, fissured and painful. Patient is delirious, and at times tries to escape. Friction and artificial heat to extremities.

January 27th. There is now a distinct double friction murmur, synchronous with movements of the heart's apex and heard most distinctly over the area of normal cardiac dulness. In rhythm the first sound is slightly presystolic in its commencement, and continues through the entire period of systolic contractions, ending with the termination of the first sound of the heart. The second friction sound commences almost at the end of the systolic sound and is of shorter duration and of lesser intensity than the sound just described. Repeated and careful study of the heart led to the conclusion that the adventitious sounds were due to a grave interference with the organic cardiac structures followed by acute disability, and insufficiency of the mitral valve, with subsequent extension to the pericardium, and possible involvement of the muscular structures of the heart itself. The description of the pain over the cardiac area was like that of rheumatic distress in other muscular structures of the body, the patient expressing himself in this manner when asked to locate the seat of the pain.

January 29th. Patient is evidently sinking. Refuses all nourishment and has occasional violent attacks of explosive vomiting. Emaciation is progressing rapidly. Cardiac action weak. Pulse 130, temperature not ascertained, on account of restlessness. His general appearance was that of profound septic poisoning. Cardiac valvular murmur more pronounced, and distinctly regurgitant in character with pulsation in jugulars. General surface cyanozed, expression dull. The patient can be momentarily aroused, but at once sinks into a stupor again. Urine voided involuntarily; bowels constipated. Consultation suggested but declined by the family.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, April 20, 1892.

January 30th. Condition less favorable in every way. No pulse in malleolar arteries, and very weak and thready in radials. Respiration quick and jerky, with considerable mucus râle. Moist râles of pulmonary œdema of both lungs. Is totally unable to take nourishment. Restless and delirious, though not apparently in pain.

January 31st. Died at midnight from exhaustion, without agony.

No autopsy was obtained.

CASE II. R. E., male, twenty-one years of age, had always been healthy and strong till the present illness. In the early part of December, 1890, he contracted a gonorrhœa, which pursued an ordinary course so far as is known, and to which the patient paid no more than the ordinary degree of attention. At about Christmas he was suddenly prostrated by severe pain in various regions of the body, which the attending physician attributed to rheumatism, though there seem to have been none of the usual accompaniments of that disease attending this attack. That is, the pains were not confined to any special articulation, nor to any particular groups of muscles, nor to any special portion of the body, but were of diffused character and excruciating in intensity. The feet and legs, and later the trunk and face, were the seat of œdema, and apparently there was also evidence of exudation in the cavities of the thorax and abdomen. There was great impairment of the heart's action, with supervention of mitral regurgitant and (later) obstructive murmur, which continued with increasing distinctness till death, which occurred during the last week in January of 1891, from exhaustion with hyperpyrexia.

No autopsy could be obtained, and the pathological condition is in so far uncertain as the organs could not be examined; but the clinical picture is plainly that of septic poisoning, with involvement of the heart, and death from the usual progress of the septicæmic process, as illustrated in other undoubted cases of septic poisoning.

An analysis of these two incomplete cases, in addition to the extraordinary group of complete and indisputable cases, presented at this meeting, demonstrates conclusively the septic character of this malady. In all these instances the disease in question has been distinctly traceable to previous septic invasion of the body by some form of bacterial organism, not always nor necessarily the same, and possibly not always determinable in the present state of our knowledge, but at present comprising various known forms of septic or infective germs. I venture to urge the adoption of the term "septic endocarditis" in place of the various names at present indiscriminately applied to the invasion of the cardiac structures by the septic organisms attending a variety of processes affecting other portions of the body, and possibly including causes which are at present not suspected to be of threatening character in relation to the cardiac structures. The term "ulcerative endocarditis" is undoubtedly correct in some cases, as illustrated by the rare and interesting specimen presented by Dr. Ingraham; no doubt the term "malignant endocarditis" is also clinically correct in designating the general course of this class of infective disorders, but it is not always correct, as some cases which were diagnosed "malignant endocarditis" have recovered. In these cases the disease was certainly not malignant, though undoubtedly septic. All known forms of this disease are traced to invasion of the heart by septic organisms of some form, and I cannot but think that classification of this group of diseases under the general name of "septic endocarditis" would be a distinct gain to a correct understanding of the process involved, and would tend to prevent confusion, and to simplify the existing conception of this most alarming and usually fatal complication.

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REPORT OF A CASE OF ULCERATIVE ENDOCARDITIS, WITH RUPTURE OF CUSP; AUTOPSY; SPECIMEN.[1]

BY LENA V. INGRAHAM, M.D., AND GRACE WOLCOTT, M.D.

ON October 15, 1891, the patient, a single woman twenty-three years of age, was admitted to the Vincent Memorial Hospital. She had been under the care of Dr. Godfrey Ryder, of Malden, who wrote: "Patient well until four weeks ago, when she began to have pain in abdomen, which became so severe as to cause her to faint several times."

When seen by him, two weeks previous to admission, her temperature was 102°, and examination by vagina showed "great tenderness over uterus and right ovary, tympanites, nausea and vomiting." She was examined by Dr. Ryder for suspected miscarriage; and "the uterus was found retroverted, normal in size, but with slight laceration of cervix." There was too much tenderness for a thorough examination.

On admission to the hospital, the heart and lungs were normal. Uterus retroverted; cervix soft; right side of uterus not freely movable. Urine scanty, high colored, acid, with a trace of albumen. Temperature 99°. She was put upon douches, fomentations (if needed to allay pain), and liquid diet.

On the morning of the third day, she complained of stiffness of the right knee; and on the same afternoon the temperature rose to 103°. Nothing new could be found upon careful examination of chest, abdomen or pelvis. Next morning (October 18th) there was a discrete, papular and pustular eruption on palms and soles, about the joints and on the soft palate and pillars of the fauces. She complained of sore throat, malaise and pain in the joints; and she had vomiting and diarrhœa and a temperature of 103°. She was promptly isolated, as we feared one of the eruptive fevers was developing.

On the fifth day, both knees, elbows, hands and feet were swollen and excessively painful; the sweating was profuse, and the diagnosis of acute rheumatism was easily made. The eruption gradually disappeared remaining longest about the joints.

On the seventh day, the general condition was about the same, but she became deaf and delirious. The diarrhœa continued.

Eighth day. Less pain, quieter, temperature 103°+.

Ninth day. More pain, first one joint then another being affected. Restlessness marked. Physical examination showed first aortic sound obscured, and a soft, blowing, mitral murmur.

Tenth day. Pulse good. Bowels moved three times. Took nourishment well.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, April 20, 1892.

Eleventh day. Temperature 104°, respiration 34. Small area of pneumonic involvement of lower lobe of left lung. Characteristic expectoration, which lasted three days. Patient weaker.

Twelfth day. Deafness has continued, and patient's mind is wandering more or less all the time. Physical examination shows effusion in left pleura.

Thirteenth day. No extension of pneumonia. Slight bilateral effusion into pleura. Less pain in joints.

Fourteenth day. Epistaxis about one ounce.

Fifteenth day. Epistaxis. Mind wandering. Patient very restless. Temperature 105°. Pack given for half an hour, after which temperature went down to 102°.

Sixteenth day. Epistaxis slight. Temperature 103.8°. Pack. Complains of pain in elbows and knees.

From this time to the twenty-first day the symptoms remained about the same. Diarrhœa, rapidly varying temperature, with wandering and restlessness.

Twenty-second day. Moaning and crying all the time. Less diarrhœa.

Twenty-third day. Fairly quiet slept three hours, which was unusual.

Twenty-fourth day. At 6 A. M., had a severe rigor, which lasted fifteen minutes. Temperature rose to 105°, pulse 104 (weak), respiration 36. This was followed by a drenching sweat. At 10 A. M., temperature 100°, pulse 106, respiration 28. At 2 P. M., temperature 99°, pulse 90, respiration 24. Quiet, rational, and slept well. That evening the temperature began to rise, and at 8 o'clock it was 103°. Passed a restless night. Physical examination shows slight hypostatic congestion posteriorly. Involvement of valves increasing, the murmurs becoming harsher in character. At this time we decided that the case was one of ulcerative endocarditis.

Twenty-fifth day. Temperature ranged from 100°–103°. Patient restless and at times wild. Involuntary evacuations.

Twenty-sixth day. Temperature 105°, pulse 125, respiration 40. Was put in a pack for half an hour but as the packs did not reduce the temperature greatly and the patient was very weak, they were discontinued. Wild delirium and involuntary evacuations.

Twenty-seventh day. Temperature varied from 101°–103°, pulse 116, respiration 40. Dr. C. P. Putnam was called in consultation and he concurred in the diagnosis of ulcerative endocarditis.

Twenty-eighth day. Temperature 102.2°. Restless and wildly delirious. Diarrhœa ceased and urine passed freely. Toward evening she seemed to be going into a collapse, but she rallied under stimulation. At 7 P. M. temperature 106.5°. Examination of heart at this time showed that a new sound had developed. It was loud, shrill and sharp — heard during diastole and systole and at any point over the left chest.

She died at 1 A. M. at the beginning of the twenty-ninth day.

Treatment. — From the beginning the treatment was sustaining, the greatest care being taken in the regular and frequent administration of food either by mouth or by rectum. When rheumatism declared itself on the fifth day the salicylates were given; but in a few days deafness, delirium and wandering ensued, and the potash salts were substituted. The pain under these was severe and the temperature high, and antipyrine with aromatic spirit of ammonia was administered for a short time. No lasting improvement was noted under any of these remedies. Salol and the ammonium salts were then given without favorable result. Aside from the remedies mentioned, quinine, alcoholic stimulants, etc., were used.

Various drugs were used to check the diarrhœa; but the best result was obtained from the salicylate of bismuth, suggested by Dr. Putnam.

Autopsy, ten hours after death:

Rigor mortis had set in.

Lungs normal, except hypostatic congestion posteriorly.

Pericardial fluid slightly increased. On opening the heart, the mitral and tricuspid valves were found bordered with recent inflammatory deposits. Back of one of the aortic cusps was the remains of an abscess, which had undoubtedly been the cause of the rupture of the cusp, as the tissues were soft and friable, and which was covered with a grayish film over which there was thin pus. Strings of fibrin were hanging like a fringe from the edges of the rupture.

The intestines, liver and spleen were normal in size and texture.

The left kidney contained one small abscess.

The ovaries and tubes were normal.

No adhesions about the uterus.

Marked endometritis, with one small red spot in the fundus which was soft and friable.

No examination of the brain was made.

Taking into consideration the temperature, chills, sweating, etc., we were assured of the presence of a septic process. There was no indication from examination of marked trouble in the pelvis. Owing to the fact that an abortion was suspected, and that the patient constantly referred to this in her delirium, there was a chance that this might have been a source of septic infection, especially as the presence of endometritis was shown by the autopsy.

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A CASE OF ACUTE VEGETATIVE (MALIGNANT) ENDOCARDITIS.[1]

BY F. C. COBB, M.D., BOSTON.

Mary S., colored, twenty-two years of age, entered St. Monica's Home, November 14, 1891, complaining of rheumatism. Six years previous she had her only child, and since his birth has had attacks of rheumatism, sometimes accompanied by articular swelling. Two years ago she had typhoid fever. Examination on entrance showed no evidence of inflammation in the joints and was negative as regards the heart. She was discharged, apparently well, in two weeks.

January 28th, she again entered the hospital, complaining of pains in her limbs and back. She had been feeling tired and feverish, with loss of appetite, for about two weeks, during which she had been sometimes confined to bed. No clear history could be reached, owing to her dull mental condition.

A thorough examination failed to show any cardiac murmurs or evidence of enlargement. A few ronchi were heard over both lungs and there was considerable albumen in the urine. Otherwise the examination was negative.

The temperature, 104° on entrance, rose to 106° in the evening. In the absence of any definite symptoms, a probable diagnosis of typhoid was made, and baths and phenacetin were given. In a few days, however, the irregular temperature curve led us to suspect a septic process.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, April 20, 1892.

The heart still showing no murmurs or enlargement or irregularity in action, the abdomen was examined carefully; and as there seemed some tenderness about the pelvis, a vaginal examination was made, with a negative result. Vomiting began about the 31st, and the vomitus under the microscrope showed pus-cells. The vomiting was preceded by a chill and considerable epigastric pain and tenderness.

The possibility of sub-diaphragmatic abscess which had broken into the stomach, was considered; but as there was no tumor to be felt, this was left in doubt since the pus might have been due to a chronic gastritis. On February 15th, she began to have convulsions, each lasting three to four minutes, at intervals of about four hours. In the intervals she lay in a comatose condition and died February 17th.

Autopsy, by Dr. F. B. Mallory.

Body thin, emaciated. Rigor mortis present.

Head not opened.

The heart was normal in size. The mitral valve was studded with numerous cauliflower-like masses (the largest the size of a chestnut), almost blocking up the lumen. The chordæ tendineæ and the upper portions of the papillary muscles were likewise covered by numerous small papillary masses from the size of a pin-head to that of a pea, pinkish-gray in color and quite firm. The aortic valves were likewise covered (one cusp on both sides) with numerous masses (the largest the size of a bean); they were also attached to the endocardium below the valves. The tricuspid valve presented an appearance similar to the mitral, except that there was no one especially large mass, but, instead, half-a-dozen the size of peas. There was no thickening of any of the valves, or interadherence indicative of a chronic endocarditis. Pulmonary valve normal. Muscular substance of the heart pale. Pericardial sac everywhere obliterated by fibrous adhesions.

The lungs were adherent on both sides by dense fibrous adhesions to costal pleura; on section, markedly œdematous.

The spleen was normal in size. Two small areas of ischæmic (embolic) necrosis present.

The kidneys were about twice their normal size. The capsule peeled off readily, leaving a smooth white surface; on section, the cortex was increased in thickness; of a general grayish-white cast, but showing numerous translucent, glistening, elevated areas, most marked in the pyramids, looking as if the kidneys had been soaked in glycerine. Microscopic examination of a fresh section showed but a slight amount of fatty degeneration.

The liver and pancreas were normal.

There was considerable mucus on the surface of the stomach.

Intestine not opened.

The ovaries and tubes were bound down by numerous fibrous adhesions, into which, on the right side, considerable effusion had taken place, giving rise to several small cysts.

The mucous membrane of the bladder was covered with a thin layer of grayish material.

Microscopic examination of the kidney showed areas of round-cell infiltration, thickening of the capsule of some of the glomeruli and filling, with moderate dilatation of many of the tubules (most marked in the pyramids) with a homogeneous hyaline material (casts). The vegetations on the valves were composed of round-cells, blood, finely granular material, and numerous large colonies of micrococci.

Diagnosis: acute vegetative endocarditis (of bacterial origin) of mitral, aortic and tricuspid valves; chronic adhesive pericarditis; chronic adhesive pleurisy; œdema of lungs; embolic infarctions of spleen; chronic interstitial nephritis; chronic pelvic peritonitis.

Dr. George Sears and Dr. Augustus Thorndike saw the case with me; and I am indebted to them for verifying the examinations and for valuable suggestions.

The most interesting feature in this case was the difficulty in diagnosis, caused by the absence of any cardiac symptoms. At no time was there any irregularity in the action of the heart, œdema of the extremities, dyspnœa, increased cardiac dulness or murmurs.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

A. N. BLODGETT, M.D., SECRETARY.

Meeting of April 20, 1892.

Dr. Grace Wolcott read a paper on

ULCERATIVE ENDOCARDITIS.[1]

Dr. C. P. Putnam: I have nothing to add to the description of the case. Such cases are called by the name of "ulcerative endocarditis," but of course we should all recognize that septicæmia covers the ground, excepting so far as the local manifestation is concerned. The patient had symptoms, which, had they occurred alone, one might have called rheumatic, but, in connection with all the rest, it seemed hardly possible they could indicate anything else than septic processes. I think one is impressed in seeing such a case as that, with the idea that we may not be very far wrong, in recognizing, that all cases of acute articular rheumatism are similar in character though of course not exactly the same; that is to say, they are caused by some organism. This case ran through a number of different diseases, that is to say, if we call them separate diseases; rheumatism and skin disease; pneumonia, pleurisy and endocarditis.

Dr. G. B. Shattuck read a paper on

TWO CASES OF ULCERATIVE ENDOCARDITIS; ONE FOLLOWING TYPHOID FEVER, WITH DEATH AND AUTOPSY.[2]

Dr. C. F. Folsom: I have been very much interested in the report of these two cases. Through the kindness of Dr. Shattuck I saw the second case several times. The diagnosis which I made was that of infective endocarditis — and it seemed to me it was the only possible one — with an embolic infarction of the right lung. The last time I saw the patient there were the typhoidal aspect and the physical signs which Dr. Shattuck has described. I had the impression that the spleen became considerably enlarged, but that was not in the notes. I supposed that I should very soon receive notice of the death of the patient, and should have an opportunity to see the organs, and that the diagnosis would be verified. Much to my surprise I heard some time later that the patient had recovered. But as Dr. Shattuck has said, other cases where the diagnosis seemed more absolute of infective endocarditis have recovered, and my opinion of the diagnosis in this case has not been changed by the fact that the patient got well.

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[1] See page 290 of the Journal.

[2] See page 277 of the Journal.

Dr. G. B. Shattuck: I should like to say that I received a note from this young woman six months later, after she had left the hospital, and she was in Prince Edward's Island in perfect health.

Dr. Mallory: In regard to the first case reported by Dr. Shattuck, I did not feel justified at the time of the autopsy in making a positive diagnosis of there having been typhoid fever from a few very slight almost healed ulcerations and moderately enlarged mesenteric glands until I had shown it to others whose experience was much greater than my own. None of the vegetations of the valves were hardened at the time on account of showing the specimen to the class. Portions of other organs were, and I have brought with me a specimen from the kidney showing an embolus of micrococci in the afferent artery of a Malphigian body. They are quite numerous there, also in the spleen. The brain I have not examined yet. In this case evidently the endocarditis was not due to the typhoid bacillus. The case quoted by Dr. Shattuck is the only one to my knowledge where it has been so found.

Typhoid bacilli have been found in pleuritic effusions by Fernet and Loriga and Pensuti; in a periosteal abscess by Achalme; in an abscess of the liver by Romberg; in broncho-pneumonia and in various abscesses by Mya and others; it is rather remarkable, therefore, that endocarditis due to the typhoid bacillus is not a more frequent complication of typhoid fever.

Dr. Shattuck: I did not intend in any way to reflect upon Dr. Mallory's skill in making the autopsy, but the clinician is so constantly in difficulties owing often to the essential limitations of his field of vision that it is, I may say, gratifying to find the pathologists in difficulties at any time owing to any conditions, and I could not resist the satisfaction of expressing it. I did not mean that Dr. Mallory's examination was not careful or that his conclusion was any different from that which any one else would have reached under the circumstances. But the antithesis was also tempting. The clinician is frequently mistaking endocarditis for typhoid fever and he is sometimes doing so very naturally as I have said, it is, therefore, gratifying as a little revenge to find such a combination of circumstances as may induce the pathologist to possibly mistake typhoid fever for endocarditis. That was all I meant.

Dr. A. L. Mason reported

TWO CASES OF MALIGNANT ENDOCARDITIS.[3]

Dr. G. B. Shattuck: I had a case which died at the hospital very much like the second reported by Dr. Mason, but we could not get an autopsy.

Dr. F. C. Cobb reported a case of

MALIGNANT ENDOCARDITIS.[4]

Dr. Mallory: The heart was a most remarkable specimen. I regret I could not obtain it for the Museum. I was only permitted to take away a bit of one of the valves. In the specimen prepared from the valve, the colonies of bacteria are as distinct as in a gelatine culture.

Dr. A. N. Blodgett reported two cases of

MALIGNANT ENDOCARDITIS.[5]

Dr. Henry Jackson: The whole subject of endocarditis has been covered clinically and etiologically by the cases reported here. In the first place, as to the name of the disease, I should agree with what Drs. Shattuck and Blodgett have said, that the name "ulcerative endocarditis" is certainly not desirable. I should prefer the name "malignant endocarditis," as it does not commit us to any theory as to the pathological cause of the disease. The disease is usually dependent upon some septic process. The name "ulcerative endocarditis" is not correct, as the pathological lesion, as shown by the several autopsies here reported, may have been an acute vegetative endocarditis, a name, I suppose, rather given to the soft, grayish granulations found on the cusps of the valves, or to the condition often spoken of as acute verrucous endocarditis, differing from the acute vegetative endocarditis merely in the fact that the growths are more fibrous, or what is spoken of as "coxcomb growths."

Again, the etiology of the disease has been covered by the cases here reported. The first extended mention of this disease was by Virchow, who drew attention to the existence of endocarditis, which he at that time recognized as of septic origin in cases of puerperal fever. One case of Dr. Mason's and probably the second of Dr. Mason's are of that class.

Again, the disease is found complicating pneumonia — as in one of Dr. Shattuck's cases — and also as a complication in the acute infectious diseases. Several cases have been reported as following gonorrhœa. In those cases the specific organism of gonorrhœa has not been found in the valves. Again, certain cases occur where pathologically only a slight lesion of the skin is found, as a simple abrasion or some little ulcer. A case occurred at the City Hospital some years ago, in which death occurred on the tenth day after vaccination. A few hours after he was vaccinated the man had pain and swelling in the arm, symptoms of septicæmia rapidly developed and he died a few days after his entrance into the hospital, not leaving his bed after the second day of the vaccination. The autopsy showed acute vegetative endocarditis. In most cases the acute cardiac process is situated upon a *previously diseased valve*. In eight cases of which I have seen an account of the autopsy, in only one was there no evidence of pre-existing cardiac disease. In a second the pathological evidence of pre-existing cardiac disease was present though the disease was slight in amount, and there had been no symptoms during the life of the patient which pointed to a chronic heart trouble.

Pathologically, we find either the acute verrucous form of the disease, the acute ulcerative, or the acute vegetative, so that clinically we frequently cannot distinguish the particular lesion in an individual case. There is no appreciable difference in the clinical phenomena dependent upon these various lesions and we cannot determine clinically which form of the disease is present.

From the bacteriological standpoint, the subject has been studied for a great many years; even before bacteria were stained by aniline dyes, they were discovered on the valve as masses in acute endocarditis by the use of acids and alkalies. Within the last ten years a good many investigations have been made into this matter. The organisms found have been the ordinary pus-forming organisms, the streptococci, the staphylococci, the bacillus fœtidus of Rosenbach. In three cases out of a large number of cases the pneumococcus has been found existing alone, so that it was probably the cause of the lesion. One case has been recorded very recently in which tubercle bacilli were found in an acute endocarditis. The gonococci have not been found, although the disease has been found associated with gonorrhœa.

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[3] See page 287 of the Journal.

[4] See page 291 of the Journal.

[5] See page 289 of the Journal.

As to the case of Giraud to which Dr. Shattuck alluded, in which typhoid bacilli were found in the valve, that statement was made a number of years ago, and Giraud did not offer any evidence that he had found typhoid bacilli, except that bacilli were present in the valves, and at that time such evidence would have been admitted more readily than to-day, when, if one wishes to establish the diagnosis of endocarditis from the typhoid bacillus, one must establish it only by elaborate culture methods. Even the culture methods which were considered satisfactory five years ago no longer hold good, as many organisms have been found in typhoid fever some of which are very similar to the organism of Koch-Eberth. Giraud did not make the statement, as I saw it in the *Bacteriological Journal*, that he had cultivated the bacilli, simply that he had found bacilli. A good many cases of endocarditis complicating typhoid fever have been investigated; and in these cases the ordinary organisms of suppuration have been discovered microscopically and proven by culture, as in the case of Dr. Shattuck's which Dr. Mallory examined.

A very recent article in the *Centralblatt* is published (from Jurgensen's clinic), in which he speaks of two cases of septic endocarditis, one of which ran a chronic course, the disease being secondary to a long existing organic affection of the heart; the second case was more acute and began suddenly with severe chills, and the patient lived only a few days. In both these cases streptococci were found. He compares such a sudden onset of acute symptoms in a chronic case, to the occasional rapid development of acute miliary tuberculosis in cases of chronic tuberculosis; in which the chronic lesions may have existed for years, when without known cause there may be an extensive development of miliary tuberculosis followed by death in a few weeks with the appearances of an acute infectious disease.

One symptom I find mentioned in all the text-books as of importance in the diagnosis, and that is the existence of sub-conjunctival hæmorrhage, which was noted in Dr. Blodgett's cases.

I came to this meeting intending to say that I had seen two cases, and apologetically to offer a third,— *apologetically*, because the case recovered. Since Dr. Shattuck reported his case of recovery I feel encouraged to say I have seen *three* cases. The doubtful case occurred in the Massachusetts General Hospital at the end of my service as house-pupil. A fatal termination was expected, but the patient recovered or rather became insane. Whether the insanity in that case might have been caused by cerebral lesions due to emboli, I do not feel competent to say.

Recent Literature.

Treatise on Orthopedic Surgery. By Dr. Albert Hoffa. Stuttgart: Ferdinand Enne.

The modern literature of orthopedic surgery is so meagre that any new book on the subject is most welcome, and certainly this thorough and exhaustive work deserves the most cordial reception at the hands of the profession at large and of specialists in the branch. Dr. Hoffa has not only given us the best book on the subject, but a book which merits attention for its excellence as compared to the best work in any department. Dr. Hoffa belongs to the class of orthopedic surgeons who do not in any way narrow their work, or confine themselves to the use of mechanisms, but write thoroughly and understandingly, from the point of view of a well trained surgeon, of all methods which can be employed in the treatment for the correction and prevention of deformity — operative as well as mechanical. His training as a scientific investigator has stood him in good stead, so that the work is the most thorough one that has been written on the pathological facts connected with the various deformities, especially with the deformities of the thorax and the spinal column seen in lateral curvature; the article upon which is decidedly the best that has ever been written.

The first part of the book is devoted to the description of the mechanical and therapeutic measures which are in use in treatment to correct deformities, and in this, Dr. Hoffa shows himself thoroughly familiar with all the German methods that are in vogue; while in his chapter on congenital dislocation, the writer shows his thorough skill as a surgeon, advocating the new methods of operative treatment for congenital dislocation of the hip-joint, by the enlargement of the normal acetabulum and the reduction of the dislocation by bringing the head of the femur to its normal position. Dr. Hoffa's facts as presented thoroughly warrant his earnest advocacy of this new method of procedure; and if his success can be obtained by other surgeons, the procedure promises to become one of the most brilliant triumphs in modern surgery.

The American reader will miss in this book any consideration of the treatment of diseases of the joint, notably hip disease; but it will be remembered that German usage relegates these affections arbitrarily to the field of general surgery; and although caries of the spine falls within the province of orthopedic surgery, hip disease does not. Furthermore, mechanical treatment of hip disease is not as yet as generally the custom in Germany as with us.

If the writer has intentionally limited the field of his work, he has more than compensated the reader by the thoroughness and skill by which he has handled his subject, and by the value of the illustrations, which add much to the book. We trust the work may be translated, and thus laid before the general medical public in America.

Cycling and Vitality.— The *Lancet* has attacked bicycling, and gives a sad picture of what the result may be of too great indulgence in this form of amusement. It believes that there is a great risk of over-exertion, especially in the numerous forms of competition which are so common among bicycle riders.

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MICRO-ORGANISM OF THE SOFT CHANCRE.

UNNA declares that although the etiology of the so-called soft chancre is not clear, its identity with the initial lesion of syphilis is no longer debated, and every one is convinced that it has a specific organism which will be isolated and cultivated. The only work upon this subject that claims attention is that of Ducrey, who, in 1889, described a bacillus which he had observed in great numbers in the secretion of chancres produced extragenitally by inoculation. He did not, however, succeed in obtaining a pure culture, nor did he find its presence constant.

Unna[1] has found in five successive cases, in which there could be no doubt as to the diagnosis, a bacillus in excised lesions, which he regards as most probably the bacillus of the soft chancre. This he found by a special method, namely, that employed by him for plasma and mast cells and for the bacteria of horny tissue. The sections, after hardening in alcohol, are stained with strongly alkaline methylene blue, and decolorized by a mixture of glycerine and ether or styron. Sections thus stained exhibit the whole outer zone of the lesion filled with these bacilli, and these alone. In form this bacillus is small and short. The ends are not rounded. Its chief characteristic is its growth in the tissue in the form of chains. The chains are seen in the lymph channels and between the tissue cells, never *in* the latter, nor in leucocytes. They are found most abundantly in the necrobiotic tissue, and penetrate but a short distance beyond its edges. No other micro-organisms can be detected by this or any other method. The question then arises, whether this bacillus is present only in soft chancres or whether it can be found in other similar affections, notably in ulcerating processes. A large number of initial syphilitic lesions, an herpes ulcer, syphilitic secondary and late ulcerations, an ordinary ulcer of the leg, impetigo and ecthyma ulcers were examined without the discovery of a trace of this bacillus. Soft chancres, which were taking on a syphilitic character, which had shown for some time exuberant granulations, and one that had been treated with dermatol, gave negative results. Hence untreated, young and fresh chancres should be selected for verifying Unna's discovery.

The question whether this is the same bacillus that was described by Ducrey should be left for the latter's decision. The writer enumerates the following points as supporting his view of the causative character of these bacilli: (1) It was found in all the fresh typical cases of soft chancre in very great numbers. (2) It forms in these cases pure cultures in the tissue. Other organisms were found only occasionally and on the surface. (3) It was found in the *tissue* of the lesion. (4) It was not present in other forms of ulcer so far as examined. (5) It offers certain peculiarities that distinguish it from other known organisms which are found in ulcers.

R. Krefting,[2] of Christiania, without knowledge of the work of Unna, publishes the results of his experiments, which are confirmatory of those of Ducrey. The work was begun before he had seen the article of Ducrey, and his methods were practically the same. His investigations were conducted on fourteen public and nine private patients, and consisted in inoculating the secretion from the original ulcers in different places and in many generations, upon the respective patients. In most of the patients the inoculation pustules were continued to the seventh and eighth generations, each time with three punctures. The secretion of the pustules was examined by cover-glass preparations stained with a solution of methylene blue with the addition of borax. It was considered useless to examine microscopically the secretion of the open chancre ulcers, on account of the admixture of so many other organisms. Short, thick bacilli were found in all the preparations from the pustular secretion, with rounded ends, and oftentimes a depression in the middle. They were partly in groups of five or six in the protoplasm around the nucleus, partly occurred singly in the protoplasm. The impression was made that they had a special relationship to the pus cells. The bacilli were found in greater numbers in the case of the private patients, which was probably due to the fact that the latter presented themselves with newer, fresher lesions. Successful inoculations were also made from the secretions of buboes, and the same bacilli found in the secretions of the pustules. Inoculations from the secretions of primary syphilitic lesions failed to produce these bacilli. They may be stained by means of fuchsine and methylviolet, but are best seen when methylene blue and borax are used. They are easily decolorized by alcohol and dilute acetic acid. Attempts were made to cultivate the bacilli on agar, gelatine, and in urine and bouillon, but without success, and these failures are acknowledged to make a great gap in the chain of evidence of the pathological significance of their appearance. The writer regards it as doubtful if they *can* be cultivated on artificial media, as they are almost invariably found in the cell protoplasm and perhaps demand a living cell for their existence. His conclusions are: (1) The bacilli are continually found in inoculation pustules, which are derived from soft chancres; usually without contamination. (2) These bacilli cannot be cultivated in the usual culture media. (3) They may be detected in the pus of virulent buboes, and in pustules formed from the inoculation of this pus. (4) They are *not* found in the pus from non-virulent buboes. (5) The proof of their pathogenic nature cannot be carried farther until a pure culture is obtained. The presence of the bacilli in the inoculation pustules without contamination with other organisms has almost the value of a pure culture.

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[1] Monatsheft. f. prakt. Dermat., June 15, 1892.

[2] Ueber die fur ulcus molle specifische Microbe, Archiv. f. derm. und syph. Ergänzungsheft, ii, 1892.

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THE MOTOR FUNCTIONS OF THE SO-CALLED EXCITABLE REGIONS OF THE CEREBRAL CORTEX.

It is well known that Ferrier regards the motor zone of the cortex cerebri as distinct anatomically from the centres of general sensibility and of the muscular sense, and as, in fact, an appendage to the corpora striata and the general motor apparatus of the craniospinal axis. As a result of the progress of experimental inquiry, it is no longer possible to consider the corpus striatum as an exclusively motor centre, and there is a predominant tendency to regard the motor zone of the hemispheres as composed of complex elements, and as being sensory as well as motor. If actions emanating from these centres are of the highest kind, being classed as psychical and voluntary, they nevertheless conform to the common law of nervous function, having for apparatus afferent and efferent nerves ending in groups of cells which we are forced to regard as the seat of sensory perceptive and motor representations (the product of experience).

Hitzig in 1873, considering the fact that extirpation of the Rolandic centres is followed by loss of voluntary movements, while all the anatomatic and reflex movements are still capable of execution, explained the loss of power as the result of the destruction of the motor images, that is, the ideal representations of movements. He later favored the view held by Fritsch, and in a somewhat modified sense by Bastian and Nothnagel, that the cortical motor centres are also centres of the muscular sense. Every motor representation is accompanied by certain muscular sensations, and the residua of these sensations remain in the cortex as the necessary condition of the psychical revival of the corresponding movement. Munk adds to this theory his doctrine of "sensitive spheres." Here are conserved and associated the images arising from cutaneous as well as muscular sensation and sensations of innervation of the corresponding regions of the body.

The more acceptable theory, which is supported by a steadily increasing body of evidence and is coming more and more into favor, is that of the Italian physiologists, Tamburini, Luciani, and Sepelli. It is called the mixed theory. In the brief exposition which we shall attempt, we shall follow closely the exhaustive review of Jules Soury in his "Fonctions du Cerveau."

The Italian physiologists consider the motor zone as constituted by the centres of cutaneous and muscular sensibility, on the one part, and by the centres of motor ideation, on the other.

"It must be admitted," says Soury, "that there is an ever-increasing number of physiologists who hold to the mixed nature of the functions of the excitable zone, and cases are multiplying of paralysis of general sensibility and of movement in destructive lesions of the central and parietal convolutions." In 1882 Lisso had collected 88 cases of troubles of general sensibility observed in cortical lesions of the motor zone, now called by Tripni and Gilbert Ballet the "Sensitivo-motor Zone," and Exner concludes as the result of his studies "that the different centres or territories of the tactile sensibility of the different parts of the body are in general confounded with the motor centres or territories of the cortex."

The constancy of localized movements produced by the electrical excitation of determined regions of the cortex, the inexcitability of the zones surrounding the motor area, the central localization of convulsions and of paralyses of cortical origin, plead powerfully in favor of the motor nature of these centres. On the other hand, the phenomena of ataxis and of anæsthesia which follow their ablation, do not any the less testify in favor of the sensory nature of these cortical territories. In this domain of general sensibility, what is the physiological function of the nerve cells of the cerebral cortex? To feel and perceive the centripetal excitations transmitted by the spinal cord and basal ganglia and transform them into voluntary motor impulsions. "There must then," says Tamburini, "necessarily exist points which are the primary seat where the sensory excitation, become a conscious perception, is transformed into a motor impulsion. These points must be in great number, and in special relation with the different regions of the body." Tamburini then admits as most probable that these first points of sensory-motor transformation correspond precisely with the cortical centres in the so-called motor zone. Thus, "each one of these centres will be at once a focus of reception and of perception of sensory excitations coming from a given part of the body, and the point of departure of the voluntary centrifugal stimulus going to the muscles from this part." The direct production of localized movements is thus explained as well as the loss of sensibility. In the first case, the electric current is the equivalent of the nervous current; in the second, the ablation of the centres would abolish the perception of peripheral impressions.

In a memoir published in conjunction with Luciani "On the Psycho-Sensorial Cortical Centres," Tamburini has extended to the centres of vision and audition the hypothesis which he had applied to those of the excitable zone. For the effects of electrization of the sensorial regions of sight and hearing "do not differ in any thing from those which are observed on exciting the motor centres of the zone of Hitzig." For the movements of the auricle and of the oculo-palpebral muscles which are thus obtained, are doubtless not of reflex nature, but imply the existence in the sensorial areas of the cortex of motor elements confounded with the cells of special sensibility, or grouped and isolated in nests. The peripheral impressions of the senses when they reach these centres are transformed into voluntary motor impulsions of the muscles of the organs of these senses. One can just as surely provoke an attack of general epilepsy by applying to those sensorial centres an electric stimulus of sufficient duration and intensity. If you excite the zone of audition, for instance, the convulsions will begin by the auricle of the ear of the opposite side.

In 1880, Luciani declared that the study of the facts had produced in him a conception perhaps less precise but certainly more probable, while less exclusive — of cerebral localizations. Thus, he could no longer regard the surface of the cerebrum as divided into distinct zones of movement and of sensibility. With Sepelli, Luciani had noticed that the effects which followed the destruction of a cortical motor centre do not consist solely in a paralysis or paresis of movement, but also in an alteration more or less defined of the different forms of sensibility, cutaneous and muscular.

"The motor centres," says Luciani, "can no longer be considered as localized in the cortical area hitherto called the motor zone, for this zone is not exclusively motor. All the different regions of the cortex are, in divers degrees, strewn with special motor centres. In order to be sure that you have destroyed all the motor centres, you would be obliged to remove the entire cerebral cortex."

These views have been confirmed in a remarkable manner by the histological studies of Golgi and the researches of numerous physiologists during the past ten years,[1] and give us a conception of the excito-motor functions of the highest nerve centres which is in harmony with our knowledge of the functions of the lower nerve centres.

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MEDICAL NOTES.

Cholera. — During the past week the cholera has distinctly diminished throughout Europe except in Hamburg where the number of new cases and deaths reported continue about the same. Since the first outbreak of cholera in that city, 14,894 cases and 6,506 deaths have been reported. Artesian wells are being sunk in the city and suburbs in order to obtain a supply of pure water. In England cholera has as yet obtained no foothold.

Since the date of our last note there have arrived two infected steamers at quarantine at New York, the Heligoland, an oil-tank steamer, carrying no passengers, two of whose crew died of cholera, and the Bohemia from Hamburg, on which eleven deaths from cholera occurred during the passage and four cases have developed since her arrival in quarantine. There has been one death from cholera at Camp Low, otherwise the situation at quarantine is very encouraging. Between August 6th and 13th there were five deaths from cholera in New York. Since the latter date no new cases and no deaths have occurred.

The Pan-American and the International Medical Congress.— The Committee on Organization of the Pan-American Medical Congress will issue the Preliminary Announcement of the Congress within a few weeks. This announcement will show that the organization has been perfected in almost every colony and country of the Western Hemisphere. The local medical societies in each of the constituent countries are made auxiliary to the Congress, which will be held in Washington, D. C., September 5, 6, 7, 8, 1893. Dr. C. A. L. Reed, of Cincinnati, Secretary-General of the Congress and Chairman of the Committee on Organization, announces that after extended correspondence between himself and Dr. Maragliano, of Genoa, General Secretary of the International Congress, the date of the Rome meeting has been finally and definitely set for September 24th, of next year. This gives an interval of sixteen days between the Washington and the Rome meetings, during which time an easy trip can be made from the former to the latter city. It is possible that a steamer may be chartered direct from New York to Rome.

Diabetes following Extirpation of the Pancreas.— Minkowski has found that not only in dogs but also in cats and pigs a severe form of diabetes mellitus follows the entire extirpation of the pancreas. In birds this does not occur. In order further to show the special function of the pancreas, the author after removing the pancreas from the abdominal cavity has transplanted pieces of it under the skin of the abdomen. By so doing, the appearance of the diabetes is checked even after the entire removal of the pancreas from the abdomen, but if the transplanted pieces are subsequently removed, diabetes soon appears.

Women in the British Medical Association. — A special meeting of the British Medical Association was held in London, August 24th, to consider the question of the admission of women to the Association. Fourteen years ago when the question was brought up a large majority voted against the amendment. It appears that since that time the feeling in the profession has greatly changed. On the present occasion there was very little opposition, and the resolution that they be admitted was carried by a large majority.

NEW YORK.

Cases of Cholera in the City.— Up to the present time it has been found impossible, with perhaps a single exception, to trace the origin of the disease in any of the sporadic cases of cholera which have occurred in the city. In the possible exception referred to, the patient was an infant belonging to a family in which two German young women who had recently arrived from Antwerp, on the steamer *Friesland*, were boarding. It is a fact, however, that neither of the girls had had the disease, nor were there any cases of cholera on the ship during her passage. These girls, together with two others who came over with them and had secured places as servants in New York, have now been quarantined at the Willard Parker Hospital on East 16th Street. The majority of the other cases of cholera in the city have been among Germans, but none of the patients were recent arrivals, nor, so far as is known, had any of them been associated with immigrants from infected ports.

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[1] See Dana's résumé in the Journal of Mental Diseases, October, 1888.

Sanitary Inspectors.— On account of the increased duties devolved upon the Board of Health by the presence of cholera cases, it has been found necessary to increase the extra corps of sanitary inspectors from fifty to seventy-five. These physicians are engaged for one month at a salary of one hundred dollars. The Board has issued a circular recommending that all railroad depots, ferry-houses, factories, and other places where large numbers of people congregate, should have a room set apart for temporary isolation, and giving directions for the fitting up and management of such places of isolation.

An Emergency Fund.— The Chamber of Commerce has raised by subscription an emergency fund of $250,000, for immediate use in any way that the public good seems to demand. Later an effort will be made to obtain a refund from the proper authorities when the present emergency is over, and any surplus not used and any amount refunded is to be returned pro rata to the donors.

Miscellany.

DIAGNOSIS AND TREATMENT OF CHOLERA.

Dr. William Osler,[1] in a short paper on this subject, points out that in Asiatic cholera we are confronted with a lack of symptoms distinctive of and peculiar to the disease. A case of cholera nostras may present every feature of the imported malady, though it rarely kills with the same rapidity. The preliminary diarrhœa, the vomiting, the copious serous discharges, the collapse and cyanosis offer no differential criteria. The difficulty in diagnosis has been shown in the disease which has existed in the vicinity of Paris throughout the summer. Such being the case, each physician should of course, if there is the least suspicion of Asiatic cholera in his locality, treat each case as if he were dealing with true cholera. Dyspeptic conditions and diarrhœa give timely warning in many instances, but by no means in all, for an individual may go to bed feeling quite comfortable and wake during the night with a severe attack of cholera. Bacteriologic examination is extremely important in case the presence of true cholera is doubtful. This is not always an easy matter, and requires the experience of one familiar with the complex flora of the intestines. Certain drugs have been recommended for the purpose of controlling the multiplication of the bacilli in the bowels, or neutralizing the action of their poisonous products. Salol, in doses of from fifteen to thirty grains, may be given every hour at first, for four or five hours, and subsequently every three hours. Brunton has advised atropine to counteract the cyanosis. Collapse may be relieved by hot stimulants as tea, coffee, brandy, and the external application of heat, especially the hot bath. To check the vomiting, cracked ice and champagne, creasote, hydrocyanic acid, menthol and other means may be tried. Collapse is undoubtedly directly due to the diarrhœa, and yet it is probably an effort of nature to get rid of the poison. General opinion is strongly in favor of the use of remedies to check the profuse discharges. Morphine, hypodermatically, is of great value. Opium and ether may be given, with or without astringents. Lactic acid has been recommended in France.

Two special measures may be given a through trial, hypodermatoclysis and enteroclysis, recommended by Cantani upon the ground that the organism has lost a very large quantity of its water which must be resupplied in order to sustain life. For the first he recommends eighty grammes of common salt, and six of carbonate of soda, dissolved in two litres of boiling water and cooled. From one to two litres of this fluid is allowed to flow slowly beneath the skin of the flanks through a fountain-syringe and the canula of an aspirator. The tumor formed by the fluid is slowly rubbed away. He advises the warm bath in conjunction with the infusion. This may be repeated in two or three hours. For enteroclysis, a mixture of laudanum and tannic acid is employed. The formula consists of from five to ten grammes of tannin, thirty to fifty drops of laudanum, and fifty grammes of powered gum arabic in two litres of boiled water or infusion of chamomile. This should be given early, as soon as it is found that a simple diarrhœa does not yield at once to rest in bed and simple remedies. The rectal syringe is furnished with an elastic tube three metres in length. With this the whole length of the colon can be filled, and often a quantity can be made to pass into the small intestine. The temperature of the mixture and the quantity may vary according to the age of patient.

NOTE ON THE SOLUTION OF PEROXIDE OF HYDROGEN.

The most convenient way, according to Dr. E. R. Squibb,[1] of indicating the strength of a solution of hydrogen dioxide, is by the number of volumes of active oxygen any volume of a given solution will yield. Most makers sell their solutions for fifteen-volume solutions, but as a rule they are not more than one-half this strength. The writer examined nine samples of solutions of peroxide of hydrogen from five different makers, and found the strength in volumes varying from 7.3 to 10.9 volumes.

As made by the ordinary manufacturing processes lower strengths keep better, especially in warm weather, than a fifteen-volume solution. If a uniform strength of ten volumes was adopted by all makers there would be much less disappointment in the use of the agent. The purer a solution the less likely it is to decompose. A fairly pure solution when kept for many days in an open vessel, even at a summer temperature, will grow stronger rather than weaker, because water evaporates off faster than the dioxide decomposes. Decomposition is always indicated by minute bubbles of oxygen rising through the liquid to the surface. Fairly pure solutions may be evaporated down by exposure in open vessels, or by a gentle heat in a water bath to a very caustic solution of thirty to forty volumes at least, and when made distinctly acid such solutions are fairly stable, especially when dissolved in ether. A ten-volume solution is about as strong as is ever needed in medicine. The presence of a free acid is absolutely necessary in all solutions to prevent decomposition. Only a little is needed. Much free acid renders the solution hurtfully irritant.

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[1] Medical News, September 10th.

[1] New York Medical Journal, 1892.

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THE IMPURITY OF ICE.

It certainly seems a strange thing, as Charles Platt[1] remarks, that while many people will exercise the greatest caution regarding their drinking water, they so seldom call into question the purity of the ice which they consume. This state of things is doubtless largely due to the once popular theory of the purification of water by freezing. Practically, owing to its formation in peculiar needle-like crystals, ice may and does hold considerable foreign matter mechanically enclosed.

Of late years the pendulum has perhaps swung the other way, and statements have been made not only denying that water is purified at all by crystallization, but also going so far as to say that certain bacteria thrive best at this low temperature.

That there can be any activity at all of bacteria at this low temperature is yet to be proven. Bacteria are not necessarily killed outright by the freezing of water, but in a longer or shorter time their vitality is lost. The examination of ice for impurities must be conducted with great care in order to arrive at correct results. The deductions from the investigation in 1888, by the Massachusetts State Board of Health, of fifty-eight sources of ice-supply were briefly as follows:

"In the formation of the ice the color and saline matter of the water are completely removed, and also all but thirteen per cent. of the other impurities. The same cake of ice will vary greatly as to quality in different parts. The substances in solution are excluded from the ice in much larger proportions than are those in suspension. Of the different kinds of ice classified as snow ice, bubble ice and clear ice, the two former contain a far greater percentage of impurity than the latter, while the upper third of the cake in all cases carries a larger percentage of impurity than the lower two-thirds." Flooding snow to make ice is therefore a bad practice. In snow ice was found eighty-one per cent. as much bacteria as in the water itself. The ice as a whole contained but ten per cent., and the clear ice but two per cent. Total organic impurities of snow ice is sixty-nine per cent. of those of water, of ice (not snow ice) twelve per cent., and of clear ice six per cent. The air accounts for part of the organic matter in snow ice. More important than the number of bacteria that may be present in ice is the kind. No water-supply, therefore, not fit for drinking purposes should be used for ice.

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[1] Science, September 9, 1892.

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HYDROCHLORIC ACID IN THE STOMACH.

According to Ewald,[1] a deficiency of hydrochloric acid in the stomach has, in recent years, been considered as indicating disturbed function and is not diagnostic of any definite organic lesion. During the first stage of digestion the acid present in the stomach is used up in neutralizing the different bases contained in the food. Later, the free hydrochloric acid increases in amount until it reaches from one and a half to two and a half parts in the thousand of gastric contents. The absence of free hydrochloric acid does not necessarily mean that the secreting power of the stomach is entirely lost. A certain amount of digestion can take place by the help of unstable compounds of the acid which are present in partially digested food. In three conditions free hydrochloric acid is absent: gastric carcinoma; chronic catarrh leading to atrophy of the mucous membrane; and severe nervous depression. Atrophy of the gastric mucous membrane is most common in old persons who have suffered from dyspepsia. The contents of the stomach contain no free hydrochloric acid, no pepsin, and no rennet ferment. Cancer may exist for a long time without being suspected, the symptoms pointing to a severe neurosis. To improve the muscular tone of the stomach, strychnine, belladonna and physostigmine may be used. Good results may be obtained from exercise and massage, and from internal faradization. To prevent fermentative changes, the contents of the digestive tract should be made as far as possible unsuitable for the growth of micro-organisms. Resorcin, naphthalin, salicylate of bismuth and benzo-naphthol are recommended. The author especially recommends the latter in doses of from two to five grains a day. It is tasteless and non-irritant, and remains unacted upon in the stomach, but is split up in the intestine into naphthol and benzoic acid.

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[1] Berlin klin. Woch., No. 26.

METEOROLOGICAL RECORD,

For the week ending September 10, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 4	30.18	61	66	56	73	87	80	S.	E.	3	8	O.	O.	
M.. 5	29.94	68	79	58	92	72	82	N.	S.W.	12	14	R.	C.	.06
T.. 6	30.00	66	72	60	77	58	68	W.	W.	11	14	O.	C.	.02
W. 7	30.25	60	70	50	68	64	66	W.	S W.	10	8	C.	C.	
T.. 8	30.43	58	63	52	69	84	76	N.	S.E.	12	8	C.	C.	
F.. 9	30.39	59	68	50	74	74	74	W.	S.E.	4	7	C.	C.	
S..10	30.40	58	65	51	94	81	88	N.W.	E.	2	8	G.	C.	
☞	30.23	61	69	54	76	77	76			8	10			.011

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 10, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	731	312	22.82	12.60	12.88	3.22	1.54
Chicago . . .	1,250,000	505	278	17.29	7.22	2.47	5.32	6.27
Philadelphia .	1,092,168	454	200	23.54	12.32	12.76	5.72	3.08
Brooklyn . .	955,333	402	262	29.00	10.75	18.50	2.75	2.00
St. Louis . . .	477,873	193	69	19.44	10.26	12.96	2.70	3.24
Boston . . .	469,645	194	80	18.36	8.16	13.26	3.06	1.02
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	90	34	16.66	10.00	8.88	4.44	2.22
Cleveland . .	281,353	105	55	35.15	9.50	24.70	2.85	6.65
Pittsburg . .	255,000	90	46	37.77	7.77	21.09	7.77	5.55
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	117	46	19.55	6.80	9.35	1.70	6.80
Nashville . .	87,754	43	19	20.97	11.65	6.99	—	4.66
Charleston . .	56,048	26	10	19.25	15.40	15.40	—	—
Portland . . .	40,000	15	4	26.66	6.66	13.33	6.66	—
Worcester . .	92,313	27	16	44.44	—	44.44	—	—
Lowell . . .	82,455	39	25	38.40	7.68	35.84	—	2.56
Fall River . .	82,128	—	—	—	—	—	—	—
Cambridge . .	74,644	17	6	29.40	23.52	29.40	—	—
Lynn	60,809	18	8	22.22	22.22	22.22	—	—
Springfield . .	47,052	25	8	40.00	8.00	16.00	—	16.00
Lawrence . .	45,910	16	10	31.25	6.25	25.00	—	—
New Bedford .	44,947	20	9	30.00	15.00	20.00	—	10.00
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	9	5	—	—	—	—	—
Salem	31,495	14	5	42.84	—	42.84	—	—
Haverhill . .	30,065	11	4	9.09	—	9.09	—	—
Chelsea . . .	29,479	10	3	10.00	10.00	10.00	—	—
Malden . . .	27,252	9	4	22.22	—	22.22	—	—
Newton . . .	26,498	9	6	33.33	22.22	11.11	11.11	—
Taunton . . .	26,464	7	3	28.56	—	28.56	—	—
Gloucester . .	26,608	5	2	—	20.00	—	—	—
Fitchburg . .	25,444	7	0	14.28	—	14.28	—	—
Waltham . .	20,942	4	2	50.00	—	50.00	—	—
Quincy . . .	18,669	11	4	27.27	18.18	9.09	—	18.18
Pittsfield . .	18,294	5	0	20.00	—	—	—	20.00
Northampton .	15,684	2	0	—	—	—	—	—
Everett . . .	14,745	1	0	—	—	—	—	—
Newburyport .	14,031	—	—	—	—	—	—	—
Amesbury . .	13,561	4	1	50.00	25.00	25.00	25.00	—

Deaths reported 3,252: under five years of age 1,480; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 763, consumption 331, acute lung diseases 230, diarrhœal diseases 437, diphtheria and croup 118, typhoid fever 108, whooping-cough 33, malarial fever 19, measles 14, scarlet fever 13, cerebro-spinal meningitis 13, erysipelas 7, small-pox 1.

From whooping-cough New York 10, Brooklyn 7, Chicago 5, Philadelphia and Pittsburgh 3 each, St. Louis, Boston, Cincinnati, Cleveland and Portland 1 each. From malarial fever Brooklyn 9, New York 5, Nashville 4, Charleston 1. From measles New York 12, Chicago and Brooklyn 1 each. From scarlet fever Chicago 4, New York and Brooklyn 3 each, Philadelphia, Boston and Lawrence 1 each. From cerebro-spinal meningitis Chicago 5, New York 3, Brooklyn and Washington 2 each, Newton 1. From erysipelas New York 4, Chicago 2, Philadelphia 1. From small-pox Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending September 3d, the death-rate was 19.8. Deaths reported 3,878: acute diseases of the respiratory organs (London) 114, diarrhœa 728, measles 72, scarlet fever 62, diphtheria 54, whooping-cough 44, fever 23, small-pox (Halifax) 1.

The death-rates ranged from 11.8 in Halifax to 37.8 in Preston; Birmingham 22.0, Bradford 14.5, Hull 21.4, Leeds 26.1, Leicester 20.8, Liverpool 24.7, London 16.6, Manchester 23.8, Newcastle-on-Tyne 20.9, Nottingham 13.6, Oldham 22.9, Sheffield 28.6, Sunderland 18.1, West Ham 20.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 10, 1892, TO SEPTEMBER 16, 1892.

By direction of the acting Secretary of War, a board of medical officers to consist of LIEUT.-COL. CHARLES H. ALDEN, deputy surgeon-general; LIEUT.-COL. GEO. M. STERNBERG, deputy surgeon-general; LIEUT.-COL. WM. H. FORWOOD, deputy surgeon-general; CAPTAIN WM. F. CARTER, assistant surgeon, is constituted to meet in New York City, on October 3, 1892, for the examination of candidates for admission into the Medical Corps of the Army, and for such other business as the Surgeon-general may desire to bring before it. By Par. 9, S. O. 213, Hdqrs. of the Army, A. G. O., September 9, 1892.

Under telegraphic instructions of this date from the War Department, MAJOR HENRY M. CRONKHITE, surgeon (Fort Trumbull, Conn.), will proceed without delay to Sandy Hook. N. J., and take station at that place for duty with the Government employees thereat. This detail will continue during the encampment of civilians landed at Sandy Hook from infected vessels at quarantine in New York Harbor. S. O. 123, Hdqrs. Dept. of East, Governors' Island, New York City. September 9, 1892.

FIRST-LIEUT. ASHTON B. HEYL, assistant surgeon, U. S. A., granted leave of absence for fifteen days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 17, 1892.

C. T. HIBBELT, passed assistant surgeon, detached from Receiving-ship "Franklin" and wait orders.

APPOINTMENTS.

The Trustees of the Massachusetts Hospital for Dipsomaniacs and Inebriates have appointed WILLIAM NOYES, M.D., now assistant physician at McLean Asylum, as assistant physician, to commence with the opening of the hospital.

The following appointments were made on the Carney Hospital staffs, at a meeting held September 8, 1892: visiting physician, DR. W. F. TEMPLE; pathologist, DR. FREDERIC COGGESHALL; physician to out-patients, DR. W. E. FAY.

BOOKS AND PAMPHLETS RECEIVED.

Habitual Abortion. By E. S. McKee, M.D , Cincinnati, O. Reprint. 1892.

Red Hot Democratic Campaign Songs for 1892. Chicago: The S. Brainard's Sons Co.

Wintering in Egypt. By Frederick Peterson, M.D., New York. Reprint. 1892.

True Blue Republican Campaign Songs for 1892. Chicago: The S. Brainard's Sons Co.

Retroanterograde Amnesia, with Report of Two Cases. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1892.

Dos Nuevos Clamps para las Operaciones del Abdomen. Por el Dr. R. Martin Gil, Médico-Director del Hospital Noble de Màlaga. Barcelona. 1892.

A Hand-book of Hygiene and Sanitary Science. By George Wilson, M.A., M.D., F.R.S., Edin. Seventh edition. Philadelphia: P. Blakiston, Son & Co. 1892.

A Manual of the Operations of Surgery. By Joseph Bell, M.D., F.R.C.S., Edin., consulting surgeon to the Royal Infirmary, etc. Seventh edition. Edinburgh: Oliver & Boyd. 1892.

An American Text-book of Surgery. By several authors. Edited by William W. Keen, M.D., L.L.D., and J. William White, M.D., Ph.D Philadelphia: W. B. Saunders. 1892.

The Student's Hand-book of Surgical Operations. By Frederick Treves, F.R.C.S , Surgeon and Lecturer on Anatomy at the London Hospital. Philadelphia: Lea Brothers & Co. 1892.

The Essentials of Histology. By Edward A. Schäfer, F.R.S., Jodrell Professor of Physiology in University College, London. New (third) edition. Philadelphia: Lea Brothers & Co. 1892.

Memoirs of the Boston Society of Natural History. Vol. iv, No. x. Fusion of Hands. By Thomas Dwight, M.D , LL D., Parkman Professor of Anatomy at Harvard University. Boston. August, 1892.

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Original Articles.

A PECULIAR FORM OF NYSTAGMUS (CHEYNE-STOKES NYSTAGMUS) WITH A CASE.[1]

BY W. N. BULLARD, M.D., AND A. H. WENTWORTH, M.D.

The peculiarity of the form of nystagmus which we are about to describe consists essentially in the rhythm, which is precisely similar to that seen in Cheyne-Stokes respiration. After a somewhat exhaustive examination of the literature of the subject, we have been unable to find any similar case.

The present case is as follows:

Jacob R., two years of age, entered the Carney Hospital October 1, 1891, in the service of Dr. Bowditch, with whooping cough; no history could be obtained, as the mother was ill, and the father insane. After several weeks' illness, he had practically recovered, but was retained in the hospital as a convalescent. At this time, there was no evidence of tuberculosis of the lungs. On November 11th, by a change of service, he came under the care of Dr. Bullard, and then the following examination was made: patient markedly rachitic; head round, not much enlarged, and otherwise not remarkable. Face small, features drawn. Body and limbs much emaciated in contrast with abdomen, which is very prominent, with enlarged superficial veins. Eyes and tongue negative. Enlarged glands in neck and groins. Superficial erosions over upper lip and on nose. Two small superficial abcesses, one on abdomen, and the other on the thorax. Ribs plainly visible with no marked "rosary." Epiphyses of wrists enlarged. Nothing abnormal detected in lungs, except that their respiration was slightly roughened at left apex; no evidence of enlargement of abdominal organs. The record of November 30th stated that the child had been doing well, but continued thin and anæmic. The bowels were regular, and the appetite was good. He was about the ward at this time, and was considered comparatively well. On December 10th, the child had a convulsion, which lasted but a few minutes, and was not observed by any of the house officers. The records for December 16th said that he had been in bed for a day or two, was very irritable when approached, but otherwise lay quietly with no special symptoms. He took food only after considerable urging. The face was drawn and haggard. The pupils were equal and reacted to light. On December 19th, the child's condition was much the same, but with gradually increasing stupor. The face was more drawn, and the emaciation was more marked. The temperature at no time showed an elevation above 100 F. The pulse was rapid and feeble, beating at the rate of 150 a minute. The bowels were constipated. December 19th and 20th slight twitchings of various muscles of the face and forearm were noticed. On December 21st, the patient developed a horizontal nystagmus, which had a Cheyne-Stokes rhythm. The pupils were equal and reacted to light. On the next day the stupor which had developed gradually increased, and the patient died comatose on December 23d. An autopsy could not be obtained. The nystagmus was horizontal and began with rapid movements: the oscillations becoming progressively longer and more extended up to a certain point, and then diminishing in the same manner; a pause then ensued, which was followed by a repetition of the previous rhythmical movements. This condition was observed carefully for a few moments, and then the movements ceased, but were reported to have recurred more or less constantly throughout the whole day. There were no marked pupillary symptoms, and no Cheyne-Stokes respiration.[2]

CHEYNE-STOKES RESPIRATION.

The various theories of the mechanism of Cheyne-Stokes respiration may be roughly divided into three classes: those in which it is considered to be primarily and principally due to the action of vitiated or carbonized blood on the centres of respiration in the medulla; those in which the action of the vaso-motor centres in the medulla is supposed to be a predominant or important factor; and those in which the phenomenon is thought to be caused by some special condition of these respiratory centres, either physiological or at least inherent.

For a full account of these we would refer to the series of articles on this subject by Gibson in the *Edinburgh Medical Journal*.

The third class is the only one which has an active interest for us at the present time.

In 1879 Luciani first advanced the view that the phenomena of Cheyne-Stokes respiration are really due to certain intrinsic properties of the respiratory centre, which, when acted upon in certain definite ways by external agents (whether directly or indirectly) express themselves in these manifestations. He believed that these expressions correspond "to the oscillations of the nutritive changes" which occur in the respiratory centre. Rosenbach bases a somewhat similar theory on what may be termed the periodicity of nature, the alternation of action and repose, and hence would refer the phenomenon in question to the natural periodicity of the centre when its irritability is lowered. "Through certain disturbances of nutrition the brain suffers from lessened flow of blood or altered quality of blood, and the processes of tissue-change are modified in the entire central organ or in particular parts of it, especially in the medulla oblongata, and here again, more particularly in the respiratory centre, so that the normal irritability of the parts is lowered more or less, and the normal periodic exhaustibility is increased even to complete paralysis." Solokow and Luchsinger refer the phenomenon (existence of periodic respiration) to the lessened elasticity and increased exhaustibility of the respiratory centre. Mosso declares that the circulatory vessels take no part in the phenomena of periodic breathing. Periodical breathing is physiological and occurs in deep sleep. Wellenbergh, 1885, regards excess of intracranial fluid causing pressure as the principal, if not the only cause, of Cheyne-Stokes respiration. Marckwald "is of opinion that periodic breathing only takes place when at least a part of the higher brain tracts has ceased to act and has lost its influence upon the respiratory centre."

NYSTAGMUS.

In order that nystagmus should occur, a weakening of the will over the reflex motor centres of the eyes is essential. For this reason, one often sees nystagmus occurring in earliest infancy, at a time when the strength of the will is but slightly developed, and when, in addition, the dimness of vision offers an impediment to the normal development of the will power over movements of the eye.

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[1] Read before the Boston Society for Medical Improvement, May 9, 1892.

[2] Since reading this paper, I have obtained further information in regard to the parents of this child. They are Russian Jews, and both appear to be of a highly emotional, hysterical nature; the father at times, at least, is insane. My thanks are due to Drs. A. H. Nichols and S. Goodman of Boston for these facts. — W. N. B.

If, by greatly diminished vision, the influence of the will remains relatively slight, then the nystagmus continues, and only diminishes, or ceases, when the patient, by movements of the head and eyes, secures a position in which the vision is keenest and where less will power is required to perceive.

Thus "infantile nystagmus" is dependent upon visual defects, either in the eye, or the various nerve tracts, whose co-ordination is necessary to the act of seeing, at the same time that the voluntary movements of the eyes are relatively normal. Another form of nystagmus is that in which the influence of the will upon the movements of the eye is reduced to a minimum, or even absent. This form is commonly observed in cases of cerebral depression or irritation. The occurrence of nystagmus in cerebral affections is dependent in part upon direct irritation and affection of those parts of the brain which stand in relationship to the ganglia centre for the eye; and also in part to a weakening of the regulating influence exercised by the motor region of the cortex through the medium of the centrifugal fibres going to the ganglia centres for the eye.

In general, the conditions for the production of nystagmus may be said to exist when the regulating influence of the will is too weak to counteract the activity of the reflex centres. The reflex mechanism seems to be so delicately adjusted, and one part to be so dependent upon another, that any interference with any portion of it is capable of producing nystagmus, deviation of the eyes, motor disturbances, etc.

THEORY. BY DR. BULLARD.

In order to explain the occurrence of a Cheyne-Stokes nystagmus, we must take into consideration the various views held in regard to the causation of ordinary nystagmus and to the production of Cheyne-Stokes respiration. It seems probable that the peculiar rhythm in the Cheyne-Stokes nystagmus is produced by a similar or analogous cause to that which produces the Cheyne-Stokes respiration. Ordinary nystagmus, in such cases as ours, is caused by a constant or chronic irritation of certain portions of the central nervous system — exactly what portions we do not yet know. In addition to this it is possible that there may exist some obstruction or obstacle to the passage of the motor impulses, either from the brain centre to the basal ganglia, or in the latter, or between them and the ocular muscles. It is conceivable that such obstruction might be due to pressure or injury produced either directly or indirectly by the increased intracranial fluid. For the production of this peculiar nystagmus, some other factor must be needed and this, it is fair to assume, must be similar or analogous to the one which produces the same results in Cheyne-Stokes respiration. The view, which seems to us the most probable, taking into consideration all the latest investigations, is, that this rhythm is due to an increased irritability of the nerve centres themselves, due to weakness which may be caused either by long-continued over-fatigue, or improper nutrition or intoxication, or in other ways, but must be more or less long-continued. In the production of Cheyne-Stokes respiration, we must have two factors acting at the same time, one stimulant, the other inhibitory. These factors are not simply the complements of each other, but so differ in character that the one does not neutralize the other, but they may both act simultaneously. If the stimulant factor were simply to neutralize and finally to overcome the other inhibitory, we should simply have ordinary respiration, only more or less delayed (or obstructed) as in morphine poisoning. In Cheyne-Stokes respiration, we have not only a diminution of the result of ordinary stimulation, but a new and entirely undeducible phenomenon produced. We should therefore be inclined to explain Cheyne-Stokes respiration something as follows, In this form of respiration, the respiratory centre becomes for some reason less than normally responsive to the ordinary accustomed stimuli; it therefore fails to act until these stimuli become unusually increased, or until other unusual stimuli are found. Instead of acting as a simple, benumbed, irresponsive centre should do, that is, responding in the normal way only less strongly or less rapidly, the respiratory centre responds in an entirely unusual (and logically unexpected) way. This can scarcely be due to any difficulty in the transmission of motor impulses outside the cranium, as we have no evidence of any apparent destruction, pressure, or injury to any of the motor nerves, and Bowditch has rendered it probable that nerve-fatigue, as such, does not exist. The cause must then lie in either the condition of the respiratory centre or of its intracranial communications with the motor nerves. It is not possible at present to say that it is not due to interference with these communications, either through the increased pressure of intracranial fluid or otherwise; neither have we evidence that any such communications are affected. What seems, however, most probable is, that in the first place, the influence of the higher centres is removed or lessened, so that no external regulator can be applied; second, that the normal periodic tendency of the centre has been destroyed, and an unusual irritability of its cells exists, due to its neurasthenic condition — the chronic weakness, intoxication, or starvation of these cells. If now we apply these latter considerations to Cheyne-Stokes nystagmus, we find ourselves led to the following conclusions: An ordinary horizontal nystagmus is a common symptom in tubercular meningitis and hydrocephalus, something more than the mere presence of these conditions must be necessary to produce a Cheyne-Stokes nystagmus. The further factors necessary for this must be such, if our theory is correct, as to cause an unusual and extraordinary irritability in the motor centres, cortical or basal, together with a strong inhibitory influence, active or passive, that is, due to a state of inertia or weakness in the cells, or to an obstacle or impediment to their activity or to the transmissions of its results. In ordinary nystagmus, we suppose ourselves to see the results of a continued irritation of certain centres. In Cheyne-Stokes nystagmus, we must suppose either that this same irritation continues, but that some obstruction or hindrance in cell activity or in the transmission of its results occurs, or else that the irritation is increased to such a degree as to so over-fatigue the cells that the same result is produced. We should therefore sum up our theory of Cheyne-Stokes nystagmus as follows:

(1) This nystagmus is analogous to that form of

respiration known as Cheyne-Stokes, and is probably produced by analogous causes.

(2) The most probable theory in regard to its production is that it is the result of a constant or chronic irritation of the motor ocular centres, occurring at a time when these centres are depressed and so weakened as to be irritable in their response.

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STRONG HYDROGEN PEROXIDE SOLUTIONS, LOCALLY, IN DIPHTHERIA.[1]

BY FRANCIS H. WILLIAMS, M.D.

Diphtheria in its beginning is now generally regarded as a local disease. It is said that the membrane is found most frequently on the tonsils and less frequently on the posterior wall of the pharynx. From these parts the disease may extend upwards or downwards.

In some cases, the membrane spreads with great rapidity, and, in order to prevent the multiplication of the bacilli locally, and thus avoid the absorption of their toxic products, which alone invade the general system to any extent, it is important to lose no time in applying treatment in the early stages of the disease. It is not a question of days but of hours, and, where the local manifestations are accessible, the means used should be able to destroy the bacilli after a contact of a few seconds. According to Welch and Abbott of Baltimore,[2] the bacilli are not found in the mucous membrane, but chiefly in the deeper layers of the diphtheritic membrane. To reach them, it is obviously necessary to do something more than apply a germicide to the diphtheritic deposit. It must be applied in and underneath the fibrinous membrane, which must be broken up and disintegrated in order that the germicide may reach all parts of it. There are many agents that will kill the bacilli after reaching them, but few that can render the more exceptional service of breaking up and penetrating the diphtheritic deposit. In the laboratory, corrosive sublimate, acids, chlorine-water and other substances, will quickly kill the bacilli; they do not, however, disintegrate the membrane, but roll off its surface like water from a duck's back. Further, some antiseptics are poisonous, and, when applied in spray or in gargle, more reaches the friend than the enemy.

Peroxide of hydrogen is a remedy which is not poisonous, and has been much used in diphtheria. It has usually been employed in a 15-volume solution diluted with water, and, in many cases, dilution with several parts of water is directed. The full 15-volume solution, however, is not sufficient to kill the bacilli promptly, and I shall show later that, instead of diluting the 15-volume solution, it is necessary to use one that is much stronger if it is to act as a germicide and not merely as a cleansing agent. The chemical formula of peroxide of hydrogen is $H_2 O_2$; when decomposed, it splits up into O and H_2O, and its use in medicine depends upon the fact that this decomposition is easily brought about. We have thus at our command a very convenient and harmless way of employing nascent oxygen. I need not enlarge upon the obvious advantages of such a substance. It is an oxidizing agent of the best possible nature, as it treats living tissue kindly, while at the same time, its animosity, if I may use the term, is such against various forms of decayed organic matter and dead tissue that its oxygen is liberated and the dead mass attacked by the full fury of nascent oxygen.

At the beginning of my last service at the Boston City Hospital, I asked myself whether this valuable agent, peroxide of hydrogen, could not be used in sufficient concentration, (1) To kill the bacilli within a few seconds; (2) To do this without harm to the patient. These conditions fulfilled it would be necessary only, (3) To find the means of bringing the peroxide to the vital point; and (4) To preserve the solution.

In carrying on this investigation, I have had the interest and valuable assistance of Dr. H. P. Talbot of the Massachusetts Institute of Technology who made and tested the strong solutions for me, and devoted much careful study to their analysis.

The commercial solution of peroxide of hydrogen, of about 20 volumes strength, and acid reaction was concentrated by distillation over a water-bath in a partial vacuum. During the distillation the decomposition is apparently very small, at least, until the solution has reached a strength of from 250 to 300 volumes. The concentration may be continued to a strength at which the solution will evolve with permanganate of potassium 500 times its volume of oxygen. At this point, the solution begins to decompose rapidly.

The strength of the peroxide of hydrogen solution is not estimated in the same way in all countries. In America, for instance, a 15-volume solution is one that when mixed with permanganate of potassium, under suitable conditions, will evolve fifteen times its own volume of oxygen. One-half of this oxygen comes from the peroxide and the other half from the permanganate. In some other countries, in estimating the strength of the solution, the amount of oxygen evolved from the peroxide of hydrogen only is considered. In this paper the American way is used. Six and one-third volumes represent 1 per cent. of peroxide of hydrogen. A 20-volume solution, for example, would, therefore, contain three per cent. of peroxide of hydrogen. It would avoid confusion and simplify the matter to give up the method of designating the strength of peroxide of hydrogen by volume and speak only of the *percentage* of peroxide of hydrogen in the solution.

On the bacteriological side, Mr. G. V. McLauthlin, of the same institution, has most kindly made a series of tests, with control experiments, on the action of various substances upon the bacillus of diphtheria. I quote the following from his account of the process:

"In any of the ordinary methods for determination of the germicidal action of any liquid disinfectant upon a given bacterial species, three distinct and successive processes may usually be recognized. These are: first, the mingling for a known period of a pure culture of the given species with a suitable amount of the germicide; second, the dilution, after the desired interval has elapsed, of this mixture to the extent necessary not only to check further bactericidal action but also to avoid the possibility of any future inhibitory effect; and third, the planting of a portion of this dilution in a suitable culture medium, in order to permit the growth and consequent recognition of any bacteria which may have survived the action of the germicide.

"As a source of the diphtheria bacillus we used a pure culture that came originally from the laboratory of Dr. Welch of Johns Hopkins University. From this, plantings were made in bouillon, and to insure greater accuracy, in most of the experiments old and fresh bouillon cultures were used side by side, or a mixture of the two was employed. All tests given in the tables were made in duplicate.

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[1] Read at a meeting of the Boston Society for Medical Improvement, April 11, 1892.

[2] Etiology of Diphtheria, by Professor W. H. Welch and A. C. Abbott, M.D., Bulletin of the Johns Hopkins Hospital, Vol. 11, No. 11, 1891.

"The following record of a single action experiment with its control will serve to illustrate this method: 5 c.c. of acid 50-volume (8%) peroxide solution were placed in a 60 c.c. Erlenmeyer flask and 0.25 c.c. added of a bouillon culture of the diphtheria bacillus. Ten seconds after, in order to stop the action of the peroxide, the mixture was quickly poured into a litre flask containing 600 c.c. of slightly alkaline normal salt solution. Thirty seconds after this, the whole having been well shaken, 0.2 c.c. were transferred to 75 c.c. of alkaline normal salt solution in another flask. At the end of three minutes, 1 c.c. of the last dilution was planted in 6 c.c. of bouillon. At the end of four and a half minutes 1 c.c. of the dilution was added to 6 c.c. of melted glycerine agar at 40° C., and the mixture at once poured into a Petri dish.

"In the control experiment, 0.25 c.c. of the bouillon culture of the bacillus were mixed with 600 c.c. of alkaline normal salt solution, *then* 5 c.c. of acid 50-volume (8%) peroxide added, and all well shaken. Thirty seconds after the addition of the peroxide, 0.2 c.c. of the mixture were transferred to 75 c.c. of alkaline normal salt solution in another flask. After four and a half minutes, a glycerine agar plate was made as before.

"After a few days' growth in the incubator, the agar plate, from the control experiment, showed 158 colonies of the diphtheria bacillus. At the same time, neither the agar plate, nor the bouillon tube, prepared from the action experiment, showed any growth.

"Evidently the agar plate is of especial advantage when a part only of the bacteria are killed, that is, when the germicide is diluted just beyond its effective limit. The bouillon tube gives no precise means of distinguishing between the survival of a part and the survival of the whole of the bacteria."

I found that a 50-volume (8%) acid solution of peroxide of hydrogen was a more efficient germicide than a 50-volume (8%) solution of peroxide alone. In other words, the value of the peroxide solutions was much increased by the presence of a small amount of acid, and for this reason acid solutions of peroxide should be employed. Alkaline solutions do not keep as well and are less effective as germicides.

In Table 1, No. 1, will be found an analysis of the peroxide solution which I have used.

It is evident from this table that the acids are important factors in the germicidal action of the peroxide solutions, but, besides its germicidal property, it will be seen later that the peroxide has the necessary and unique quality of rendering the bacillus accessible.

In regard to my first and second points, I found that in the laboratory all the bacilli were killed after ten seconds contact with a 50-volume (8%) acid solution of peroxide of hydrogen, and that this solution did no harm to the tissues, and as a rule, caused little inconvenience to the patient. Solutions containing 100 volumes (16%) caused smarting, which continued from one to two minutes, but even stronger solutions could be employed without injury to the tissues; in fact, the mucous membrane seems to bear the solution much better than the skin, probably because it is so quickly diluted on the former. The amount of pain or discomfort which these solutions cause, seems to depend less upon their strength than upon the local conditions and upon the individual. Even stronger solutions than the 100 volume (16%) may be used, but they cause more pain, and are only necessary in cases where the membrane is very tough and thick. The strength of the solutions to be used must depend, therefore, upon what we wish to accomplish. To cleanse the throat merely, and as a gargle, a solution of about 15 volumes (2.4%) will answer, but, where the membrane is thick and tough, it is necessary to use a solution of from 50 to 200 volumes (8 to 32%) in order to have it efficient. As soon as the peroxide touched the dead tissues it begins to decompose into oxygen and water. During this action the membrane is attacked and disintegrated, and the way is thus opened for the germicidal action of the peroxide and the substances associated with it. But in this very decomposition the strength of the solution is reduced, and therefore to compensate for this loss we must use a stronger solution than would be necessary in the laboratory.

TABLE I.

EXPERIMENTS ON THE ACTION OF PEROXIDE OF HYDROGEN AND CERTAIN ACIDS UPON THE DIPHTHERIA BACILLUS.*
ACTION PERIOD, TEN SECONDS.

GERMICIDE.	Strength necessary for complete disinfection in 10 seconds when .5 c. c. of bouillon culture are added to 10 c. c. of the germicide.
1. Hydrogen peroxide sol., containing about .25% $H^2 SiF_6$ .75% $H^2 S O_4$, and traces of HCl., etc., in each c. c. of 100 vol. (16%) peroxide.	Between 25 and 50 vols. (4 and 8%).
2. Hydrogen peroxide slightly acid, but nearly neutral.	Between 100 and 150 vols. (16 and 24%).†
3. Sulphuric acid.	½ to 1%.
4. Hydrofluosilicic acid.	½ to 1%.
5. Hydrochloric acid.	½ to 1%.

* In testing the germicidal power of the peroxide of hydrogen solutions, a quantitative as well as a qualitative analysis should always be made, as the solutions in the market vary widely in the kind and amount of acid they contain.

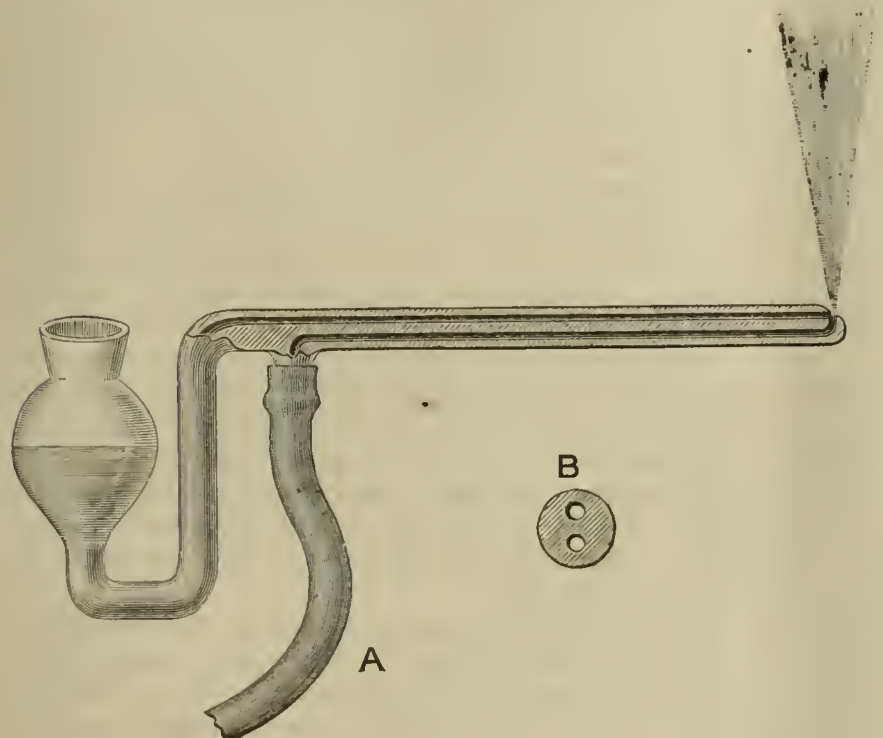
† These neutral peroxide solutions were not used upon the patient, but were prepared only to ascertain what germicidal value neutral peroxide solutions might have.

Third, let us now consider the means used to make the applications. They are chiefly a special atomizer and a special syringe. In order to reach all parts of the throat it has been necessary to change the tips of the atomizers so as to throw the spray in these different directions — straight, up, down, right and left. This is inconvenient to both physician and patient, and to simplify the matter I have designed a glass atomizer, a drawing of which is here given.

By means of this atomizer the spray may be sent in three directions, up and right and left, in the throat without taking it out of the mouth, but merely by turning it in the hand.

The special syringe, a drawing of which is here given, is of my own make, and although of glass it has not yet been broken. The form is such that it can reach any part of the throat within sight. The syringe is first filled with a strong solution of peroxide. It is held in one hand, the thumb being placed in the ring, A, while the first and second fingers grasp the body of the syringe at B, between the two corks. The mouth of the patient is opened, the tongue depressed with a spoon or depressor, the point of the syringe pushed through the membrane and a few drops of the solution pressed out. Immediately there appears a frothy swelling and the patient expectorates a white froth. The membrane then in some cases looks swollen, white and thickened, and it is not until about an hour later that the most marked improvement is apparent. The amount of discomfort caused depends to a certain extent on the part to which the application is made. Touching the back of the pharynx always causes gagging, while, on the contrary, the tonsils are sometimes very tolerant, and the point of the syringe may be thurst into the boggy swollen tissue for a large fraction of an inch, $\frac{1}{4}$ to $\frac{1}{2}$.

As regards the frequency of the application of the germicide I can give no rule that applies to all cases. The problem is to treat early, to disintegrate and clear off the membrane by means of the spray and syringe. In the syringe a 100 (16%) or, more often, a 200 volume (32%) solution should be used, applications being made, of a few drops each, into and underneath the membrane wherever needed. This should be done daily from one to three times or more often for the first day or two, after which the spray alone may suffice. The spray should also be used in 50 (8%) or 100 volume (16%) strength, once in four hours, although it may be desirable to use it oftener in some cases. Where the membrane yields readily to the spray this may be used at first to clean away as much as possible of it, and the remainder may be cleared by the syringe. The treatment to be effective must be energetic and well carried out in the early days. Besides treating the membrane locally, it is well to use antiseptic prophylactic treatment in the pharyngeal and nasal regions, such as douches or sprays of 15-volume (2.4%) peroxide solution or diluted chlorine-water.



A is rubber tubing to hand bulb. The cut is one-half size, except the section of the tube at B, which is full size. The bulb in the drawing should have more the shape of a top, and when of such shape it can be placed on its side without losing any of its contents if it is not more than half full. [Made by P. J. McElroy, East Cambridge, Mass., U. S. A., who manufactures various forms of glass atomizers out of this double-bored glass tubing of his invention.]

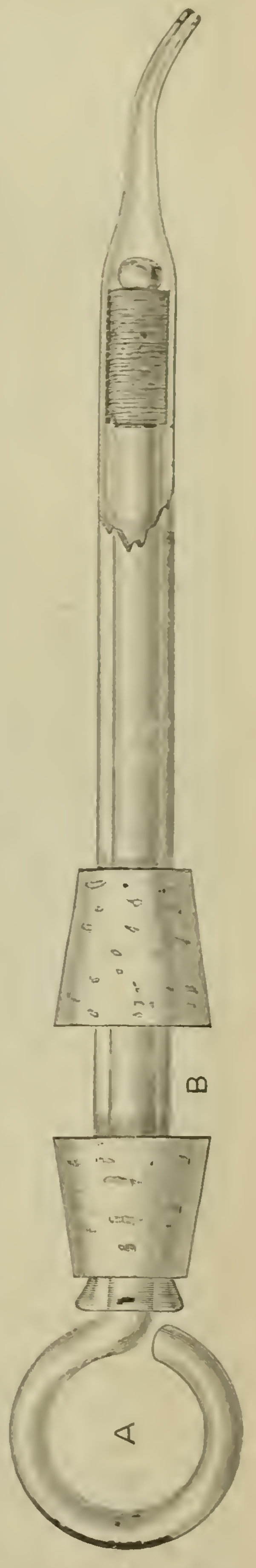
In applying this treatment it is important to have a good light; a kerosene lamp with a parabolic reflector like a locomotive head-light is good, but by day I prefer to place the patient's head in such a position that when the mouth is opened the back of the throat has direct daylight upon it.

Fourthly, from the literature of the subject, I feared that the peroxide solutions would prove very unstable. The tests made by Dr. Talbot show that 44.6-volume (7%) solutions keep six weeks in a temperature of from 70° to 80° Fahr. without suffering serious loss. In a cool, dark place or a refrigerator they keep much better. The 100-volume (16%) solutions will keep for a few days in a temperature of from 70° to 80° Fahr., and in a refrigerator 24 dayswith a loss of only 6 volumes. The 200-volume (32%) solutions are less stable, they will keep for six days in a refrigerator with a loss of only 8 volumes.

The result of some of the tests made with the peroxide of hydrogen solutions is given in Table II, page 306.

Fresh chlorine-water has also been tested and found to deteriorate much more rapidly than the peroxide solutions which were used.

A few drachms only of the strong solutions, are required for a patient, as the treatment has to be continued for but a few days as a rule. The strong solutions should not be allowed to come in contact with the skin, as they are irritating, nor with colored fabrics or the hair, as peroxide is a bleaching agent.



The syringe is one inch longer than the drawing, otherwise this is the full size. The walls of the syringe beyond the piston are thick, and the tip is smooth, having been rounded in a flame. The packing is asbestos. The cost is about twenty-five cents. [Manufactured by P. J. McElroy.]

The following cases illustrate the use of the peroxide. In the first case, the patient, an adult, had a chill. The next evening, when first seen, there was only a very small patch on one tonsil, too little in the opinion of the physician who saw her on which to base a diagnosis. Within a few hours this increased rapidly, and when I first saw the patient membranes were to be seen covering both tonsils, the posterior pillars, the posterior side of the uvula, and there were some spots on the pharyngeal wall, all tenacious, and not to be removed by the forceps. I made local applications of the strong peroxide with the spray and syringe; the membranes did not spread. The treatment was continued locally for five days, and the patient made a quick recovery, was able to be out of bed within a week, and there were no after-effects. As in this case, there had been exposure to diphtheria, it would have been wise to use the peroxide from the moment suspicion was aroused.

TABLE II.

CHANGES IN PEROXIDE OF HYDROGEN SOLUTIONS OF DIFFERENT STRENGTHS WHEN KEPT IN THE LIGHT AT 70° TO 80° FAHR.

Original Strength.	Approximate Acidity.	Time of Standing.	Final Strength.	
			Volumes.	Percentages.
19.4 vols. 3.08%.	0.2%	3 days.	19.4	3.08
		7 "	19.2	3.05
		13 "	19.2	3.05
44.6 vols. 7.08%.	0.5%	3 days.	44.6	7.08
		7 "	43.5	6.90
		13 "	43	6.82
		43 "	40.4	6.41
100.3 vols. 15 92%.	1%	3 days.	100.3	15.92
		14 "	83	13.17
		21 "	76	12.06
202 vols. 32.06%.	2%	3 days.	188	29.84
		14 "	130	20.63
		21 "	105	16.66
51.5 vols. 8.17%.	Distinctly acid to litmus paper.	1 day.	51	8.09
		4 days.	51	8.09
		28 "	45	7.14
41 vols. 6 50%.	Less acid than the one above.	2 days.	41	6.50
		30 "	32	5.08
51 vols. 8.09%.	Acidity very slight, less than the one above.	1 day.	50	7.93
		31 days.	5.4	0.85
34.4 vols. 5.46%.	Slightly alkaline with caustic potash.	2 days.	9.1	1.44
		8 "	1.8	0.28
28.9 vols. 4.59%.	Slightly alkaline with ammonia.	2 days.	0.6	0.09
		8 "	0.0	0.00
CHANGES WHEN KEPT IN REFRIGERATOR.				
	Acidity.			
101 vols. 16.03%.	1%	3 days.	99.4	15.77
		6 "	98.6	15.65
		17 "	96.1	15.25
		24 "	95	15.08
202 vols. 32.06%.	2%	3 days.	201.6	32.00
		6 "	194.4	30.86
		17 "	181	28.73
		24 "	170	26.98
300 vols. 47.62%.	3%	9 days.	274	43.49
		12 "	271	43.01
		26 "	251	39.84
		33 "	240	38.09
390 vols. 61.90%.	4%	13 "	336	53.33
		19 "	332	52.69
		30 "	310	49.21
		37 "	290	46.03*

* Was one day at 70° to 80° Fahr.

The second case is especially instructive. In this, as it happened, both tonsils had been removed a few weeks before; their site was now covered with a membrane white on the edges, but dirty and necrotic in character over a considerable area. After the application of a 50-volume (8%) solution of peroxide every four hours for thirty hours, the membrane was reduced to a thin film. Then the treatment was not given for ten hours, and, at the end of this time, the membrane had re-covered the original area and spread on to the posterior pillars and behind, on the left side, tending to become septic in character. The peroxide was again applied every four hours, after which the membrane did not spread. On the seventh day thereafter the throat was practically clear, and on the eighth day the patient sat up.

The position of the membrane in the 32 medical cases that recovered was as follows:

Nine cases on the tonsils only; 23 cases on the tonsils and other parts. These cases all had the peroxide treatment. The patients made good recoveries, and there was a notable absence of after-effects. No case that came early to the hospital died.

In behalf of the early, local treatment of diphtheria, it should be stated that the membrane is generally accessible in the beginning.

Before I used the treatment described above I employed locally solutions of corrosive sublimate, which are poisonous and decomposed when brought into contact with albuminous matter; chlorine-water, which loses its strength rapidly, tincture of the chloride of iron, solutions of chlorinated soda, and various other substances. All such applications fail to break up and penetrate the membrane. The 15-volume solution of peroxide of hydrogen I also used formerly to a considerable extent; as a cleansing agent it is excellent, but it is far too weak to be an effective germicide against the bacillus of diphtheria. Among the local applications just mentioned, however, chlorinated soda and the 15-volume peroxide solution have seemed to me the best.

Any local treatment to be efficient must be applied early and at frequent intervals, but the strong peroxide solutions must only be applied by the physician himself. They cannot be properly used by the relatives or attendants. During the first few days, therefore, this takes more of the physician's time than other ways but the course of the disease is much shortened in suitable cases, that is, where the patient is seen early and the membrane is accessible. The point is to concentrate the attack before the patient is poisoned and thus save him from a prolonged illness. Good nursing and proper and sufficient nourishment are not to be omitted.

The proper local use of non-poisonous germicides can do no harm except in cases where the patient is too weak to have the applications made, at this stage they are obviously too late to render their best service.

The foregoing is a brief outline of two months crowded hospital service, on the medical side of the diphtheria ward, and is offered as a contribution towards the early, local treatment of diphtheria.

SUMMARY.

(1) The peroxide of hydrogen has the unique and necessary quality of disintegrating the membrane and thus rendering the bacillus accessible. As it only attacks dead organic matter the healthy tissues are not lacerated as is the case when mechanical means are used to remove the membrane.

(2) The acid peroxide of hydrogen solutions are an effective germicide against the bacillus of diphtheria and not toxic to the patient.

(3) The syringe is simple in construction and inexpensive, it can be kept perfectly clean and is not attacked by solutions which quickly corrode metals. With it one can easily reach all parts of the throat which are to be seen without a mirror.

(4) The length of time which the solution will keep is shown in Table II.

NOTE. — At present I have in view other harmless but efficient germicides, some of which may be used with peroxide of hydrogen.

NATIONAL HEALTH LEGISLATION AND QUARANTINE.[1]

BY H. P. WALCOTT, M.D.,
Chairman of the Massachusetts State Board of Health.

The little I intend to say upon this matter touches only a narrow portion of it, and that is the subject of quarantine, or that protection which our National or State authority is able to offer to a community in warding off the introduction of cholera; and in regard to the word quarantine, I desire to say in the beginning that my conception of it has but little reference to time. I think we have got fairly beyond absurdity. I think the wretched experience in New York should have weaned any scientifically-minded community from a question of quarantine that means simply a certain number of days of mere detention, criminal detention where it holds the well in contact with the sick.

I understand by quarantine a method of sanitary detention, that is, careful inspection of a ship that may be infected, the separation at once of the well from the sick, the immediate release of all if there has been no disease — the voyage across the Atlantic under ordinary conditions certainly is a quarantine as regards time where there has been no appearance of disease upon the voyage. Infected clothing or baggage to be disinfected at the port of entry and notice of the approach of persons, possibly infected, to be sent to the various points of destination.

With regard to the attempts of the United States Government to enforce a quarantine of any sort, that legislation began in the year 1799. The Congress of that date passed a statute, requiring United States officers to aid and assist local authorities in carrying out quarantine measures. The United States then carefully avoided the question of assuming the exercise of any right to maintain a quarantine of their own. That was the position of the Government down to the year 1878.

It then took more advanced position, and claimed the right to exercise more general powers. In the midst of the confusion of that legislation the National Board of Health came into existence, and the powers created by the act of 1878 were bestowed upon the National Board of Health. They were exercised by that Board for a limited period, by reason of the limitations in the statute, and expired in 1882. Since then the authority of the United States has been exercised, I presume, in accordance with the legislation of 1799, — that is, in aid of local authorities.

Now it would perhaps be well to inquire what the experience as to quarantine has been upon the other side of the water. The country that first suggests itself to us is England, the foremost country in the world in sanitary matters. During the life of the General Board of Health that passed out of existence somewhere in the late fifties, the quarantine question was mooted, and that Board recommended the final giving up of any quarantine system whatever that meant the detention of a ship not proved to be an infected ship. It was sanitary detention. The sick were to be separated from the well. Notice was to be sent to various localities to which individuals under suspicion might go, and that was the end of it; and under that system Great Britain has stood nearer to every cholera epidemic than any other country of the world for forty years, and has to show now an almost complete exemption from it. There is no panic, no excitement. Perhaps it would be interesting to note that the sanitary powers then conferred upon the General Board of Health are now vested in the Local Government Board, the head of which — in fact, it is a board that has nothing but a chairman, who exercises all the power — is a member of the Cabinet, and changes office whenever there is a change of ministry. Until lately Sir George Buchanan has been medical officer of health, and has been the chief sanitary authority in this question of quarantine or sanitary detention in Great Britain.

In France the power of sanitary regulation rests in the hand of a responsible minister, who can call to his aid one of the most considerable sanitary authorities in the world, — The Comité Consultatif d' Hygiène, — consisting of somewhat more than thirty of the most eminent sanitarians of the country. The advice of such a body necessarily carries a weight, far beyond that of the minister himself.

The German method places this power in the hands of a minister, who is at the same time the Minister of Education and Religion; as he has all the resources of the Gesundheitsamt at his disposal, such orders as he issues for the present at any rate, have probably the best bacteriological knowledge of the day to rest upon.

In this country we have at present a National Board of Health, which exists simply upon the statute-book. The act creating the National Board of Health has never been repealed. Its appropriations ceased eight or nine years ago, and it of course has practically passed out of existence. It still has a secretary, who occasionally maks a report to the effect that the board has no appropriations and has done no work. Another officer, however, owing to the enormous power of the Treasury Department, probably has become invested with about all the sanitary powers the Government sees fit to exercise, and that is the Supervising Surgeon-general of the Marine-Hospital Service of the Department of the Treasury. It was an office devised for the care of the sick sailors, and probably would never have aimed at anything more than that, had it not happened to be an office of the Treasury Department. The first quarrel that the old Board of Health had with any other department was with the Treasury Department, which asserted its right to control all expenditures of money, and probably that protest of the Treasury Department backed up by the persistent self-seeking of the Surgeon-general of the Hospital Service, had more than anything else to do with the destruction of the most respectable sanitary authority the country ever had. The defects in the organization of that body I think were self-evident. It was appointed by the President. It was entirely independent (or meant to be independent), containing in addition to the gentlemen appointed by the President — all of them eminent, recognized all over the country as foremost in sanitary matters — an officer of the Army, an officer of the Navy and an officer of the Marine-Hospital Service. I think it is fair to say that those three officers were never agreed. I presume that very few men now would find it desirable to recommend a restoration of it in its present shape. The question, it seems to me, with regard to the whole quarantine matter comes down to this: the United States has recognized the original right in the States and municipalities to control this matter, a sufficient control in the days when nothing further was done than to detain a vessel fifteen or twenty days in some harbor without regard to the separation of the sick from the well and without attempting to disinfect articles that might be infected.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, September 21, 1892.

Now we have come to a condition of things in which, in New York harbor, the lavish expenditure of money has proved absolutely insufficient to deal with the passengers of one steamer, so insufficient that every paper in every civilized portion of the world has a right to laugh at America and deride America for its stupid panic, a panic which the mismanagement in New York harbor seems largely responsible for.

What can we do to relieve this condition of things? It seems to me in the first place that you have got to have an administrative authority in which the people of this country will have confidence. I think it is possible for the government to furnish such authority. Both the Navy and the Marine-Hospital Service are probably sufficiently well organized to undertake such functions. Moreover the people must be satisfied that the regulations to be enforced are reasonable; and I doubt very much whether we have an authority at present that would satisfy the people of the United States. I am very certain that the assertion of any one man who holds a position in Washington would not be sufficient. It was such authority that the National Board of Health did and could give. To replace it, we have three propositions before us. One has been adopted by the American Medical Association, that you have a Minister of Health, a cabinet officer, a man who shall go out of office whenever his party goes out of office, subject to all the vicissitudes of political life. It seems to me nothing would be gained from a position in the cabinet where medical knowledge must be subordinate to political position. I think some of us may be inclined to think that the present Secretary of Agriculture has been as much a politician as an agriculturist. If you are not to have that, in what way are you to bring the authority of the United States to the assistance of the local government? It seems to me that the French example offers one way of getting at it — by a representative body, a body that shall represent all the powers of the States combined in one national body, which shall meet as often as is necessary in Washington, as often as the Secretary of the Treasury (if he is to be the man entrusted with regulations of our administrative body) or as often as the President sees fit to call them together. A large body of that sort might act as our National Board of Health did through an Executive Committee under ordinary conditions. Again, you have another proposition which the American Public Health Association has recommended once or twice, and that is the establishment of a bureau in some one of the existing departments. Such a bureau now exists in the matter of education. The head of this bureau ought not to be subject to the vicissitudes of political life. Any gentleman who has been in Washington will realize that a man who holds his place in Washington subject to every change in administration cannot really be a scientific man, whatever else he may be. These three schemes it seems to me are now the only way in which you can dispose of a great many of the difficulties that surround this question. It is unfair that the city of Boston should be called upon to sustain all the expense of sanitary detention of emigrants every one of whom may be transported the next day to some distant point; and it seems to me that we shall always have the interior States complaining as they do now about the administration of the quarantine service at the sea-port towns. You have already the great railroad systems quarantining against New York. At the present time the medical men are asked to perform services which the politicians are unwilling to undertake. The last Congress had before it a measure for the restriction of emigration. They did not dare to deal with it. They now ask the quarantine authorities to undertake the work for them and exclude emigrants. I think we shall all agree that this is a question in national economics, not a question in medicine until it has been shown that these emigrants are diseased.

It is a source of much comfort to us all that the quarantine and sanitary protection of this port are in the hands of a wise, vigilant and energetic sanitary authority.

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WHAT IS BEING DONE IN BOSTON TO PREVENT THE INTRODUCTION AND SPREAD OF CHOLERA.[1]

BY S. H. DURGIN, M.D.,
Chairman of the Boston Board of Health.

The fear that cholera might reach our country this season began about the first of August, and from that time to the present, there has been unusual activity shown on the part of our National, State and Municipal Governments in securing better sanitary conditions, diminishing the liabilities of importing the disease, and improving our facilities for dealing with it should it appear in our midst.

The public has been keenly stirred by the daily accounts of the large mortality from this disease in foreign cities, its steady advance from place to place, its invasion of localities with which we have constant intercourse by trade and travel, and the extreme probability of its being brought to our shores. In this state of public apprehension, if not alarm, there has been much natural inquiry, and some speculation, as to the equipment and general effectiveness of our department for dealing with such an emergency, and also as to the present sanitary conditions of the city.

I think it may be well to present briefly a statement of our present and prospective facilities and methods, and invite such criticisms and suggestions as may be offered by members of the Section.

The force of the Health Department for the inspection of nuisances, disinfection of foul places and the enforcement of ordinances and regulations, has been largely increased by temporary appointments from other city departments. The Mayor and City Council have authorized a larger expenditure of money, and the work of abating nuisances and cleaning up the city is being prosecuted with much success. Many nuisances which had existed for years have recently been abated and many others are rapidly disappearing.

Should cases of cholera occur in the city, we have the facilities for immediately transferring them to a hospital in an ambulance, or of isolating them at the house and guarding the house.

We expect early notification of suspected cases, and have places for ready bacteriological examinations of the alvine discharges.

We have temporary hospitals now in readiness to receive cases in different parts of the city, and can provide more at short notice.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, September 21, 1892.

We have three physicians in the department who will respond to cases reported at the health office, and a place for district physicians, who will respond to cases reported at police sections by night, with no physician in attendance.

To our present means for disinfecting clothing, bedding, carpets, etc., we are adding the necessary building, boiler and cylinder for the use of steam heat. The cylinder in which the infected articles are to be treated is twenty feet in length, seven feet in diameter, made of steel, jacketed, and provided with a door at each end. The building will be divided into two distinct compartments by a tight partition-wall, and the disinfecting cylinder will pass through this wall and project ten feet into each compartment. The infected articles will enter the building on one side, pass through the disinfector, and be removed from the other side of the building.

There will be added to this building another with the necessary means to accommodate forty cholera patients, if so needed, and for subsequent use for the isolation of persons who have been exposed to infection and need to be held for observation.

At quarantine we have a steamboat, physicians, and all necessary facilities for boarding and inspecting all incoming vessels. We have Gallop's Island, with wharves for landing people and cargoes, a storage-house for infected merchandise, two hospitals containing four wards each, a steam-disinfecting chamber, and all other necessary buildings and help for carrying on an effective quarantine and meeting reasonable emergencies without difficulty.

We are now adding to the accommodations on the island several other buildings, which may be needed for hospitals and the temporary shelter and segregation of well persons. One building is being prepared for bathing purposes, and another for additional and improved means for disinfecting personal clothing. A public water-supply and telephonic communication are also being added to the island.

All vessels from foreign ports are inspected at quarantine, and those carrying passengers are delayed for the inspection of all persons on board. Immigrants from infected countries are removed to Gallop's Island, given a warm bath, and their clothing and baggage subjected to a steam heat of 230° F., for twenty to thirty minutes.

All vessels which come from an infected district, bringing immigrants, or found to be unclean, are well washed with a solution of corrosive sublimate (1 to 500), fumigated with sulphur dioxide for six hours (four pounds of sulphur to 1,000 cubic feet of space tightly closed), and then well aired.

All old bedding of immigrants and other worthless articles are burned in the furnaces of the vessel before leaving quarantine.

Cargoes from infected ports are discharged into lighters and there disinfected, or sent to Gallop's Island for storage and subsequent treatment.

All infected persons are at once removed to hospitals on land for comfortable treatment, and well persons from the same vessel are removed to healthy quarters on land.

While the proposed extension and improvement of our plant at quarantine will greatly facilitate and lighten the duties there at all times, and provide for possible occasions, it must not be supposed that it is to replace a weak and inefficient plant, for there has been no time in many years when we could not receive and properly care for at least fifty patients at Gallop's Island, and readily disinfect all personal effects and baggage by the best methods known to science.

There has been no time in the last twenty-five years when the Boston quarantine has been found unable to receive and properly treat all infectious diseases which have been brought to it from sea or from our own city, and to efficiently disinfect and cleanse all vessels, cagoes and other effects which have required such treatment.

During the recent fear of cholera there has been no time when the sick or well in large numbers could not have been readily removed from an infected vessel to healthy quarters, and properly cared for.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

LATE GERMAN VIEWS ON ECZEMA.

At the meeting of the German dermatological association, held in Leipzic last autumn, eczema was among the subjects for discussion that appeared on the programme. Several interesting papers were read, of which the most important was that of Neisser on the pathology. He began by remarking that in no other branch of clinical medicine, had so much effort been made to systematize disease, as in dermatology. But these attempts, starting at times from an etiological, at times from a pathological standpoint, have served rather to increase the difficulty of a successful grouping, than to establish their own claims. At the present time it is impossible on account of the insufficiency of our knowledge, to combine perfectly the different points of view, and therefore every system fails. It is to be hoped that the advances in etiology and in pathology will make it possible to determine a natural grouping for all disorders, just as we now have established the class of infectious granulomata for example. In this class the relationship of the different members is based upon all the pathological data, upon etiology, histology and clinical course. With regard to eczema the same differences of opinion have arisen, proceeding also from the different points of view from which a start is made. Some consider that the most weight should be attached to the *form* of the skin affection, others to its course, and a third party, finally, to its causation. To the author it seems that we should hold fast to an anatomical idea of that which we call exzema: to the *form* of the disease. In his definition of eczema he holds to the old definition of Hebra, amplified only by the greater importance attached to the epithelial alteration, which he considers specific. Eczema is a more or less acutely beginning, superficial inflammation, accompanied by marked serous hyperæmia and exudation (located chiefly in the papillary bodies, and in the upper layers of the corium), and by a peculiar exfoliation of the epidermis which is best described as a desquamative epithelial catarrh. The anatomical picture is characteristic, and not varied in eczemas of a totally different course, or that have been produced by very different causes.

Unfortunately, we have little knowledge of the manner in which the causative agent acts. If the agent is brought to the skin from without, the epithelium is the part directly and primarily affected, while the inflammation under these conditions may be considered partly as a consequence of the epithelial alteration, partly as a consequence of the direct action of the irritant on the vessels, which causes an alteration of their walls, and brings by chemotaxis a collection of leucocytes to the point of chemical irritation. But if there is no external irritant present, how is the epithelial disturbance to be explained? It seems improbable that it is due entirely to the inflammatory process of transudation, and equally improbable that it is wholly due to the direct action of the agent coming from within, on the epithelium. And all that we know will not explain why in burns, and in bullous eruptions, etc., the skin is so quickly brought back to its normal state, while in eczema this may be a most tedious matter. With regard to the action of the nerves, Colomiatti and Leloir are the only authors who have been able to detect anatomical alterations in nerves supplying eczematous tracts, and we have little reason for regarding an affection of the nerves as playing a causative part in eczema. In elaborating the etiology of eczema we must distinguish between (1) the primary, essential cause; (2) the predisposing agencies; (3) the circumstances which determine the chronicity of the eczema. As primary causes, we have (1) mechanical; (2) chemical, from without; (3) chemical, from within; (4) micro-organisms. The predisposing agencies and the circumstances that determine the chronicity are numerous and varied, comprising both external causes and very many internal conditions. Neisser points out that the doctrine of Hebra did not teach that eczema was produced only by agents acting from without; he did not deny the influence of the constitution on the course of certain eczemas. He spoke of dyspepsias, rachitis, menstrual disorders, chlorosis, pregnancy, lactation, alcoholismus, and the action of the weather and cold. He did not, however, favor the introduction of meaningless terms, as diathesis, nervous conditions, etc., and asked if the conditions mentioned were really primary causes, or only secondary influences affecting the course.

Unna has made etiology the standpoint of his conception of eczema. His definition is, "Eczemas are chronic, parasitic catarrhs of the skin, with desquamation, itching; and a tendency to respond to irritation with exudation and increased inflammation." To this definition Neisser takes strong exceptions, objecting to his limitation of the name eczema to the *chronic* inflammatory processes, and to his claim that the acute attacks that end quickly, have no right to be considered here. Until all the parasites that are to be found in patches of eczema have been carefully studied and their properties recognized, the relation which exists between these parasites and the eczema can rest only on a purely theoretical basis. On the other hand, the importance of the presence of bacteria in causing mixed infections that influence the course of eczema has been thoroughly proved, as, for example, in the pustular and impetiginous forms. Unna's "seborrhœic" eczema cannot be accepted. The first form of this, the "scaling," is not an eczema at all, but a primary affection of the fat-producing glands, and becomes an eczema only secondarily. The second form of seborrhœic eczema, the "crusting," is also not an eczema, Neisser's view being that it is of parasitic origin favored by seborrhœic alterations of the skin, and resembling psoriasis rather than eczema. Unna's third form, the "oozing," is really an eczematous affection, and, according to Neisser, of doubtless parasitic character (from its circinate and serpiginous forms), but the eczema is so mingled with the characters of seborrhœal disturbance and parasitismus, as to leave it doubtful which is the essential factor. Furthermore, the microscopic investigations of so-called eczema seborrhœicum have brought no support to Unna's view, as Neisser has been able to find nothing characteristic in the descriptions. Tuberculous eczema has also no grounds for existence. As soon as tubercle bacilli have become engrafted on an eczema, it ceases to be a pure eczema, and becomes (in combination with the eczema) a lupus or some other form of cutaneous tuberculosis. There is absolutely no proof that tubercle bacilli can produce an eczema without exciting a specific new growth. In conclusion, the questions are asked: (1) What principles are to guide us in the local treatment? As etiological considerations do not afford us any help, we are forced to an antiphlogistic, symptomatic method.

(2) Shall we only treat locally? The author expects, as a whole, little result *without* local treatment. But all the indications which may have even a remote relation with the skin affection, should be carefully attended to.

(3) Should we always treat, or is there danger for the general condition to be feared, from curing an eczema? Convincing observations on this point are not in the author's possession, and he considers it one which the general practitioner may be better able to decide than the specialist.

TANNATE OF MERCURY.[1]

This preparation was introduced by Lustgarten in 1884, and three years ago was made officinal in the Austrian Pharmacopœia. As it is not acted upon by dilute acids it will pass through the stomach without change, while in the duodenum it is reduced to minute globules of metallic mercury, and is probably absorbed by the villi in this state. For this reason it has been called internal inunction, and it is highly probable that the chemical process of solution is the same as in inunction. Although irritation of the bowels occasionally occurs from this preparation, it is generally admitted to be comparatively mild and unirritating. Mercury has been found in the urine twenty-four hours after administration. Lustgarten's present experience extends to about three hundred cases in which the tannate has been used. He is an advocate of a modified intermittent treatment of syphilis, and gives thirty to forty inunctions immediately after the secondary appearances, as he regards inunction as the most energetic treatment. After that he gives the tannate, three to five grains daily, for a month at a time, with increasing intervals of from one to three months. He has had good results with the tannate in combination with the iodide of potash in recurrent secondary eruptions, and in the tertiary stage, leaving an interval of several months between the administration of the two drugs. The average dose of the tannate for an adult is three grains daily, increased to five grains or more, one course of treatment comprising one hundred to one hundred and fifty grains. He has never observed symptoms from the stomach, in a healthy state of the intestinal tract, and has never seen a severe stomatitis, as it has no cumulative properties. It has been successfully used for children, in both hereditary and acquired syphilis, in the dose of one-third of a grain from two to four times a day, in a teaspoonful of milk; if feasible mother's milk. The formula generally used is:

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[1] S. Lustgarten: New York Medical Journal, March 12, 1892.

℞ Hydrarg. tannic. oxydulat. . . gr. iss.
Acid tannic. } . . . . . āā gr. ¾ M
Saccar. lac. }
F. in pulv. sive in capsul-gelatin.
Sig. One, twice or three times a day.

TINEA IMBRICATA.[2]

The greater part of this paper was read before the Medical Society of Hong Kong, in 1888, and published in the society's journal at that time. It is here partially rewritten and enlarged. The patient shown was a man twenty-two years old, a native of Tiotchiu, who presented himself at the Alice Memorial Hospital in Hong Kong. The whole skin, excepting the soles and the fore part of the dorsa of the feet, the fore part of the hairy scalp, and the palms of the hands, was covered with peculiar, tissue-paper-like scales. No redness, injection or sign of irritation or itching anywhere. He stated that he had had the trouble for three years, and that it had gradually spread from the skin of the forehead. The scales were found on examination to be free at one edge and continuous with the body at the other. Moreover, it could be seen that the disease had advanced in parallel and concentric lines from a great many different centres, the attached border of the scales being toward the periphery. Microscopical examination of a scale after softening in liquor potassæ, showed a luxuriant fungous growth somewhat resembling that of tinea tricophytina, differing from it in its great abundance. In certain parts the fungus is packed layer upon layer, and this profusion is regarded by Manson as one of the distinguishing features of the disease. Years before the author had successfully inoculated the affection upon the arms of students, obtaining at first a slightly elevated brown spot, which rapidly increased in diameter with a scaling periphery, and later five concentric circles were observed, by successive fresh developments in the centre. The brown color is evidently owing to the color of the fungus, as the fawn color of tinea versicolor is due to the color of the microsporon furfur. In Chinese, whose skins have become dark from exposure, and in the dark-colored negro races, the spots of tinea versicolor appear lighter than the surrounding skin, as the color of the fungus undoubtedly conceals the pigment of the skin beneath; and the same is true of tinea imbricata. Manson was familiar with ordinary ringworm, and frequently saw it in his practice among the Chinese, and offers the following reasons for separating the affection described from tinea tricophytina. Ordinary ringworm seldom affects the entire body or even an entire limb; whereas tinea imbricata occupies a very large area. Ordinary ringworm affects the hairy parts of the surface; tinea imbricata avoids these. The active portion of an ordinary ringworm is accompanied by inflammation, redness, and often vesication, and much itching. In tinea imbricata there is seldom, if ever, any sign of inflammation. The ring of ordinary ringworm is usually single. Tinea imbricata, per contra, never gives up ground that it has once occupied. In ordinary ringworm there are only fine branny scales, while in tinea imbricata they are always abundant and large, often an inch in length. In ordinary ringworm the fungus is often hard to find; in tinea imbricata it is always found in the greatest profusion. Inoculation with tinea imbricata gives characteristic appearances differing from those seen when the tricophyton tonsurans is inoculated. Lastly, tinea imbricata is confined as yet to a limited area, while ordinary ringworm is spread over the whole world. The writer then spends some time is discussing the objections that have been made, especially by Tilbury Fox, to differentiating this affection from ringworm, and concludes that it cannot be, as is claimed, a tinea circinaba modified by climatic conditions and personal habits.

The home of tinea imbricata is the Malay Archipelago and from here it has spread to many of the islands of the Pacific and into China. According to the account of Dr. Guppy its existence on some of the islands is very wide-spread, four-fifths of the people who inhabit the Treasury Islands, for example, being affected. It would seem that the conditions of climate favorable to the growth of tinea imbricata are the same as those that are the best for the cocoanut.

As to the treatment, as the fungus lies so superficially it is readily killed, but owing to its great profusion may readily relapse. Manson recommends burning or boiling all the clothes and coverings. He has been in the habit of applying linimentum iodi, taking a limb or part of the body at a time. Sulphur ointment has been found efficacious in the labor ships of the South Pacific.

(To be continued.)

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

A. N. BLODGETT, M.D., SECRETARY.

Meeting of September 21, 1892, Dr. E. G. Cutler in the chair.

Dr. J. H. McCollom read a paper on

OBSERVATIONS ON CHOLERA.[1]

Dr. S. H. Durgin read a paper on

WHAT IS BEING DONE IN BOSTON TO PREVENT THE INTRODUCTION AND SPREAD OF CHOLERA.[2]

Dr. H. P. Walcott read a paper on

NATIONAL HEALTH LEGISLATION AND QUARANTINE.[3]

Dr. S. W. Abbott spoke of

THE IMPORTANCE OF PUBLIC DISINFECTING STATIONS.[4]

Dr. H. J. Barnes: At the present time, when the community is so thoroughly disturbed by danger which we, as medical men, know to be near at hand, although some of us may hold the opinion that the public is unnecessarily alarmed, we can do no better service than to devote our efforts to strengthening the authority and supporting the measures of our health officers. On them is placed responsibility which we should assume they fully recognize. They have an abundance of work in hand and we should only add to the burden by raising doubts or questioning the efficiency of their action. Even in the absence of competent health officers in rural districts, where boards of selectmen are charged with the duties, I feel there is comparatively little danger, for through the public press every person who reads knows something of the penalties attaching to indifference or incompetency. We may, therefore, further assume, should a doubtful case occur in such a district, the constituted authorities would not be slow in asking the council and advice of our State Board of Health, in whom we all have the greatest confidence.

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[2] Patrick Manson, M.D.: British Journal of Dermatology, January, 1892.

[1] See page 284 of the Journal.
[2] See page 308 of the Journal.
[3] See page 307 of the Journal.
[4] See page 286 of the Journal.

It seems to me we may consider our system of protection this evening, however, without embarrassment to our health officers, and if there be found opportunity for improvement, present our views when the public mind is more tranquil but the subject fresh in memory, with good prospect that legislature and municipal corporation will give all the attention the cause merits.

Our State Board has always urged the appointment of health officers in every community, to which we all agree. It goes without saying such officers should have the qualifications requisite to fulfil the duties, but in addition they should be absolutely independent of political influences, which can only be secured by giving them a stable tenure of office that they may speak and act with vigor and without consideration of what effect it may have on a re-appointment or election.[5] I fancy were the health office of New York established under these conditions she would not have found herself so ill equipped to cope with the disease when it first appeared. In 1872 England and Wales, under what is known as the Public Health Act, was divided into sanitary districts, and the sanitary authorities of each (which were the municipal governments) were charged with the duty of appointing one or more medical officers of health. The act of 1875 empowered the Local Government Board to combine districts by provisional order for the purpose of appointing such an officer, whose jurisdiction might extend over several parishes or towns. In 1888 it was further enacted that every medical officer of health appointed after January 1, 1892, should be the holder of a public health diploma, and registered under the act of 1866, unless he shall have held office three consecutive years prior to the time when the law takes effect. He receives his appointment from the local authorities, and they have power to suspend him for six months, but they cannot remove him except by the consent of the Local Government Board, the duties and functions of which are otherwise similar to those of our State Board of Health. It prescribes the duties of the local officer which are, in many respects, like those of our municipal boards of health or boards of selectmen, except that they have a wider scope. They are required to make annual report to the district to which they are appointed, and also to the Local Government Board. This system secures qualified officers and a security in tenure of office during good behavior. It places the office outside the patronage of political parties, and no politician or powerful corporation can exercise improper pressure in promoting or resisting their acts. There is a spirit of rivalry on the part of each to present the lowest mortuary rates for his district, and the average of all is to-day lower than that of any other nation, and at this moment, with a foreign commercial intercourse equalled by that of no other people, in fact we may say rivalling in magnitude that of all others combined, she is able to preserve her territory from infection without the aid of a quarantine law. Not even a suspect of cholera, under section 130 of the order of 1890, can be restrained over forty-eight hours. All must be allowed to proceed to their destination after record of their name, etc., which is forwarded to the officer of the district in which they signify their intention to stop. This is a happy condition to which we may well aspire, but not within our reach under our present system of electing annually a board of selectmen charged with these important duties, or even where boards of health are appointed by municipal governments, for in neither can it be said they are free to act in accordance with their best knowledge, it being a comparatively easy matter for an influential politician or a large corporation whose interests may be affected, to cause his removal or make it so uncomfortable that resignation is the only alternative for an honorable man. I have little doubt but examples of these objectionable features are in the minds of most of us. The reported attempt to influence the action of Governor Flower in the Fire Island case by reminding him of a prospective loss of votes should he persevere in making it a station for the passengers of the *Normannia*, is quite enough for an illustration of what is possible to occur to any health officer of this State other than a member of the State Board. We all know it takes a strong man to resist such influences, particularly if exerted near the time of a re-election or appointment, or at a time when the public is not alarmed by danger close at hand.

A great many additional reasons might be given for urging reform in this respect, but I reserve them for a time more opportune, holding it now to be our first and highest duty to give our health officers a strong support for every measure they deem necessary for the public protection.

I am, therefore, not quite prepared to advocate our petitioning the Legislature with the object of securing a divorce of health from politics, but it seems to me we might, with ultimate profit to the community and State, elect a committee to consider if any change is desirable in sanitary legislation, and at some subsequent meeting, when we can more freely discuss the question, receive the report and take action.

Dr. J. C. White: I rise merely to offer a motion. After what has been said this evening by members of the Society it certainly should be entirely unnecessary for me to make any remarks in support of it when we consider, after the very forcible communication made by the Chairman of our State Board of Health, how entirely wanting is our national government in proper methods of dealing with great sanitary questions; how we have seen that this invasion of cholera along our coast has found our local boards of health quite unprepared to meet it; how even our Chairman of the Board of Health of Boston, desirous as he is to do everything possible within his power, has shown that the city of Boston was entirely unprepared to anticipate its coming, and that these all important steps have been taken only after cholera was brought to our shores; when we reflect how entirely incompetent is the method of appointment and uncertain is the tenure often of the local boards of health throughout this State, it seems to me that such a body as this should take some step towards securing reforms in this direction so far as lies within our power. Certainly, unless we do so, it will not be taken by any other body, and legislators and politicians under the dread influence of the immediate presence of cholera may be more ready to accept the propositions which come from a scientific body of this standing.

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[5] There is one other matter to which I wish briefly to allude. It seems as if the time would soon arrive, if not already ripe, for our medical school in a post-graduating course, to grant diplomas or certificates for proficiency in sanitary science. As early as 1871, Trinity College, Dublin, began to grant such certificates, and in 1886 fourteen out of nineteen licensing bodies of Great Britain had adopted a curriculum for this purpose. This furnishes the State with a corps of medical men equipped with the essential knowledge of a health officer. In this State and Country it seems as if the services of such men would soon be in demand, and it would be a source of additional pride to know that our *alma mater* takes the pioneer step.

The motion is as follows:

> The Chairman, at his discretion, shall appoint a committee of five members, to report to this Society if any action is desirable respecting sanitary legislation.

It was seconded by Dr. Greenough, and carried.

Dr. V. Y. Bowditch: I should like to ask if the Board of Health has considered any proposition of sending throughout the State to the physicians simple rules for the disinfection and for the treatment of cholera, such as could be easily adopted at short notice. It seems to me I have a recollection of seeing in the columns of the daily press that the State Board of Health was to do something of this sort.

Dr. H. P. Walcott: The State Board of Health has prepared a circular which it has distributed, but not as yet to physicians. It was a circular more immediately addressed to the local sanitary authorities. If it were desirable. it could be distributed more generally. Knowing that the whole matter was of interest we have also had prepared the very elaborate and rather more far-reaching directions published by the minister of public health at Berlin upon the 28th of July, which are supposed to represent Dr. Koch's latest ideas on disinfection and the precautions which might easily be taken. If the Society as a representative body think these papers desirable to the physicians of the State, the State Board of Health would be very glad to have them printed for distribution throughout the State.

Dr. J. C. Warren: I have been much interested in what I have heard this evening and much instructed. I should like to have heard from some of the gentlemen whose opinions I should recognize as authority, about the geographical position of Boston from the sanitary point of view. Perhaps that is a question this committee might consider. It seems to me Boston is peculiarly constituted geographically in its inland waters, which ebb and flow extensively with the tide and leave exposed tortuous inlets in every direction. Those who come and go on the roads which lead out of Boston in the various directions know what peculiarly favorable conditions there are for foul masses of water and filth of different kinds to accumulate in partially obliterated water areas. What was once a large open bay has now become a series of imperfectly washed creeks. In the recent escape of criminals through the drains and sewers connected with the prison we perhaps acquire a picture of the conditions which surround that neighborhood; and we must know that not only individuals are able to escape but large masses of filth and excreta are poured out in that neighborhood; all the time perhaps more dangerous to the community than those few individuals. Then we have inland waters much like those at Hamburg, and it has occurred to my mind perhaps more from a lay than expert point of view, whether in extensive epidemics the geographical position of the city might not favor the spread of the disease. We are surrounded in every direction by a vast area of flats which are polluted and uncovered during long periods of the day, and I feel as if a vast amount of valuable sanitation might be done in purifying the air of the city in removing those flats; building embankments and putting our inland waters somewhat in the condition of inland waters of other large cities like London and Paris. Those are, I think, subjects for reflection for that committee.

I should like also to have heard from the bacteriologists as to their views on the conditions favoring the growth and development of the comma bacillus.

The President: I wish to return the thanks of the Section to the gentlemen who have taken part in the discussion of the evening, to thank them cordially for what they have done.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular meeting, Monday, May 9, 1892, the President, Dr. Frederick I. Knight, in the chair.

Dr. Bullard read a paper on

A PECULIAR FORM OF NYSTAGMUS (CHEYNE-STOKES NYSTAGMUS) WITH REPORT OF A CASE.[1]

Dr. J. J. Putnam: I have been very much interested in the paper, but it is difficult to discuss such a point of physiology without preparing one's self in particular.

Dr. Wadsworth: I have been much interested in the paper. The case certainly appears to be a very unusual one, and I do not think that I can throw any light on it. The whole subject of nystagmus is rather a dark one, and the cases vary much. I think that one must look for different causes in different forms, and the explanation that the reader has given seems a very rational one here.

Dr. Knight: I should like to say that I have seen well-marked Cheyne-Stokes respiration in morphia poisoning.

Dr. Bullard: I know that it occurs, sir.

Dr. Knight: I thought that you made a distinction.

Dr. Bullard: I meant to have spoken of that when I read the paper.

Dr. Knight: This occurred in a very well-marked case which recovered.

Dr. F. H. Williams read a paper on

EARLY LOCAL TREATMENT OF DIPHTHERIA.[2]

Dr. Osgood: In cases in which the children died had tracheotomy been performed?

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[1] See page 301 of the Journal.
[2] See page 303 of the Journal.

Dr. Williams: Yes, where there seemed to be stenosis; where there was difficulty in getting air. It was simply a question whether the membrane was down in such a portion of the larynx as to make breathing difficult.

Dr. Osgood: I have always been impressed with the great necessity in diphtheria of the very early use of tracheotomy. It seems to me this treatment would be aided if the patient were not inhaling over an infected surface. For this reason I should prefer tracheotomy to intubation. This is not a digression, for the point I wish to make is, that if tracheotomy were done early, this treatment which Dr. Williams has described would have a better chance.

I would ask whether Dr. Williams experienced any trouble in using this glass instrument in children, who, generally, will tolerate one or two annoying treatments and afterward fight. This, I should think, would make the use of a glass instrument hazardous.

Dr. Williams: No instrument was broken except one which was let fall by one of the nurses.

Dr. Ayer: I was very glad to hear Dr. Williams say that diphtheria is a local disease at first and should be treated in the most energetic manner at the outset. I should think, with Dr. Osgood, that it would be difficult to use that instrument after one or two applications. In the use of subsulphate of iron with a brush after one or two applications it is almost impossible to use it, the struggle is so great. In the use of fluids for atomizing, one must take into account that although the amount used at one application is small, yet the whole amount used in twenty-four hours may be dangerous, in case of carbolic acid for example.

Dr. T. M. Rotch: Unfortunately I was too late to hear the paper and therefore do not know what points the reader made. I presume that Dr. Seibert's treatment has been mentioned. I have had no experience of that kind in the local treatment in children. I very seldom give any local treatment except careful irrigation of the naso-pharynx and keeping it clean as well as possible.

It seems to me the great danger in children is the anatomical relations of the naso-pharynx and the tonsil, septic cases coming where the naso-pharynx is affected. There is a large plexus of absorbents which takes up a poison very readily, and therefore the treatment should be the careful irrigation of the naso-pharynx. The tonsil, on the other hand, is anatomically different. There are few absorbents, and it is as much an excretory as secretory organ, and a very large amount of disturbance on the tonsil shown by membrane or a large number of bacteria there, does not begin to do the harm that a small amount in the naso-pharynx does. Seibert thinks the membrane if anything is rather protective, but that you must get into the submucosa, and his instrument is well adapted to injecting in that way. He injects chlorine, and in very young children has had very good results where there was a good deal of glandular swelling in the cervical glands and in the neck. I am not sure how far his views are supported in New York. Many men do not believe in this active local treatment in diphtheria. I always depend much more on the cleansing of the naso-pharynx, letting the membrane alone in the throat, and using stimulation. Of course my views might be very much modified by Dr. Williams's investigations, which are the latest which have been done in the wards.

Dr. Clark: I should like to ask if these solutions of peroxide can be easily obtained.

Dr. Williams: They can be had of the Theodore Metcalf Company in Boston.

Dr. Buckingham: The reader spoke of the views of Welch, of Baltimore.

Dr. Williams: I will read a few lines from Welch and Abbott's article. "We have never found the bacilli in the mucous membrane affected nor in sections from internal organs; not even in the diphtheritic foci presenting nuclear fragmentation and hyaline masses and fibrin. The Löffler bacilli, therefore, not only do not invade the affected mucous membrane, but they do not usually even extend throughout the entire thickness of the diphtheritic pseudo-membrane. On the other hand, various complications of diphtheria may be due to the secondary invasion of other organisms, notably streptococci, which are occasionally found in the mucous membrane, lymphatic glands and elsewhere."

Dr. Buckingham: With reference to the way in which he uses his syringe. Does he push it through the membrane into the tonsil?

Dr. Williams: Where the tonsil is swollen and boggy in character this point goes in easily, and I have not hesitated to push it in one-fourth of an inch and make injections in different places. The point where the injection is made swells up locally, has a white froth upon it, which the patient expectorates, and in a few hours the tonsil is reduced in size. Take, for example, a tonsil which is convex, large and swollen; it becomes concave instead of convex. I do not use any force.

Dr. Buckingham: I do not pretend to know how the bacteria are taken in, but it seems to me that where we have a membrane which is getting rotten it is a good thing to get rid of it if we can, but practically I had supposed we could not do this without doing more harm in other ways, and I have been commonly in the habit of letting it alone. The last time I had charge of the diphtheria wards I was in the habit of using peroxide of hydrogen as a spray, with the purpose of keeping the throat clean, and it was my impression that in the places where you could see it, it went off rather quicker with the use of the fifteen per cent. solution than with the use of Dobell's solution or corrosive sublimate, and that it returned as a fresh, clean membrane. I have not seen any of Dr. Williams's work.

Dr. Sears: Did I understand Dr. Williams to say that the course of the disease had been very materially shortened?

Dr. Williams: I think so. The after-effects are less marked and the patients seem to recover more quickly. I have not noticed cases of weak heart. With the strong solutions, 100 volumes or over, a membrane an eighth of an inch or more in thickness is kept from spreading and in most cases can be cleared off for the time. With this treatment the patients have done better than under any I have ever used in diphtheria. Formerly I relied upon solutions of chlorinated soda or weak, 15 volume, peroxide for local treatment.

Dr. Buckingham: I noticed a comparison was made between deaths among the surgical patients and medical patients, the surgical patients not being treated with peroxide and the medical patients being so treated. I think that might mislead. I think we might expect that of those patients who come to intubation and tracheotomy many are going to die without reference to any kind of treatment, because they have the disease in a more serious way.

Dr. Williams: Of course, the cases which come in and have tracheotomy or intubation or come in with the tube in the throat are not expected to do so well. As far as the surgical cases go I think the results at this hospital are unusually good. There were so many points to be taken up that I did not go into detail about them; they were not in my service.

Dr. Rotch: I would like to ask whether Dr. Williams noticed after secondary glandular swelling had taken place that injection of the tonsil reduced the swelling.

Dr. Williams: This was observed in one case.

Dr. Rotch: I have always thought that it was not the amount of membrane which caused the danger in diphtheria. It seems to me we see the most dangerous cases where there is the least membrane, and cases with the largest amount of membrane over the tonsils do perfectly well without touching the membrane at all. Dr. Seibert has treated hundreds of cases by his method and it has been used in Germany. He holds that in those septic cases he has seen a great deal of improvement where there has been enlargement of the glands. I asked him whether he was sure that the chlorine-water would kill the bacteria and he said he was. He was not afraid to put the instrument in his own mouth after disinfecting it with chlorine-water.

Dr. Williams: I think all will admit that many of the cases which come to the City Hospital are severe ones. I do not mean to say you can cure every case of diphtheria with this, patients after the early stages have much less chance, but as far as my experience goes I have more confidence in it than any method I have used. It is harmless and the stronger acid peroxide solutions will disintegrate the membrane thoroughly and are good germicides.

Dr. Ayer: Does Dr. Williams also rely upon iron, tonics, etc.

Dr. Williams: By all means. Good care, food, stimulants, and tonics.

Dr. Rotch: I would like to ask whether any difference has been noted in the septic character of the cases where the tonsils were affected and where the naso-pharynx was affected.

Dr. Williams: Yes. I think the cases where the membrane is limited to the tonsils are milder, where the membrane spreads back into the naso-pharynx they are more severe cases.

Dr. Rotch: It seems to me when the tonsils are covered and it does not go further they are very good cases to treat, but where the naso-pharynx is affected I do not think you can get at it to inject it. It has become a constitutional disease and kills the patient irrespective of the membrane on the tonsil.

Dr. Knight: I would like to ask whether in any case where he began to use the peroxide he noticed that the disease extended to the naso-pharynx.

Dr. Williams: When the membrane was accessible it has not extended except in the one case referred to in my paper where the treatment had been omitted for ten hours. If I can keep up the peroxide treatment once in four hours and the membrane is accessible I do not think it is likely to extend.

Dr. Knight: You never had it appear in the naso-pharynx?

Dr. Williams: I had cases where it was there.

Dr. Knight: It would seem as if an unusually small percentage had any trouble in the naso-pharynx.

Dr. Williams: Two-thirds of the patients had membrane elsewhere than on the tonsil, posterior pillars or back of the pharynx.

Dr. Knight: I suppose taking a large number of cases if a much smaller number than usual showed signs in the naso-pharynx you would be inclined to attribute it to treatment, you would not think it was accidental.

Dr. Williams: I do not wish to offer these cases as being complete in any way. From the observation of 63 cases one cannot draw many inferences. The paper gives the result of a few weeks' experience with diphtheria using strong solutions of peroxide locally, and I have been able to do with this treatment what I never have been able to accomplish before. I should want a larger number of cases before attempting to estimate the value of this treatment. Of course most of the cases of diphtheria begin at some point in the throat where the membrane is accessible. If one gets at that early and uses this treatment I think good results can be obtained.

Dr. Knight: Has Dr. Williams any idea of the relative severity of diphtheria this year compared with previous years either at the hospital or in the city,—whether the epidemic may be growing milder.

Dr. Williams: I have not been able to determine. I think it has been more severe this year.

Dr. Knight: That is a very important point in considering treatment. I remember a number of years ago there was a severe epidemic in Maine attended with great mortality. One of the gentlemen who afterwards came to Boston had a sad experience in the epidemic. The last year he adopted the treatment by hyposulphite of soda and said he never lost a case, and it was his boast that after he learned this treatment he never lost a case, and the truth was that nobody else was losing cases.

Dr. H. W. Cushing: I can say that last August and September the mortality in the surgical cases was much higher than my previous experience in past years.

AMERICAN OTOLOGICAL SOCIETY.

(Concluded from No. 11, page 270.)

Twenty-fifth Annual Meeting, held at the Fort Griswold House, New London, Conn., July 19, 1892.

REMARKABLE IMPROVEMENT IN HEARING BY REMOVAL OF THE STAPES,

by Dr. F. L. Jack, of Boston.

In June, 1892, the author operated on a case of chronic suppurative otitis in a girl of twelve years. After removing portions of the membrana tympani, malleus and incus, examination showed the head of the stape to be carious; and it was decided to remove the bone. Previous to operation there was very little hearing in the affected ear. On the morning following the operation the hearing was much better, and this fact suggested the possibility of good results from the removal of the stapes. Previous to this, the speaker had operated on two cases of chronic non-suppurative middle-ear inflammation, by removal of the drum membrana, malleus and incus. The results, as regards hearing, were not satisfactory. Removal of the stapes is much better in its results, and in the author's experience there had been no inflammation reaction whatever. The method of operating was then described. Sixteen cases were reported in detail, giving the results of tests for hearing before and after operation. A few of the cases were presented to the Society for examination.

The effect of the operation on the hearing as tested by the watch, in some was not marked in either way, indicating in some slight loss, in others slight gain. "The result which gives to the operation its importance is the marked improvement in hearing the human voice which is thereby accomplished. If persons who have heretofore heard only with difficulty can be made to hear with ease, by treatment unattended with danger, the operation described, which has accomplished this result, is certainly worth consideration. As to the reason why this effect is produced by the operation I have no theory to offer, other than the simple supposition that it is by the removal of a mechanical obstruction to the sound waves.

MIDDLE-EAR OPERATIONS,

by Dr. C. J. Blake, of Boston.

The history of the surgical treatment of middle-ear disease was first briefly referred to, as showing that since Sir Astley Cooper's perforation of the membrana tympani for the purpose of relieving deafness and subjective noises, it has been definitely progressive.

In the chronic non-suppurative disease of the middle-ear where surgical interference is determined upon on account of obstruction to the sound transmission through the ossicular change, the removal of the incus or malleus may be considered merely incidental since the stapes is the important element. Various procedures for the mobilization of the stapes have been proposed and practised, but the removal of the stapes has until recently been left out of serious consideration. The justifiability of this procedure is to be premised from the fact that the stapes is especially liable to be tied down by the reduplications found in about eighty per cent. of normal ears.

The writer's experience in this matter includes a series of experiments in various cases, beginning with the observations having reference to the diagnostic value of high musical notes (1873), extending up to the present time, and including operations in the following sequence: (1) Excision of the posterior segment of the membrana tympani, allowing the sound waves to fall directly upon the stapes. (2) Formation of a flap from the posterior segment of the membrana tympani and attachment of it to the descending process of the incus for the purpose of transmitting the vibrations of the membrane directly to that bone. (3) Division of the incudo-stapedal articulation through a small triangular opening in the membrane tympani. (4) Attachment of a flap from the posterior segment of the membrana tympani to the head of the stapes, the incus being either wanting or removed. (5) Division of the incudo-stapedal articulation in the case of existing perforating of the membrana tympani, division of the muscle and of mucous folds of adhesions. (6) Removal of the stapes itself, mobilization of the stapes, including stapedenotomy and division of adhesion, is of value in the cases the result of suppurative disease. Surgical mobilization is of comparatively little value in the chronic, non-suppurative disease of the middle-ear. For the improvement of hearing and relief of tinnitus in the severe cases of chronic non-suppurative disease of the middle-ear, the disarticulation and removal of the stapes is likely to be of more lasting benefit than removal of the malleus and incus. The speaker would not, in the light of present experience, hesitate to recommend stapedectomy in cases where he had previously proposed dividing the articulation of the incus and stapes and division of the tendon of the stapidius muscle.

The operation varies in difficulty in individual cases, but is more easily done in the chronic non-suppurative cases than in those in which the fixation of the stapes is an incident of a long-continued suppurative process. The method of operating was then fully described.

AFTERNOON SESSION.

WOUND OF THE LATERAL SINUS IN THE COURSE OF MASTOID OPERATION FOLLOWED BY SEPTICÆMIA, WITH RECOVERY,

by Dr. D. B. St. John Roosa, of New York.

The speaker remarked that there had been a number of cases reported in which the sinus had been wounded during operation, but that, so far as he was aware, death had in no instance resulted from this accident.

The patient, a young lady twenty-three years of age, had for years suffered from recurrent attacks of suppuration of the left ear. It was thought that the mastoid was probably in a carious condition; and it was decided to open it, the drill being used. As soon as the bone was perforated, the drill dropped into a large cavity, and the removal of the instrument was followed by a gush of venous blood which could not be checked by ordinary means. It was believed that the lateral sinus had been perforated. The wound was plugged with iodoform gauze. Four days later, when the wound was dressed, there was no trouble from bleeding. Symptoms of septicæmia then set in; but after two months of expectant treatment, the patient made a complete recovery.

EVENING SESSION.

EXCISION OF MEMBRANE AND MALLEUS FOR CATARRHAL DEAFNESS, FOLLOWED BY SUPPURATION, MASTOID EMPYEMA AND BURROWING ABSCESS OF THE NECK,

by B. Alexander Randall, M.D., of Philadelphia.

A case reported of chronic catarrhal deafness unimproved by ordinary methods, in which excision of the drum membrane and malleus was done under ether, the incus being pushed up and not extracted. No reaction followed till the fifth day when high fever began, with severe pain and profuse muco-purulent discharge. This gradually lessened under treatment, but in about four weeks pain and swelling of occiput. mastoid, and of neck at the angle of the jaw, gave evidence of mastoid empyema breaking into the digastric fossa. The usual incision was made over the mastoid, the pus evacuated from the digastric fossa of the neck abscess beyond, bone sinus scraped, and the outer surface of the mastoid trephined in the usual manner, opening the antrum freely. On irrigation, the fluid passed into the canal at first; then the fluid found its way into the pharynx by some lower opening. The temperature fluctuated greatly during the following fortnight, with oculo-motor-paresis, diplopia, and some mental aberration suggestive of intra-cranial abscess. Good recovery was ultimately made, but at no time was there any improvement of the hearing to compensate in the least for the suffering. While the severe symptoms might possibly be ascribed to an influenza attack, it is much more probable that the incus, which had been displaced upward, clogged the exit of the antrum and induced the empyema, thus furnishing a strong indication for the removal of the incus in any such operation, which even then may be followed by negative or unfortunate results.

CASE OF EXOSTOSIS OF EXTERNAL AUDITORY MEATUS,

by Dr. D. B. St. John Roosa, of New York.

The patient, a woman aged forty-six, had had trouble for two years with impairment of hearing and tinnitus in right ear and pain in both ears at times. Examination showed the external auditory canal to be almost completely closed by a bony growth at the junction of the osseous and cartilaginous portion. She could hear the watch only on contact. The mass sprang from the posterior wall and left a small space between it and the anterior wall. On operation, it proved to be a very thin plate of bone, and was removed by the chisel without difficulty. The patient did well, and the hearing distance for the watch went up from contact to $\frac{12}{40}$.

In the discussion which followed:

Dr. C. J. Blake, of Boston, stated that in two different families he had seen multiple exostoses occurring in three generations, the grandfather, father and son.

Dr. R. A. Reeve, of Toronto, reported a case of exostosis of the meatus in which the special indication for operation was that the growth had become so large as to press upon the tissues of the opposite wall of the canal, causing intense suffering.

Dr. E. E. Holt, of Portland, Me., exhibited an ear bitten off by a horse, and made a brief report of the case.

Dr. C. J. Blake, of Boston, exhibited the Plans for the New Aural Building of the Massachusetts Charitable Eye and Ear Infirmary.

EXECUTIVE SESSION.

The following officers were elected: President, Dr. Gorham Bacon, New York; Vice-President, Dr. Huntington Richards, Des Moines; Secretary and Treasurer, Dr. J. J. B. Vermyne, New Bedford, Mass.; Member of Executive Committee of Congress of American Physicians and Surgeons, Dr. Wm. H. Carmalt, New Haven; Alternate, Dr. F. B. Loring, Washington.

The following were elected to membership: Drs. J. Elliot Colburn and Robert Tilley, of Chicago, Ill.; Dr. B. F. Milliken, of Cleveland, O.

Keeley versus Medical Periodicals.— Dr. Keeley, of bichloride-of-gold fame has brought libel actions against the *Lancet* and the *Medical Press and Circular*, on account of different articles which have appeared in their columns.

Russian Bath. — In view of the well-known antibathing proclivities of the Russian immigrants who are thronging to our shores, the query suggests itself as to how the "Russian bath" originated.

Recent Literature.

On the Ligation of the Great Arteries in Continuity. With observations on the Nature, Progress and Treatment of Aneurism. By Charles A. Ballance, Assistant Surgeon, St. Thomas's Hospital, and Walter Edmunds, Resident Medical Officer, St. Thomas's Home. London and New York: Macmillan & Co. 1891.

So much has been written upon the subject of the changes seen in blood-vessels after ligature, that further contributions at the present time may seem superfluous; yet the writers of this elaborate work have succeeded in selecting a portion of this field of study which demands the thoughtful attention of the practical as well as the scientific surgeon.

According to these writers, the question of hæmorrhage after the ligature of the large arteries has not been settled by antiseptic surgery. Although arteries the size of the femoral can be tied without danger by the methods now in common use, they claim that there is not the same safety when arteries larger than this are ligatured, even though strict asepsis has been preserved. They also undertake to show that the square knot commonly used is not reliable, the first half of the knot becoming frequently loosened before the second half has been tied, and that, in consequence, many arteries are not occluded by the ligature.

Their remedies for these two evils are (1) the application of the ligature in such a way as not to rupture the coats, and (2) the employment of several ligtures, which bring a considerable portion of the walls in apposition, and which are held together by including all the ends in the second half of the knot.

The first portion of the work is devoted to a study of the anatomy of the walls of arteries of different sizes, and to the method of obliteration of certain vessels at the time of birth and as the result of disease.

The following chapters are devoted to a histological study of the changes seen during the process of repair. The work on the conduct and fate of the corpuscles is conducted after the methods of Zeigler, and goes to show that the process of repair, as is now generally conceded, is carried on chiefly by the plasma cells rather than by the leucocytes. Their observations were confined chiefly to Ziegler's chamber experiments rather than to the study of the changes seen in the arterial wall. These changes are followed principally during the first days of the process of repair. The observations upon the later stages of repair, when differentiation of scar tissue is taking place, are wanting. It is true that sections of the larger arteries were studied in the second month, but the final changes, which terminate in a permanent cicatrix, do not occur in vessels the size of the carotid of a horse, for six months, and even longer. There are very beautiful specimens of the carotid of a horse (tied by their method) 161 days after ligature, but we fail to find a detailed study of the histological changes. The coarse appearances of these specimens suggest strongly that the inevitable absorption of the coats of the artery is taking place. and that the old walls are being replaced by cicatricial tissue, and consequently that the two portions of the vessel are finally separated from one another just as surely as when the ligature has cut them in the beginning. We would have preferred to see a microscopical examination of the tissues at this period of the process of repair rather than at the stage when tissue changes are taking place that have received ample attention from other sources.

In regard to the formation of the thrombus, the authors have made some valuable experiments to show that aseptic blood will coagulate. They bear ample testimony to the fact that a thrombus will form in vessels to which the ligature has been applied aseptically.

The clot is gradually absorbed, according to these authors, by the permeation through it of a ferment thrown off by the surrounding plasma-corpuscles.

Many of the changes which the clot may undergo have been carefully studied.

The "diaphragm formation" in an artery is a condition called attention to, which is due to a partial giving way of the first half of the ligature before the second half has been tied. The later changes in the thrombus, as the cicatricial tissue is finally substituted for it, are not described.

The question of the choice of material for ligatures is one very carefully considered. They conclude that, as the outer coat and sheath of an artery consist chiefly of white connective-tissue, the most appropriate ligature will be of this material, that is to say, should be either tendon or peritoneal ligature. The latter was prepared from the parietal peritoneum of an ox. It was stretched out, dried, cut into strips, and twisted into ligatures, which are prepared in chromic and carbolic acids. Boiled floss silk was also found a reliable ligature.

Great stress is laid upon the choice of the knot. The ordinary square knot is rejected, as the first half often fails to hold the loop tight while the second half is being tied. Several museum specimens are shown to illustrate this point. The surgical knot is also found ineffectual; it may fail to close the lumen of the vessel.

The knot which the authors recommend is composed of two ligatures, on each of which the first half of a square knot is made separately; each is tightened separately, so that the loop lies in contact with the vessel without constricting it. The two ends on one side are then taken together in one hand, and the two ends on the other side in the other hand, to constrict the vessel sufficiently to occlude it. The simplest method of completing the knot is to treat the two ends in each hand as a single thread, and to tie as if completing a single reef knot. This they call a *stay knot.*

It is necessary in using this knot not to make any mistake as to which side the ends belong to; all the ends on each side should be clamped with a pair of forceps. The stay knot may be composed of three or even more ligatures.

The authors concede that this somewhat complicated ligature is not necessary on small arteries or on those even as large as the femoral; but they believe that the rupture of the coats of vessels larger than this exposes the patient to the dangers of secondary hæmorrhage.

We must not omit to mention an interesting chapter on the changes in aneurism after ligature.

In regard to the question of the rupture of the arterial walls, it is well to remember, first, that smaller vessels may be ligatured so lightly as not to obliterate entirely their lumen, and yet subsequent examination will show that a portion of the inner coats may have been ruptured. The pleating of the inner walls causes a bruising of the more prominent portions of the folds. On the other hand, an examination of large vessels, the size of the femoral and upward, will show that the strong inner coats are frequently uninjured by the ligature. As a matter of fact, surgeons do not make it a point to rupture the coats, but merely to tie tight enough to feel the ligature upon the walls of the vessel. The impropriety of cutting through all but the adventitia of a vessel the size of the subclavian or the innominate would, we presume, be conceded by every surgeon. Special care should be taken, of course, in cases where the arterial walls are softened by disease, for here we may have aneurisms even if hæmorrhage be avoided.

Perhaps the most valuable point brought out by these investigators is the danger of failure to occlude the lumen of the vessel by the slipping of the first half of the knot. Many of the valuable specimens, with which the great resources of the London collections have enabled them to illustrate this point, seem to show that this mishap occurs not infrequently; but whether the knot which they propose will stand the test of practice is a question which time only will show. The attempt to apply the ligature lightly may even add to the frequency of this undesirable sequel.

Too much praise cannot be given to Messrs. Ballance and Edmunds for the thoroughness with which they have worked out the various points in which they were interested, and for the beauty and abundance of their illustrations. Their monograph, in this respect, is a model of its kind. As to the questions they have raised, we can only say that work such as theirs demands the respectful attention of every surgeon.

Clinique des Maladies du Systéme Nerveux. M. le Professor Charcot. Tome I, 8vo, pp. iii, 468. Avec 47 figures et 3 planches. Paris: Aux bureaux du Progrès Médical. 1892.

The present volume is the first of a projected series which is to be based upon observations made at La Salpêtrière under the direction of Professor Charcot, and embraces lectures by the professor, memoirs, notes and observations which have appeared during the years 1889–1891, edited by M. Guinon, chief of the clinic. Beside lectures, we have various articles by different pupils of Charcot. The work is, therefore, by various hands, and follows no definite plan. Most of the articles have already appeared in different journals, and some of them have been referred to from time to time in these columns. The articles include the lectures on Morvan's disease, which first called the attention of the medical world to this rare and obscure affection, studies of various cases of hysteria, diabetic paralysis, cerebral syphilis, ophthalmoplegia externa and ophthalmoplegic migraine, amyotrophic popliteal paralysis in sciatica, etc. Although not strictly new it is, nevertheless, a valuable collection of clinical studies of some of the rarer and less known forms of nervous disease, described with the clearness and brilliancy so characteristic of everything written by Charcot.

The International Medical Annual and Practitioner's Index for 1892. New York: E. B. Treat.

The tenth edition of this well-known annual presents a *résumé* of the most important medical literature of the previous year arranged in a convenient alphabetical order. A book of this size covering such a wide field can scarcely do more than hint at the numerous articles to which it refers; but, especially in connection with previous issues, it forms a ready book of reference.

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CHOLERA AND QUARANTINE.

WHILE nothing new was brought out in the discussion of the cholera question at the meeting of the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society on September 21st, reported in this issue of the JOURNAL, the discussion was interesting as showing the lack of many of the essentials of a modern sanitary station in one of the best protected ports of the country. Efforts are now making for the relief of these deficiences with the prospect that the quarantine station will soon be placed in satisfactory condition.

But it may well be asked what would happen to a cholera-laden vessel in some of the smaller ports of this State or in some of the larger ports to the north of Massachusetts. If the terms of the President's proclamation are to be obeyed in these smaller places, we should have the same disgraceful condition of things that has prevailed in New York; with the excuse, however, that the needs of a modern sanitary station are really beyond the resources of the smaller ports.

In the present anomalous condition of this question of quarantine with the spectacle of an entire failure at the largest port of the country to carry out a humane system of detention and the appearance of certain cases of cholera in New York, it is a satisfaction to consider for a moment what has been accomplished with very inferior resources at the mouth of the Mississippi.

Dr. Joseph Holt, while chairman of the State Board of Health, inaugurated below New Orleans, a station for sanitary observation and disinfection. The city of New Orleans and the country higher up the river have enjoyed almost complete immunity from yellow fever since the establishment of this station and the burden upon commerce has at no time been severe.

The result has been quite constantly observed to follow the establishment of very stringent measures of quarantine; the people of the district for which protection is sought by this device, will undoubtedly neglect other sanitary measures which are available during the prevalence of contagious diseases.

In England, where quarantine has practically no existence, protection for the people from the various pestilences is found in intelligent and vigilant sanitary oversight. A very marked evidence of the value of these sanitary measures is shown in the case of a disease which has many features of close resemblance with cholera, that is, typhoid fever. The drinking-water of London comes from polluted sources, but it is so efficiently filtered, that the typhoid fever death-rate of the people of the largest city of the world is one of the smallest that obtains in a civilized community. Cholera and typhoid fever are eminently preventable diseases, and should be, as they can be, controlled by a cleanliness scientifically applied. The material that transmits the disease cannot be detected by any of the unaided senses and must therefore be dealt with by elaborate processes of disinfection.

It is not a matter of the greatest importance then that one or two cases of cholera should get into a well-protected community, but it is of the highest concern that the city or village should have a water-supply amply protected against contamination by the excreta of the sick, and should also have in readiness all the apparatus for the prompt isolation of the sick and the complete disinfection of infected and infective materials. With the exception of a few cities which still have water-supplies drawn from polluted rivers, it is believed that the State as a whole is in far better sanitary condition than ever before, and that cholera if introduced is not likely to become widely prevalent.

The statement now made that the cases of cholera in New York City were directly or indirectly the result of contagion introduced by passengers of the *Gellert*, which sailed from Hamburg on August 14th, and was allowed to land her passengers at a pier in the city, is, if true, another striking proof of the untrustworthiness of present quarantine methods.

HAS CHOLERA BECOME NATURALIZED IN EUROPE?

DURING the past season a severe and fatal epidemic strikingly resembling Asiatic cholera has been raging in the suburbs of Paris, and numerous cases have been reported at Puteaux, at Neuilly, at Courberosé. Authorities have pronounced this epidemic to be cholera nostras, although M. Peter early in the summer declared that the disease, as far as it had come under his observation, was too much like real cholera to be anything else, and also stated that the comma bacillus had been found by one of his pupils in the dejections of one of the patients. Charles Talamon, in the *Médicine Moderne*, takes up the subject in a recent issue of that journal, and contends that the epidemic at Aubervilliers is unquestionably cholera, and suggests evidence tending to show that the disease has become naturalized in Europe.

He affirms that the Aubervilliers' disease, whatever it is, originated on the banks of the Seine; in fact, the circumstances of each individual case exclude the hypothesis of an importation of germs. Nor does the sickness differ in any respect from similar epidemics which have prevailed during the hot season in the suburbs of Paris every year for the past ten years, and which have been attributed to the bad quality of the drinking-water and to the sewerage. Although there has been much dispute over the matter, it is affirmed that in the Aubervilliers' sickness, the bacteriological examination and cultures have shown the presence, in abundance, of the comma bacillus.

As an example of local cholera recognized bacteriologically as true Asiatic cholera, the fact of the epidemic of the two villages of Gousenheim and Fintheim, near Mayence, is no less significant. In September and October, 1886, there were in these two villages nineteen cases of cholera, fourteen of which were fatal. The diagnosis made by the physicians was cholera nostras. The disease did not spread beyond these two villages; it did not reach Mayence which is quite near, and previously Germany had had indemnity from the epidemic of 1884. Nevertheless, Hueppe and Gaffky demonstrated the existence in the stools and intestines of the patients of the comma bacillus, which they were able to isolate and cultivate.

Similar local and singularly fatal epidemics have prevailed for successive years in Valencia, a Spanish sea-port province "eminently favorable for the conservation of cholera germs." Moreover, before anything was known about Koch's microbe, the possibility of the conservation and revivescence of cholera germs in the soil of Europe without new importation from Asia was attested by the two epidemics of 1869–74 and of 1852–55. The epidemic of 1869 commenced in Russia in the government of Kiev; and in two villages of this government, there was in 1868 a little epidemic of local cholera, which, according to Lenz and the Russian physicians, could only be explained by the persistence of the germs of the great epidemic of 1865. Likewise, the epidemic of 1852 is hard to refer to as an importation from India. It appeared first in Silesia where were conserved certain foci of the epidemic of 1846, and thence slowly invaded, by successive stages Poland, the shores of the Baltic and the North Sea, to reach Paris as late as November, 1853.

Talamon remarks that the idea of the revivescence of cholera-germs, and of the tendency of Asiatic cholera to take root and become endemic in Europe is not new, nor is there anything subversive about it. Is it not a fact that cholera, originating on the banks of the Ganges, has ended in becoming acclimated in the countries bordering on India. Has it not, to a certain extent, long been endemic and *nostras* in all Indo-China, at Tonquin, in Annam, and even in Japan? Does it not manifest in permanence its presence by sporadic cases, and in spring and fall by recrudescences more or less appalling? The physicians of those regions have even remarked that real epidemics occur at regular intervals of about ten years. Portions of Europe, according to Talamon, are fast realizing the same condition of morbicity: are becoming the breeding grounds of the cholera contagion. It must, he says, be admitted that the great invasion of 1830 disseminated all over Europe the germs of Indian cholera, the virulence of which has been renewed and promoted by each successive invasion. Endemic centres have thus been created in regions where the soil offers especially favorable conditions for the conservation of the cholera bacilli, centres from which is furnished each hot season, an ever-increasing harvest of cases of "choleriform diarrhœa," or "cholera nostras," and which bacteriological investigation will, he believes, henceforth prove to be genuine Indian cholera, in accordance with the findings in numerous instances this year where the test has been applied.

Talamon does not think that this perspective should occasion great alarm. "It is not, of course, comforting to think that we have at our doors a centre of naturalized Indian cholera which, under certain conditions in which atmospheric influences seem to play the principal part, may become the origin of an epidemic, but we should remember that the disease as such has probably long existed, and that while recognizing the specific identity of the two choleras, we do not lose sight of the fact that this naturalized cholera, in the ordinary conditions of our climate, is of sporadic nature, with but feeble tendency to diffusion."

AMERICAN CHILDHOOD.

THE disadvantages under which children, especially in our cities, are placed, in being surrounded by artificial instead of natural conditions, are discussed in a recent paper by Dr. H. L. Taylor.[1] The city children get too little light and air, do not take enough of the right kind of exercise, are often overfed or underfed, or pushed or hampered too much in their studies, and especially in their emotions. There is a precocity in knowledge of people and social relations, darkest ignorance with regard to most natural objects and processes. In diet the city-fed child often fares better than the country one, but in regard to fresh air he is not nearly so fortunate, and as he gets older the difficulty is increased. The city child is hampered in his movements, and at the same time subject to streams of auditory, visual and other impressions in unending succession. His co-ordination is less perfect, although his wits are brighter than those of the country child. The city child loses much in not obtaining an early knowledge of nature. A child to grow up naturally should have a fair share of wholesome neglect and judicious exposure. A child delights to make himself useful, and it is cruelty to deprive him of this pleasure and stimulus. A boy is better for having a carpenter's bench, and a girl for doing a portion of the housework. The physician is often hampered because his patient has not acquired the art of obedience, or because he cannot tolerate a tongue-depressor, or swallow a pill, or be left alone, or sit still, or take in certain classes of facts or ideas. These and similar peculiarities can usually be prevented with a little care, or overcome by proper training. They are often the result of carelessness or over-indulgence. Children of the poor in our cities fare better in some respects than those of the well-to-do, owing largely to their greater liberty. The author believes that the physique of children now growing up is not on the whole satisfactory, and that it is a difficult matter to bring up wholesome, hardy children in New York. It is true that the advantages are not all on the side of country life; but in most respects, for children, country life is more favorable.

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[1] Popular Science Monthly, October.

MEDICAL NOTES.

Cholera. — During the past week the epidemic of cholera in Europe has materially declined. On Saturday but seventy new cases were reported in Hamburg. The official figures in that city give the total number of cases as 17,157 with 7,339 deaths. In other cities only an occasional case is reported. On the same day the authorities declared the port of New York free from cholera, with no cases at quarantine nor on the twenty-four detained steamers. Several days later, however, a few more cases were reported on the steamer *Bohemia.*

National Quarantine. — In the large amount which has been written during the past few weeks on the subjects of epidemic diseases and quarantine, both in medical and non-medical periodicals, it has been recommended repeatedly in different forms that the quarantine of the country be given in charge of the federal government. It seems very possible that the threatening invasion of cholera may result in this desirable reform.

Bacteriological Diagnosis of Cholera. — A demonstration on the bacteriological diagnosis of cholera was lately given before the Berlin Medical Society by Dr. R. Pfeiffer, who urged the systematic microscopical examination of the dejecta, which in certain cases is quite sufficient to establish the diagnosis, when the comma bacilli occur in an almost pure culture and form characteristic masses in flakes of mucus. In cases of doubt gelatine plate cultures must be made to decide the question. The methods thereby necessary to absolutely determine diagnosis occupy from twenty-four to thirty-six hours.

The American Dermatological Association, at its annual meeting held in New London, Conn., on September 13, 14 and 15, 1892, elected the following officers: President, Dr. George H. Fox, of New York; Vice-President, Dr. H. W. Stelwagon, of Philadelphia; Secretary and Treasurer, Dr. Geo. Thos. Jackson, of New York; Member-at-large of the Council, Dr. J. C. White, of Boston. The Association adjourned to meet in Milwaukee on the first Tuesday of September, 1893.

NEW YORK.

Cholera. — Up to the present time eight fatal cases of cholera have been recorded in the city. Dr. T. Mitchell Prudden, who a short time since resigned his position as one of the pathologists to the Board of Health, has been re-appointed, and is now associated with Drs. Biggs, Dunham, and H. P. Loomis in the bacteriological work of the Department. The Advisory Committee of Physicians appointed by the Chamber of Commerce has made an elaborate report in regard to disinfection and quarantine, which has been approved by the Special Committee on Quarantine of the Chamber of Commerce, and copies of it have been sent to Governor Flower, Health Officer Jenkins, and Secretary of the Treasury, Foster. It concludes as follows: "We wish to remind your committee, and to suggest to those who are disposed to indulge in indiscriminate criticism of the management of the quarantine affairs at the port of New York during the past few days that the emergency has been one of almost unparalleled magnitude and the complication of circumstances of a most perplexing character. We believe that the disinfection of a ship in which, during the voyage, a case of Asiatic cholera has occurred, cannot be with certainty accomplished while its passengers are on board. We hold the opinion that the attempt to disinfect a ship on which a case of Asiatic cholera has occurred without the use of modern methods and modern appliances for this purpose, and under the direction of persons acquainted with their use, is not only liable to lead to uncertain results, but to such prolonged detention of the ship as is unjust to others."

Cholera and Quarantine were discussed at a meeting of the Section on Public Health of the Academy of Medicine, held September 19th. Dr. S. T. Armstrong read a paper on "The Present Status of Quarantine Laws, with their Adminstration." Dr. Alfred L. Carroll spoke on the question, "How long shall a Cholera-infected Vessel be detained at Quarantine?" He criticised the treatment of the *Normannia's* cabin passengers, and in the course of his remarks said: "When, through lack of cleanliness, or carelessness, a ship reaches port with cholera on board, that vessel should be kept in strict and safe quarantine, but the passengers should be immediately removed, the sick persons taken to a hospital, and the well persons sent where they will be in no danger of contracting the disease. . . . With the passengers properly removed from the infected ship, there is no danger of the disease spreading from that source, for the vessel can then be thoroughly and properly disinfected and washed out." Dr. George M. Sternburg, of the U. S. Navy, read a paper on "The Biological Characters of the Cholera Spirillum and Disinfection in Cholera." In it he expressed the opinion that two days of exposure in the sunlight of ordinary articles of wearing apparel will dispose of the spirillum, and that the general statement that there need be no disinfecting of merchandise and mail matter might be safely and truthfully made. Dr. J. H. Raymond, Health Commissioner of Brooklyn, spoke on "General Disinfection," and Dr. Stephen Smith on "Local Measures of Protection and Relief." He urged the necessity of watching with systematic vigilance for the appearance of the premonitory symptoms of cholera, especially among the tenement-house population, and advocated a house-to-house visitation with a system of gratuitous medical treatment at the homes of the poor. Dr. A. Jacobi made some remarks on "Practitioner and Patient." He thought that physicians should study carefully the regulations of the Board of Health and see that their patients lived up to them. He believed that all water should be boiled which was used either for drinking or bathing purposes, and expressed the opinion that but for the precautions adopted the city of New York would be full of cholera to-day. In conclusion he said: "We need more hospitals. Cholera is but an occasional visitor, but we have typhoid fever and scarlet fever with us constantly. We ought to have half-a-dozen hospitals like the Willard Parker Hospital. There is great necessity for some place for strangers to go to who are taken suddenly ill in town. The rich people who are sick in the hotels, invariably leave the traces of disease in the drapery or furniture of their rooms. I have known personally of successive cases of scarlet fever and diphtheria in the same handsome suites of rooms in New York hotels." During the evening Dr. E. K. Dunham exhibited specimens of bacilli from each of the fatal cases of cholera in New York, and also cultures of the bacilli made at the Carnegie Laboratory.

HEALTH OF THE CITY. — The general health of the city continues remarkably good, the mortality recorded each week being considerably below the average of the corresponding weeks for the past five years. The public is also to be congratulated on the excellent condition of the Croton water, the most recent analyses showing an entire absence of deleterious organic matters. A report received September 23d from the keeper of the upper waters of the aqueduct states that there is not now a single nuisance existing in the vicinity of Croton Lake, and that a detail of seven men patrol the shores of the lake to prevent contamination.

Miscellany.

POPULAR IMPRESSIONS OF CHOLERA.

IT is not unlikely that the present invasion of cholera may be of much practical use from an educational point of view. Health authorities are polishing up their weapons of defence. Physicians are flooded with cholera literature, and the laity revel in details of how to prevent and how to treat the disease, and what it looks like when it arrives. Some time ago one of our daily papers published a drawing of a group of cholera bacilli. This was copied by other papers until the plate was so used up that the group of bacilli looked more like an earthworm. Then the enterprising editor had it renovated, and embellished with a vicious-looking head. The result was a specimen of micro-organism which must have impressed itself upon many persons' minds so deeply that they have been daily expecting to see one come crawling up from quarantine. To prevent cholera, a host of prescriptions are laid before the public. The recommendations of the boards of health are not of the kind which appeal to a large part of them, keeping clean and avoiding unwholesome things are not nearly so satisfactory as swallowing pellets, and wearing copper medals around the neck, or as filling the stockings every day with sulphur.

PREVENTIVE MEASURES FOR THE INDIVIDUAL DURING THE PREVALENCE OF CHOLERA.

DR. E. O. SHAKESPEARE,[1] in a communication before the Philadelphia County Medical Society, expresses the opinion that Asiatic cholera, highly infectious and frightfully mortal as it usually is, when it obtains a foothold among ignorance, poverty and squalor, is, fortunately, of all the dangerous epidemic diseases, the most easily and certainly avoided by the individual, if only the proper precautions be promptly and scrupulously observed. With these precautions the cholera victims may be lived with, handled, nursed and treated with absolute impunity. The cholera-poison enters through the stomach only.

The importance of immediate action to protect the community whenever a case of suspected Asiatic cholera is seen, cannot be too strongly insisted upon. Unless the investigations of the German commission have brought to light, in the presence of the cholera-bacillus, a sure and unmistakable diagnostic sign of Asiatic cholera which can be quickly distinguished, in spite of the care and valuable knowledge of the disease gained by the study of former epidemics, we do not at present know how to recognize genuine, true Asiatic cholera, in time to safely guard people against its deadly power. Many of the epidemics which have occurred in Europe in recent years, are due to this fact. It is by means of soiled clothing and personal effects, upon which the evacuations from the stomach and bowels is preserved in a more or less moist condition, that the infectious principle is usually conveyed long distances.

The contamination of water-courses and small streams by vomit or dejecta is perhaps the most frequent, and certainly the most rapid, means of producing a sudden and widely extended outbreak of Asiatic cholera.

The comma-bacillus of Koch is able to live for a considerable time in water, and is often capable of enormous multiplication therein, especially if the water contain a certain amount of organic or vegetable material. The use of such water is perhaps the most frequent mode of introduction of the disease. Milk is often highly dangerous on account of the common practice of watering it. Experience has abundantly proved two laws which have an important bearing upon the spread of cholera. The tendency to infection varies exceedingly among individuals, and is with the majority small. Disturbed conditions of the digestive apparatus greatly increase the susceptibility of an individual, and render him far more liable to an attack after exposure to the infection. The normal acid juices of the stomach are capable of destroying the comma-bacillus; hence this safegaurd and the alkaline intestinal tract must be carefully guarded.

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[1] Medical News, September 17th.

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RESOLUTIONS ON THE DEATH OF DR. GEORGE BROWN.

Resolutions passed by the New England Psychological Society:

Whereas, In the providence of God, our friend and associate, Dr. George Brown, of Barre, has been called away from us after a long and well spent life,

Resolved, That we, members of this Society, wish to express our appreciation of his courteous and thoughtful manner, his kindly and sympathetic nature, and his sincere Christian character — qualities which at once won the esteem and confidence of all who knew him.

Resolved, That as a Society we place on record our appreciation of his life-long devotion to his chosen work of educating and caring for the feeble-minded — a specialty in which he was a pioneer, and in which he achieved distinguished success, and where, by reason of his superior attainments, rare personal qualifications, and steadfastness of purpose, he was able to do much toward compelling public recognition of the duty of society to this unfortunate class.

Resolved, That we tender to the wife and family of our departed brother our heartfelt sympathy in their bereavement.

Resolved, That a copy of these Resolutions be sent to the family of Dr. Brown, that they be entered upon the records of this Society, and sent for publication to the *Boston Medical and Surgical Journal.*

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THERAPEUTIC NOTES.

Burns. — Von Bardeleben[1] recommends for burns of moderate severity the use of a powder of equal parts of subnitrate of bismuth and powdered starch. The burns are thoroughly cleansed, then washed with a three per cent. carbolic, or three per cent. salicylic acid solution. The blisters that are present are then removed under antiseptic precautions and the above powder then thoroughly applied. This is covered with layers of cotton, which are removed as they become saturated with the secretions, except the one next the wound. This dressing may remain undisturbed for one to two weeks or even a month. In most cases, pain disappears a few hours after applying the bismuth. In burns of the face the writer uses the powder with no other dressing.

Poisoning by Antifebrin. — During the last influenza epidemic in Sweden, a great many cases of poisoning by antifebrin were observed. This was due to a very prevalent, careless use of the drug without a doctor's prescription. Although somewhat severe symptoms were observed in many cases, all ended in recovery. In one case, reported by Dr. W. Warfringe,[2] a man aged thirty-five took two drachms of antifebrin. The principal symptoms observed in the order of their occurrence were a sense of fatigue and a feeling of weight in the head, coming on in five minutes; soon followed by a sensation of black and red clouds before the eyes; then sleep, from which the patient was easily aroused. On attempting to rise, he appeared like one drunk, fell down and became unconscious. This was soon followed by a comatose condition, cyanosis, relaxed muscles, cold hands and feet, lowering of temperature, respiration and pulse. These latter improved after hypodermic injections of camphor and ether, but the comatose state continued for sixteen hours. The symptoms on the next day were frontal headache and cyanosis. The urine was clear, deep-colored, and contained much indican, otherwise normal. Some cyanosis remained on the third day, and the urine still contained an excess of indican. Another case was that of a girl of fifteen, who took nearly half an ounce of antifebrin. In a quarter of an hour her whole body became hot and perspiring. Vertigo, impairment of sight, and unconsciousness followed. This last condition continued for seven hours and a half. There was vomiting. Coma was not so deep as in the other case; cyanosis was well marked; pupils slightly contracted; temperature slightly subnormal. This patient recovered more speedily than the other, probably because the stomach was washed out within an hour after the antifebrin was taken. Similar, through not so severe, symptoms have been observed in other cases; the doses taken being, in one case, two scruples on two consecutive days, in two others two teaspoonfuls each, in one dose.

The Internal Use and Dosage of Lysol. — Dr. Eric Vondergoltz, in the *Medical Record* for September 24th, says he has obtained wonderful results from the use of lysol in dysentery and in cholera nostras. He uses it in doses of 3.0 to 10.0 grammes in a one per cent. solution as clysmata. The administration is always combined with that of a stimulant. He gives notes of its use in three cases of scarlet fever in children of fourteen months, five years and seven years of age, respectively. It was given in sherry wine in the proportion of one part lysol to two parts of sherry. Of this mixture doses of three, five and ten drops, for the three children respectively, were given in milk four times a day. There was a marked decrease in temperature in these cases. The use of lysol must not be abandoned until the temperature has been normal a few days. In formulating a treatment for Asiatic cholera with lysol, the writer would advise: (1) To give immediately a stimulant mixed with lysol, 2.5 grammes; (2) To wash out the intestines thoroughly with a one per cent. solution of lysol in warm water. This should be repeated every two hours until a change is seen.

METEOROLOGICAL RECORD,

For the week ending September 17, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...11	30.40	55	65	46	94	89	92	N.W.	S.E.	3	10	G.	C.	
M..12	30.28	60	68	52	88	78	83	S.	S.	1	12	G.	C.	
T..13	30.14	63	74	53	88	87	87	S.W.	S.	4	10	F.	C.	
W..14	29.82	67	72	62	90	95	92	S.	S.	24	13	R.	R.	.54
T..15	29.88	67	74	61	72	65	68	W.	W.	10	11	C.	C.	.75
F..16	30.08	65	74	55	71	65	68	S.W.	W.	12	8	C.	C.	
S..17	30.30	61	70	52	66	61	64	W.	S.W.	4	7	F.	C.	
☞	30.13	63	71	54	81	77	79			8	10			.184

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

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[1] Deutsche Med. Woch., No. 23.

[2] Lancet, September 10, 1892.

RECORD OF MORTALITY

For the Week ending Saturday, September 17, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	758	332	21.71	11.70	12.22	4.03	1.17
Chicago . . .	1,250,000	455	214	18.26	6.82	2.42	6.16	7.70
Philadelphia .	1,092,168	384	156	22.14	13.01	9.72	7.56	1.62
Brooklyn . .	955,333	—	—	—	—	—	—	—
St. Louis . . .	477,873	209	75	23.50	7.52	16.57	5.17	2.82
Boston . . .	469,645	208	87	19.20	14.40	12.00	3.84	.96
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	79	38	18.90	8.82	8.82	2.52	7.56
Cleveland . .	281,353	90	54	32.19	4.44	26.44	5.55	—
Pittsburg . .	255,000	112	47	40.05	5.34	13.35	12.46	8.90
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	105	38	23.75	8.55	11.40	1.90	5.70
Nashville . .	87,754	22	7	13.66	13.66	4.55	4.55	4.55
Charleston . .	56,048	45	20	22.22	6.66	6.66	—	2.22
Portland . . .	40,000	14	4	28.56	7.14	7.15	7.14	14.28
Worcester . .	92,313	31	12	25.84	—	16.15	19.69	—
Lowell . . .	82,455	49	31	20.40	4.08	18.36	—	—
Fall River . .	82,128	38	9	5.26	18.41	—	2.63	—
Cambridge . .	74,644	37	13	18.90	16.20	18.92	—	—
Lynn	60,809	24	14	37.44	8.32	24.96	4.16	—
Springfield . .	47,052	11	1	27.27	36.36	9.09	—	18.18
Lawrence . .	45,910	—	—	—	—	—	—	—
New Bedford .	44,947	—	—	—	—	—	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	6	4	—	—	—	—	—
Salem	31,495	8	2	25.00	—	—	12.50	12.50
Haverhill . .	30,065	11	6	27.27	—	18.18	—	—
Chelsea . . .	29,479	15	5	6.66	33.33	6.66	—	—
Malden . . .	27,252	9	4	22.22	22.22	22.22	—	—
Newton . . .	26,498	5	0	—	20.00	—	—	—
Taunton . . .	26,464	5	2	20.00	—	20.00	—	—
Gloucester . .	26,008	8	5	12.50	—	—	—	—
Fitchburg . .	25,444	11	4	—	—	—	—	—
Waltham . .	20,942	3	0	—	—	—	—	—
Quincy . . .	18,669	3	2	66.66	—	66.66	—	—
Pittsfield . .	18,294	4	4	75.00	—	75.00	—	—
Northampton .	15,684	4	0	—	25.00	—	—	—
Everett . . .	14,745	1	0	—	—	—	—	—
Newburyport .	14,031	6	0	16.66	—	16.66	—	—
Amesbury . .	13,561	—	—	—	—	—	—	—

Deaths reported 2,783: under five years of age 1,197; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 613, consumption 272, acute lung diseases 232, diarrhœal diseases 302, diphtheria and croup 133, typhoid fever 88, whooping-cough 27, scarlet fever 19, malarial fever 18, cerebro-spinal meningitis 11, erysipelas 6, cholera 4, measles 3, small-pox 2.

From whooping-cough New York 7, Chicago 6, Philadelphia 5, Boston 3, Pittsburgh 2, Cincinnati, Lowell, Fall River and Haverhill 1 each. From scarlet fever New York 5, Chicago, Philadelphia and Pittsburgh 4 each, St. Louis and Boston 1 each. From malarial fever Charleston 6, New York 5, Washington 4, Philadelphia 2, Boston 1. From cerebro-spinal meningitis New York 6, Lynn 2, Washington, Brockton and Gloucester 1 each. From erysipelas New York and Chicago 2 each, Philadelphia and St. Louis 1 each. From cholera New York 4. From small-pox New York 2.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 24, 1892.

H. P. Harvey, surgeon, detached from "St. Louis" and granted six months' sick leave.

H. N. T Harris, passed assistant surgeon, detached from Navy Yard, League Island, and to Receiving-ship "St. Louis."

C. F. Stokes, passed assistant surgeon, ordered to Naval Hospital, Yokohama, Japan.

A. C. H. Russell, passed assistant surgeon, detached from Naval Hospital, Yokohama, Japan, and ordered to return home.

SOCIETY NOTICE.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, October 3d, at 8 o'clock.

Readers: Dr. Wm. P. Bolles, "Accidental Laceration of the Urethra."

Dr. John T. Bowen, "The Recognition and Treatment of Some of the More Common Skin Affections."

John C. Munro, M.D., *Secretary.*

RECENT DEATHS.

Henry Grafton Clark, M.D., M.M.S.S., died in Boston, September 23d, aged eighty-eight years. He graduated from the Bowdoin Medical College in 1834, and in the same year began practice in Boston. He served for several years as surgeon in the Massachusetts General Hospital, and on the school committee. For twenty years he was city physician, during which time the cholera epidemic of 1849 visited the city. His report of this epidemic, and other writings on different epidemic diseases, notably typhus and yellow fever, were widely known.

Sir George H. Macleod, M.D., F.R.S., F.R.C.S., etc., professor of surgery in Glasgow, died August 31st, aged sixty-four years. He began practice in Glasgow in 1856, and became professor of surgery in 1869. He was the author of several papers on different surgical subjects.

BOOKS AND PAMPHLETS RECEIVED.

Colpo-perineorrhaphy. By Edward W. Jenks, M.D., of Detroit. Reprint. 1892.

The Ureteral Catheter. By Howard A. Kelley, M.D., Baltimore, Md. Reprint. 1892.

The Annual Statistics of Manufactures, 1891. Boston: Wright & Potter Printing Co. 1892.

Inoculation as a Preventive of Swine Plague, etc. An Exposure. By Frank S. Billings, M.D.

Transactions of the Texas State Medical Association, Twenty-fourth Annual Session. Galveston: J. W. Burson Co. 1892.

The Effect of Diseases of the Ear upon the General Condition. By William Cheatham, M.D., Louisville, Ky. Reprint. 1892.

Original Research in Relation to Animal Œconomics. A Socialistic Study. By Frank S. Billings, M.D. Reprint. 1891.

Twenty-second Annual Report of the Bureau of Statistics of Labor, March, 1892. Boston: Wright & Potter Printing Co. 1892.

Observations on the General Pathology of Cancer — Especially of the Breast. By W. Roger Williams, F.R.C.S., England. Reprint. 1892.

Concerning the Employment of Light in the Treatment of Disease. By Will F. Arnold, M.D , passed assistant surgeon of the United States Navy. Reprint. 1892.

Annual Lectures delivered before the Alumni Association of the College of Physicians and Surgeons of Baltimore, April 11 and 12, 1892. By Dr. W. E. B. Davis.

Outline of a Plan for an Epileptic Colony. The Treatment of Epilepsy. Progress in the Care and Colonization of Epileptics. By Frederick Peterson, M.D. Reprints. 1892.

The Principles of Theoretical Chemistry. By Ira Remsen, professor of chemistry in the Johns Hopkins University. Fourth edition. Philadelphia: Lea Brothers & Co. 1892.

Clinical Lecture Delivered at the Second Annual Meeting of the Association of Military Surgeons of the United States. By N. Senn, M D., Ph.D., of Chicago. Reprint. 1892.

A Review of Ideality of Medical Science. A Detailed Plan of Reformation of the Practice and Study of Medicine. By Maurice J. Burstein, A.M., M.D., New York. Reprint. 1892.

When Shall We Trephine in Fractures of the Skull? Report of an Operation for Removal of the Gasserian Ganglion. By Emory Lanphear, M.D., Ph.D., Kansas City, Mo. Reprints. 1892.

The Sixth Annual Report of the Dōshisha Mission Hospital and Training-school for Nurses, Kyōto, Japan. In connection with the Japan Mission of the American Board, for the year ending March 31, 1892.

An Illustrated Encyclopædic Medical Dictionary. By Frank P. Foster, M.D., Editor of the New York Medical Journal; Librarian of the New York Hospital. With the collaboration of others. Vol. iii. New York: D. Appleton & Co. 1892.

Early Symptoms of Hip-disease and Ætiology of Hip-disease. Treatment of Abscess in Hip-disease. Excision of Tubercular Knee-joint. A Case of Incipient Hip-joint Disease. By H. Augustus Wilson, M.D., Philadelphia, Pa. Reprints. 1892.

Rest and Pain. By the late John Hilton, F R.S., F.R.C.S., Surgeon Extraordinary to her Majesty the Queen, etc. Edited by W. H. A. Jacobson, M.A., assistant surgeon to Guy's Hospital, etc. Fifth edition. London: George Bell & Sons. 1892.

A Dictionary of Psychological Medicine; Giving the Definition, Etymology and Synonyms of the Terms used in Medical Psychology, with the Symptoms, Pathology and Treatment of the recognized forms of Mental Disorder, together with the Law of Lunacy in Great Britain and Ireland. Edited by D. Hack Tuke, M.D., LL.D., Examiner in Mental Physiology in the University of London, Co-editor of The Journal of Mental Science, assisted by more than one hundred contributors. Two volumes. Philadelphia: P. Blakiston, Son & Co. 1892.

Original Articles.

THREE CASES OF ACUTE MANIA FROM INHALING CARBON BISULPHIDE.[1]

BY FREDERICK PETERSON, M.D., OF NEW YORK,
Chief of Clinic, Nervous Department, College of Physicians and Surgeons; Pathologist to the New York City Insane Ayslums.

Poisoning by bisulphide of carbon, though of late years an infrequent malady, owing to the precautions taken in most rubber factories to ventilate well the rooms in which this chemical is used, is still met with at times in factories where ventilation is neglected.

Carbon bisulphide, as is well known, is a sort of volatile anæsthetic when inhaled. It also acts as a local anæsthetic when applied to the skin. In those who inhale much of this gas the urine has the characteristic odor. Delpech,[2] who was the earliest and at the same time the most thorough investigator of poisoning by bisulphide of carbon, compared its effects upon the human organism to those of alcohol. It would seem that both the acute and chronic conditions are similar to these stages in alcoholism. The first and most prevalent symptom among rubber factory operatives who handle this poison is intense headache located in the forehead and temples. These headaches, as I am informed by the manager of a rubber factory in this vicinity, are common among rubber workers, even though no further symptoms develop. As the intoxication proceeds, however, giddiness and even actual drunkenness become manifest, the workpeople becoming excitable, talkative and hilarious. Among later chronic manifestations are muscular paresis, due to a multiple neuritis, mental weakening and apathy, amblyopia, tinnitus, formication, anæsthesia of the feet, muscular cramps, occasionally convulsions, at first, increase of sexual appetite, later, impotence in men and sterility in women.

Charcot has of late called attention in his lectures to the numerous hysterical symptoms of this intoxication, and is inclined to look upon most of the manifestations of bisulphide-of-carbon poisoning as, in part, hysterical.

Very rarely there are symptoms of a psychosis. I have been unable to find anywhere in literature, and I have searched very carefully, histories of any cases of acute and well-marked insanity due to the inhalation of bisulphide of carbon. During my service as first assistant physician at the Hudson River State Hospital for the Insane, there came under the observation and charge of Dr. Langdon and myself three cases in succession during one season, all from the same rubber factory not far from New York City. They were all young men from twenty-three to thirty-one years of age and were admitted respectively in the months April, May, and August, 1887. The form of insanity in each was acute mania and all three recovered. The following is an abstract of the main points in the history of each case taken from the hospital records.

Case I. C. S., aged twenty-seven, single, born in Germany, admitted April 25, 1887. Nothing known about the patient by persons bringing him except that he has been in the county asylum for three days. Is silent and refuses to answer any question, whether addressed to him in German or English. One of the physicians certifying to his insanity, says: "Having had him under observation for three days, I have no hesitation to diagnose his case as acute mania. At times will not answer questions put to him, at others, raves incoherently on different disconnected subjects. Is at other times in constant dread that some one will kill him or do him bodily harm. His mind and body are incessantly occupied with something. For instance, he will undress himself entirely naked, lie for a moment in that state upon the floor, and then will get up and dress himself again and repeat this manœuvre over and over again many times." The other physician stated: "He is suffering from an attack of acute mania. Has to be confined in consequence of his violence. Laughs and cries and does not for a moment appear to know what he is about."

His general strength was fair on admission, his pulse about 80 and feeble. All that could be definitely learned was that his insanity had been coming on for two weeks. His maniacal condition continued without abatement until about May 10th. He was noisy, incoherent, violent, destructive of his clothing, and had at times to be fed forcibly with the stomach-tube.

May 13th. Becoming quieter, but in a suspicious and confused state. From this time he gradually became more and more confused and apparently demented. For a time he seemed to have auditory hallucinations.

A note on September 15th, says: "He has become very demented. Extremities blue. Has a phthisical appearance." About November 10th, a change for the better was observed. He began to gain flesh and improve mentally. December 15th he was pronounced convalescent, and two months later found him so much better that he was an industrious helper in the ward. September 15, 1888, he was discharged entirely recovered, the duration of his asylum residence having been about a year and five months.

The cause of the insanity in this patient was not suspected until after the admission of our second case, which I now describe.

Case II. W. J. K., male, aged twenty-three, married, born in New York of Irish parents, admitted May 5, 1887. From himself and from those who brought him it was learned that he came from the same factory as Case I, and that five or six persons working in the same department of the factory had become insane. The patient himself ascribed his mental and nervous condition to the effects of inhaling a mixture of bisulphide of carbon and chloride of sulphur, used in the manufacture of rubber shields for ladies' dresses.

The patient was always strong, active, and bright until he got to this factory. He worked there two months, and left seven weeks before his admission to the asylum, owing to the nervousness and terrible headaches, which all his fellow workmen also suffered from. He is tremulous all over and has a sense of oppression in his chest, which had led him, in spite of his reason, to imagine his lungs were gone; and so peculiar a sensation in his mouth that in spite of himself he sometimes thinks his tongue is gone. His whole body feels as though electricity were continually passing through it. Has flashes of heat all over his body. Has slept well thus far. Told all of the above facts himself, ascribing the whole condition to his inhalation of the carbon-bisulphide mixture. On several occasions the ideas with regard to his tongue and lungs being gone have so overmastered him that he has nearly gone into maniacal excitement. But thus far could be easily recalled to reason and comprehension of his condition and the falsity of his delusions. His appetite is voracious. Feels hungry at every moment. Pulse 64. Tongue furred. Bowels regular. Knee-jerks normal. Very considerable muscular tremor. Has terrible dreams at night that exhaust him. His father states that he remarked an unusual hilarity in his son for a week or so prior to the nervous trouble breaking out, and also a weakness of his memory. Would laugh inordinately in the house without apparent reason. All of the men working in this part of the factory were addicted to the same hilarious conduct.

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[1] Read before the New York Neurological Society, Tuesday, October 4, 1892.

[2] Nouvelles Recherches sur l'Intoxication spéciale, etc., Paris, 1860.

Such was the history given us on admission of the patient.

The following are extracts from the two medical certificates: "He has a delusion that he is suffering from consumption, and is in constant fear of immediate death by suffocation. In his efforts to secure relief he has threatened to drown himself and has attempted to cut his throat. Is afraid to be left alone."

The duration seems to have been about four weeks.

May 6th. Depressed, unhappy, hypochrondriacal. Goes about wringing his hands.

May 9th. Up to to-day rather sleepless, very hypochondriacal, sometimes in a hysterical condition. Tremor marked. Feels as if he were going to become insane, he says; cannot get his breath and feels a constriction about the lungs.

May 13th. Feels a "fever rushing to his head" and as if he were going into a delirium. Has no headache, but a numbness as if he had no head at all, and a feeling in his chest as if he could not catch his breath. His lungs are on examination perfectly normal.

From this time on his condition varied. At times he had delusions that his tongue, lips and lungs were gone, and had a variety of paræsthesiæ affecting all of his viscera, but generally his head. Occasionally he seemed feeble-minded. The sense of suffocation came to him often. By February, 1888, he had improved physically very much, but the mental condition remained about the same. May 10, 1888, he had recovered both mentally and physically and was discharged. He had been an inmate of the asylum one year and five days. I have seen him since, in New York, and he has remained well.

Case III. M. B., male, age thirty-one, married, a Hebrew, born in Austria, admitted August 9, 1887. Worker in the same department of the rubber factory as Cases I and II. Little could be learned about him on admission except that he had been in a very maniacal condition for several days and had taken little or no food. Is very incoherent. Pulse weak and rapid. The medical certificates are to the following effect:

"The patient has acute mania, with periods of great excitement when he is both suicidal and homicidal."

"I have known M. B. for two years past as a sober man. On the nights of the 6th and 7th of August, he was in a condition of great mental excitement, disturbing the neighborhood by loud noises and violent praying."

He remained in a typical maniacal condition till about the middle of August, showing great motor excitement: being noisy, violent, destructive of clothing, filthy in his habits, perfectly incoherent, sleepless except with drugs, and resisting care. At one time dangerous symptoms of exhaustion were present, and it was feared that he would die. After mid-August he made rapid progress both mentally and physically and was discharged recovered September 30, 1887, having been in the asylum less than two months.

In none of these cases was there any hereditary taint. All were young, healthy and strong men, working in the same department of a rubber factory where they were exposed to the fumes of the mixture of CS_2 and S_2Cl_2 commonly used in the preparation of rubber goods. In all it was the first attack. The first and third cases were in such a maniacal condition that the subjective and somatic toxic symptoms could not be studied. The second case illustrates, however, very well some of the peculiarities of bisulphide-of-carbon poisoning: the headaches, the electric paræsthesiæ throughout his body, the sensation of numbness in his tongue and head, the *globus hystericus*, the voracious appetite, the hilarious feeling of the early intoxication, the terrible dreams by night, and the general muscular tremor — all of them pointed out by many authors as characteristic of this species of disorder.

In none of the cases did we discover any neuritis.

I have delayed publishing these cases for some years, thinking that I might hear of other similar ones, or that I might acquire more information from the owners of the factory or from doctors in attendance upon their employees, but it is astonishing what a large amount of ignorance and secretiveness develops among the authorities connected with any factory, when questions arise as to the unhealthful conditions under which the operatives pursue their vocation.

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OCULAR HEADACHES: THEIR CAUSE, CHARACTERISTICS AND TREATMENT.[1]

BY MYLES STANDISH, M.D.,

Ophthalmic Surgeon, Carney Hospital; Assistant Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Instructor in Ophthalmology, Boston Polyclinic.

Ocular headaches come from ocular strain, and ocular strain comes from extraordinary and unnecessary effort being required to enable the eyes to perform their ordinary duties. A normal eye is of such a length antero-posteriorly that parallel rays of light come to a focus upon the retina without any muscular effort, and that diverging rays (those originating within a few feet) can be brought to a focus upon the retina in the same place by increasing the convexity of the lens, that is, by muscular effort.

Now, if an eye is too short antero-posteriorly (hypermetropia), to allow parallel rays of light to come to a focus upon the retina, such an eye would not see in the distance distinctly as long as it used the same methods as a normal eye; but the possessor of such an eye early finds that by use of the muscular apparatus intended to enable the eye to focus for near he can make the lens more convex and thus bring the rays to a focus upon his retina, and so see distinctly in the distance. This he habitually does, and when called upon to look at near objects, adds to the effort which he maintains all the time the amount of effort which a normal eye has to use to see such near object; of course, such an effort is a burden.

If, on the other hand, an eye is too long antero-posteriorly (myopia), the possessor of such an eye cannot use his muscular apparatus to correct the error, and the only method which will enable him to see distinctly, without artificial aid, is to bring the object nearer to his eyes. It is apparent, therefore, that simple hypermetropia may easily be the cause of ocular strain, and simple myopia cannot, and that a person who cannot see well in the distance may not have any ocular strain whatever.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, May 18, 1892.

If, again, the different axes of the eye have different focal distances (astigmatism), so that the curvature of the lens must be muscularly maintained greater in some axes than in others, in order to see distinctly either for distance or near, we have another burden laid upon the muscular apparatus, which is excessively fatiguing if constantly maintained.

That there should come great strain from the use of the eyes is not strange. We have two eyes, which may be unlike, and both of which must see equally distinctly, and look at the same object at the same time. Naturally the great part of ocular strain comes from near work, and consequently a hypermetrope is the one who commonly suffers, and a hypermetrope with different amounts of hypermetropia in the two eyes still more commonly suffers; and if to this is added an astigmatism in either or both eyes, we have the most frequent form of ocular condition which produces headache. It is natural that a myope who places his book in his far point, and reads without exercising his accommodation should be, as a rule, free from ocular headache; and this in practice is found to be the fact.

Ocular headaches may come also from insufficiencies of the ocular muscles; for, for every given amount of accommodation the eyes must converge a proper amount, and if there is a discrepancy between the amount of exertion required to accommodate to a given point and the amount of converge to a given point, ocular strain is the result. Where the accommodation is normal and the correction of the refraction does not do away with the strain, the trouble must lie in the muscles, and they should never be overlooked in such a case.

While it is perfectly true that a large number of headaches are due to errors of refraction; it is also perfectly true that a man may have a very considerable error of refraction and have no headache therefrom. This being the case, there must be something besides the error of refraction necessary to produce an ocular headache, and that something is a neurotic predisposition.

A simile that I have often used to illustrate the method of ocular disturbance is this: Everybody has a certain amount of nervous force which he holds in reserve to resist any strain; and if this nervous resistance to irritation is frittered away by some means at every moment of one's waking hours, when the time comes to fall back upon that reserve supply, it is not there. It is as if the contents of the cistern of our reserve nervous supply were continually being dribbled away, and when the time of need comes it is found empty. In our patient with a neurotic predisposition, the cistern is at its best a very small one.

To understand the characteristics of an ocular headache, let us follow the life-history of the eyes. A child at birth has no accommodative power, in all probability, and only acquires full accommodative power at about three years of age, and it is then in hypermetropes that the large amount of accommodation necessary to see near objects produces an overconvergence in children, and squint is seen for the first time. The large majority of cases of convergent strabismus originate at the time of life at which accommodation is first used. If there is a good deal of hypermetropia, so that it is difficult for the patient at any time to see near objects, usually the headaches will appear in childhood, and will be present during school-term time and absent during long vacation. In fact, nearly all repeated headaches of childhood are ocular. Curiously enough, we begin to get old, as far as our eyes are concerned, at about fourteen years of age. From that time on our near point recedes until some time between forty-five to sixty years the power of accommodation is practically lost. During this period there comes a time when the recession of the near point has gone beyond a comfortable distance in which to hold the book, and the strain to see produces headache, even if the eyes are normal. This generally occurs at forty-five years of age, but if the patient has a small amount of hypermetropia, which he has earlier been able to correct without difficulty, the time will come when he cannot correct it, and at that time he will have ocular headaches, although it may be thirty to thirty-five or forty years of age.

Another combination of circumstances which is very likely to precipitate ocular headaches in the subject before free from them is when a man takes up an occupation which requires much more exact use of the eyes than that which he has pursued heretofore. Such a patient will be subject to headaches from so small an amount of astigmatism that previously he had been unaware of any trouble in his eyes, and had never had headache.

Again, a patient with a small amount of astigmatism or hypermetropia, who has always corrected it without difficulty, may find upon recovering from some prostrating illness or mental shock or worry that headaches are frequent. This simply means that the physical condition has been so reduced that the muscular labor of correcting the error, heretofore easily borne, is now a burden. Proper glasses will stop such a headache; and when the person has recovered his wonted vigor, it is very probable that he can dispense with glasses entirely until such other time as illness, age, or more continuous application reproduces his symptoms, and he is obliged to resume his glasses.

The characteristics of an ocular headache are that they follow near work or come on during near work. Perhaps the most common form is a headache in the morning after long-continued use of the eyes in the evening, although there had been no headache while the eyes were actually employed. By headache in the morning, I mean a headache upon awakening; I do not mean a headache that wakes the patient. My experience is that a headache sufficiently intense to wake the patient in the night or in the early morning is not ocular, and is generally uræmic. Ocular headaches almost always follow railroad journeys, visits to the theatre, walking in crowded streets, looking intently at the minister in a darkened church, visiting picture-galleries, or any other use of the eyes which requires unwonted exactness of vision. Such a headache is first of all frontal, very often temporal, and with or without pain in the eyes. The next most common place for such headaches is in the occipital region. A headache that is frontal and occipital is almost always ocular. A headache that is confined to the vertex or to the parietal regions of the head is almost never ocular.

Many cases of migraine are ocular in origin, and, when so, have in my opinion distinctly ocular phenomena. Such patients will complain that when reading they were suddenly unable to see but one-half the object, or but one-half of a letter at a time, that this condition continued from ten to fifteen minutes, and was followed by a violent hemicrania, which lasted for a number of hours. Such patients will complain that when a headache is coming on the rows of books upon a book-shelf would apparently open and shut like an accordion, or that round objects suddenly whirled. When any or all of these symptoms are prodromic symptoms of migraine, the eyes should be the first point of investigation.

The treatment of ocular headaches is, of course, the correction of the strain, and this in the vast majority of cases means proper glasses; and the selection of these glasses is a matter requiring great care and skill, for a correction that enables the patient to see perfectly well will not relieve the headache unless it also absolutely corrects the error of refraction, and the difficulties of examination in these cases are many. Spasmodic conditions of the ciliary muscles are common, absolutely hiding the true error and in many cases setting up an apparent error of an opposite kind. Therefore, such corrections for headaches and nervous phenomena can only be made under a mydriatic. If, after putting on proper glasses, after a proper examination, a headache which is apparently ocular still continues, it will generally be found to be due to an insufficiency in the balance of the ocular muscles. The vast majority of headaches are done away with by properly correcting the error of refraction, but a few cases remain in which operation upon the muscles is absolutely necessary for relief of the nervous phenomena. The correction of muscular insufficiences sometimes produces results that are almost marvellous, and the amount of relief is in no way comparable with the amount of the insufficiency as measured by the prism tests.

Another point upon which I wish to speak is this: the fact that a patient sees with rather more than the usual amount of accuracy in distance is not a proof that the eyes may not be the cause of the headaches. In fact, it seems to me that a person with a small amount of astigmatism or a small amount of hypermetropia which he can easily correct, and who has rather extraordinary acuity of vision, is the very person who is most likely to suffer from ocular strain. Such a person can see many things which other people do not, and with an accuracy which other people do not attempt, and in so doing imposes upon himself a burden which other people do not carry. Thus, too great acuity of vision, when associated with a small error of refraction, may be a positive misfortune.

SIR JOSEPH LISTER, having reached the age of sixty-five, the age-limit by the regulations of King's College, Edinburgh, has retired from the clinical lectureship in surgery.

CHARAKA SAMHITA. — This is the title of the most ancient and famous work on Hindu medicine which is known to exist. It is also the most comprehensive Sanscrit treatise on disease. A translation of this work has undertaken by Kaviraj Avinash Chandra Kaviratna, of Calcutta, and forms a valuable contribution to medical history.

A HOUSEHOLD EPIDEMIC OF PNEUMONIA SUGGESTING CONTAGION.

BY GEORGE G. SEARS, M.D.

THE appearance of pneumonia in epidemic form, either confined within the limits of a single household or extending over a considerable area, is as well known as any fact in the history of the disease and one of the most satisfactory proofs of its infectious character, as the most natural explanation of such outbreaks is the exposure of the patients to one common cause. Instances, however, are by no means unusual where no such cause can be discovered, and the observers have not hesitated to ascribe the spread of the disease to personal contact, to contagion in the usual acceptation of the term. Such an explanation of certain cases is accepted by the Committee for Collective Investigation of the British Medical Association, who quote several instances. Flindt,[1] who has had exceptional opportunities for studying the disease in one of the small Danish Islands, says that in more than seventy per cent. of all cases where pneumonia appeared in a household previously spared, it was proved that the person first attacked, either immediately or a short time before, had been in more or less intimate relations with a pneumonia patient or had visited his house, and had then time and again acted as a focus for its further dissemination. Netter, who has collected and analyzed a number of reports of these epidemics, is convinced that the disease can be communicated either immediately, by direct contagion, or through the medium of some article of furniture, wearing apparel, etc., and the same opinion is held by many others.

In the following cases the disease seems to have been directly transmitted from one patient to the other. The family consisted of the father, mother and six children. It had occupied the same house for the past twenty-seven years, and during that time had had but one serious case of illness, a pneumonia from which the father suffered eleven years before. The house was not overcrowded, was kept decently clean, and its sanitary condition was good, the drainage having been recently overhauled. On the second or third of December, 1888, the father began to complain of slight cough and pain in the left side, but was not confined to the bed till two or three days later. On the 8th of the month he was removed to the hospital with consolidation of the left lower lobe, and was discharged well on the 22d. During the first few days of his illness he was placed in charge of the youngest child, a girl of three, who spent most of the time on the couch on which he was lying. On the 22d she developed a pneumonia of the left lower lobe. Convalescence was slow, and was delayed by a purulent otitis media. On the 1st of January, 1889, the oldest daughter, seventeen years of age, who had acted throughout as nurse of the latter case, also came down with the disease, the left lower lobe being again involved. Defervescence occurred on the 7th, as in the other cases, by crisis. The history of the three cases was very similar. In all the disease developed rather insidiously without initial chill, and the earliest symptoms were chiefly referable to the digestive tract, consisting of nausea and vomiting, accompanied in the last case by considerable diarrhœa. It was only after the lapse of a day or two that cough, pain in the side, or other symptoms referable to the lungs became prominent. In the two adults delirium of a low typhoidal type with picking at the bed clothes was a marked feature. Herpes was not present in any of the patients and the spleen could not be felt, nor, owing to the site of the consolidation could its area be definitely determined by percussion.

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[1] Transactions of the International Medical Congress, 1884.

A second instance of the outbreak of more than one case of pneumonia in a household has recently come under my observation, but the connection between them was less striking, as there were but two, and their occurrence within a few days of each other may have been simply a coincidence. About the 5th of last May, Mrs. A., a widow, moved into the third floor of a tenement-house which has since been reported by the Board of Health as in good sanitary condition. She had so little intercourse with the other inmates that it was not until the 9th, some forty-eight hours after she was taken ill, that her condition was discovered by Mrs. R., who occupied the lower floor. On visiting her the same day I found her suffering from a pneumonia of the left lower lobe. She was immediately removed to the hospital where she died. On the 18th, I found Mrs. R. suffering from pneumonia of the right lung, from which she recovered. So far as I could learn there had been no cases of pneumonia in the house for several years, and the connection between the two seems probable. If so, the period of incubation was exactly nine days. In the other cases, owing to the prolonged exposure, it could not be so definitely fixed, in one it lay between fourteen and twenty days, in the other it was six days or less.

An examination of the mortality returns of Massachusetts for the past forty years, shows that there has been a decided downward tendency in the proportion of deaths from small-pox, scarlet fever, measles, typhoid fever and consumption, which in all but the last may be chiefly ascribed, apart from vaccination in small-pox, to isolation and to disinfection of the ejecta and dejecta of the patients. In consumption the reason for this diminution is less easily found, but it is in great measure due to better hygienic and sanitary conditions, yet the more rapid decline during the last half-dozen years, which has been also noted by Flick [2] in Philadelphia, beginning in 1885, has probably been assisted by the general acceptance of its bacillary origin, which has lessened the chances of contagion by leading to greater care in the disinfection and disposal of the sputum. That the mortality-rate of diphtheria during this period has remained practically unchanged may perhaps be accounted for by its virulent contagiousness and its persistent infectiousness, as well as to the concealed position of its local manifestation, which may permit the exposure of many persons before its true character is recognized.

Of all the fatal diseases which are classed as infectious, pneumonia alone has shown a steady increase during this period, and in that alone no general effort has been made to prevent its spread by the disinfection of the emanations from the patient in which the pathogenic organisms chiefly lie. The disease offers marked points of similarity to consumption in its repeated occurrence in certain houses, in its epidemic appearance in overcrowded institutions like prisons or monasteries, in the intimate relations which have usually existed between the patients where the probability of contagion has been entertained, and in the fact that the expectoration is the chief channel through which the disease germs may be scattered, yet general measures which have proved so efficacious in one disease, have been unavailing to check the increase of the other, and though the theory of the dependence of one case of pneumonia on another still rests on presumption, enough proof has been already gathered to lead to further efforts at prevention on the same line which gives such promise of success in phthisis, that is, by disinfection of the sputum. While so many points in the pathogenesis of pneumonia still remain unsolved, he would be a bold prophet who would predict results from such a course, even if its thorough performance were possible, but since other measures have failed, our duty does not seem to have been done unless it has been persisted in until it has either been shown to be ineffectual or some other cause is found to account for its increasing prevalence.

Clinical Department.

CANCER OF VARIOUS ABDOMINAL AND THORACIC ORGANS AND SARCOMA OF THE OVARY IN THE SAME SUBJECT.[1]

BY ELBRIDGE G. CUTLER, M.D.,
Visiting Physician, Massachusetts General Hospital.

B. H., housewife, aged thirty-two, a native of Newfoundland but living in Marietta, Ga., entered the Massachusetts General Hospital on July 6, 1891, giving the following history:

She had been married six years; had a miscarriage five years ago, and a child four years ago, which is now living and healthy. She got up eight days after her confinement and felt well; has had no uterine trouble, so far as she knows. When the patient was nine months old her mother died of phthisis, at the age of thirty-three. Otherwise the family history is negative.

The patient herself was never ill, so far as she remembers, until October, 1890, when she had typhoid fever, and was in bed three weeks and convalescing six weeks more. Of the details of this illness she knows nothing. After this she felt perfectly well and went about her work as usual.

On the 18th of April, 1891, the menstruation did not appear; and as she was feeling perfectly well, she supposed she was pregnant. A few weeks later she began to have some morning nausea and vomiting (which lasted for ten days), and a considerable diarrhœa (four to twenty movements a day, mostly watery, with some slime, no blood, and very little solid fæces). These dejections only occurred in the day-time; there was no tenesmus; a sudden abdominal pain, followed soon by a small discharge, gave relief.

Two months after menstruation ceased she began to have pain, referred to the lower part of the back above the nates. This same pain was present while the typhoid fever was in progress, and was called muscular rheumatism. Accompanying the pain was the subjective sensation of cold in the part. The pain in the back and diarrhœa lasted till she entered the hospital, but she did her work as usual in spite of them. The nausea and vomiting passed off in ten days, as before remarked. One month after the cessation of menstruation she began to notice that she was growing larger in the abdomen and clumsier (as she said). This increased steadily till entering the hospital.

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[2] Medical News, May 14th.

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, May 18, 1892.

For the past six weeks she has passed but little urine, of a dark-red color, containing much red "dust." Two weeks before entrance noticed some red spots, about the size of a five-cent piece, on the inside of each thigh and on the sides of the abdomen (cutaneous hæmorrhages). For some time has been unable to eat much because of distension, and has therefore lost much flesh and strength. A week ago noticed several small lumps under the skin, the size of a bean, on the abdomen and arms. One of these excised proved to be a wen.

On entering the hospital, and indeed till her death, the chief complaint was of pain in the back and weakness, together with distention of the belly, which kept her from taking much food, but all the food taken was digested with perfect ease.

Physical examination showed a marked emaciation and a distended belly measuring forty-two inches at the umbilicus. The abdominal veins were very distinct, and the umbilicus was pushed out flat. The entire abdomen was flat on percussion, and fluctuation-waves were easily obtained. The belly was symmetrical; and on deep palpation a hard, irregular mass about the size of the fist, was felt to the right of the umbilicus, and another (perhaps connected with it) on the left. There was slight swelling of the legs and feet, a condition which had been several times present of late. The eyes were sunken, the cheeks hollow and the expression anxious and distressed, while the whole appearance was cachectic. No disturbance of the special senses; superficial and deep reflexes normal. Skin and hair dry. Examination of the heart and lungs negative except that the apex beat was in the fourth interspace above the nipple, with a heaving beat and a pulsation visible all over the normal cardiac area. Liver dulness began above at the level of the fourth rib in the mammary line, lower border indeterminate on account of the abdominal effusion. Spleen was not felt; its percussion was unsatisfactory. Nothing noticeable about the breasts. The pulse was 90, temperature 98.6° F., respiration 22. Rectal examination negative. Vaginal examination with the finger detected a multiparous cervix, a smooth fornix vaginæ, and the fundus lifted out of the pelvis so that no bimanual examination could be made on account of the distention.

To relieve the pain and general discomfort, she was tapped in the median line, just below the umbilicus; and one hundred and forty ounces of blood-stained fluid were removed with relief. The fluid (examined by Dr. W. F. Whitney) was of neutral reaction, 1,014 specific gravity, and contained three quarters of a per cent. of albumen; the sediment consisted of normal blood-corpuscles, a few leucocytes and and a few round cells. The urine varied in quantity from about fifteen to twenty-four ounces in the twenty-four hours, had a specific gravity of 1,018 to 1,025, was always free from albumen and sugar, never contained casts, but occasionally red blood-corpuscles and leucocytes. The urea amounted to sixteen to twenty grains to the ounce of urine, and once considerable more. A blood count made by Mr. Richard C. Cabot twice gave 3,600,000 red corpuscles and 16,500 white corpuscles, a proportion of 1 to 214. The abdomen was tender on palpation over certain limited areas.

For a day or two after the tapping, which was regarded merely as a temporary measure, she was more comfortable; emaciation and reaccumulation of the fluid, however, were progressive, and she had to be tapped again four days later, when forty-three ounces of the same sort of fluid were withdrawn. Four days later one hundred and twenty ounces removed gave relief; again in five days ninety-two ounces were withdrawn. The masses were movable in the abdomen slightly, and appeared to be located in the omentum and were believed to be cancerous. Five days later the tapping brought only blood at first, later clear serum, and the canula being obstructed by a solid mass was removed and entered at the side with the same result. Three days later she aborted, four months and nine days after cessation of the menstruation. The fœtus was about four inches long, the epidermis and nails not yet formed, the eyes not opened. The placenta and membranes normal. She felt easier for a few hours, when all the bad feelings returned. Five days later a tapping gave six ounces of blood, when on removing the canula sixteen ounces of serum tinged with blood came through the orifice. A week later fifty-four ounces of clear serum and bloody fluid were withdrawn, and four days later still one hundred and thirteen ounces of the same character.

She had meantime emaciated to an astonishing degree, the abdominal tumor had increased to a very great size and she was in a miserable condition, when death from asthenia put an end to her sufferings. It was believed that the blood which followed the punctures sprang from accidental injury to the new-growth on introducing the trocar. That this was the case at the time of the last tapping was evident at the autopsy. The punctures before abortion took place were all too high to have penetrated the uterus. It seemed to be clear that the abortion was independent of the treatment.

Autopsy, by Professor R. H. Fitz, eight hours after death. Rigor mortis present. Body shows extreme emaciation. Abdomen much distended.

Head not opened.

Pericardium contains no excess of fluid.

Heart. On anterior wall of right ventricle an elevated white patch, large as a small grape seed. Right side of heart distended with liquid blood. On section, valves and cavities show nothing abnormal. Beneath endocardium of left ventricle, were two small white nodules resembling that on the surface.

Lungs, in general, moderately distended; lower lobes injected, with numerous small, dark-red patches of apparent hæmorrhage. Toward front of the left lower lobe, a rounded, reddish-gray, soft, flat nodule, three-quarters of an inch in diameter, projected above pleura. In interior of the lung were several small, rounded nodules of new formation.

Abdomen. On opening the abdominal cavity, more than a quart of reddish fluid was removed. The omentum filled the anterior portion of the abdomen, transformed into a nodular mass of dark-red color, nearly one and a half inches in thickness, friable. [It seemed to me to be four inches thick. E. G. C.] Nodular projections on surface about the size of a pistol-bullet. The trocar had injured the enlarged omentum on the last introduction evidently.

Peritoneum, in general, irregularly studded with nodules and granules of new formation, from size of filbert to that of a walnut, especially abundant under the surface of the diaphragm, in the pelvis, and over the surface of the right kidney. Two nodules, as large as a plum, grew from the peritoneum into the liver.

Supra-renals. Both supra-renal capsules were enlarged to the size of a small peach; soft, friable, reddish-gray.

The kidneys, spleen and bladder showed nothing abnormal.

Uterus nearly doubled in size; wall opaque gray, friable; cavity dilated, contained a dark-red fluid; remains of placental insertion at fundus.

Ovary. Right ovary contained a moderately soft, gray nodule, large as a filbert.

Liver. With the exception of the nodules above mentioned, this showed nothing abnormal beyond a considerable degree of fatty infiltration.

Stomach. Near the pyloric end a flattened, rounded patch in the mucous membrane, projecting above the surface, resembling that on the surface of the lung.

Intestines. Two similar but smaller nodules were found in the small intestine.

Microscopic examination of the nodule in the lung and on the surface of the ovary showed small alveolar structure, with fibrous wall and groups of epitheloid cells as contents. Large nodule in the ovary, made up of large spindle-cells with comparatively little intercellular substance.

Anatomical diagnosis. Cancer of supra-renals, heart, lungs, omentum, peritoneum, liver, ovary, stomach and intestines. Spindle-cell sarcoma of ovary.

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Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., OF BOSTON.

(Concluded from No. 13, page 311.)

FRAMBŒSIA OR YAWS.

Mr. Numa Rat, whose experience in South America, Africa and the West Indies, has given him ample opportunity to study the disease known as framboesia or yaws, has written a monograph on the subject, to which a preface has been added by Jonathan Hutchinson. We quote from a review of this essay by Malcolm Morris in the *British Journal of Dermatology* for February, 1892.

The clinical history is divided into four stages: (1) The incubation stage. From the time the virus is received to the appearance of an initial lesion at the site of entrance, of duration from three to ten weeks. (2) The primary stage, which means the appearance of an initial lesion, a papule which in about a week discharges a yellowish fluid, and merges into an ulcer. This heals in about two weeks, leaving a slight scar. Occasionally the papule may become a tubercle, or the ulceration may become extensive. The initial lesion is usually situated on the lips, breast, groin, genitals or perineum. (3) The secondary stage. A fever makes its appearance about two weeks after the primary sore has disappeared, paroxysmal in type, usually quotidian. At the same time an eruption appears on the head, consisting of small papules, which later become yellowish at the apex, owing to the presence of a substance like inspissated sebum. Soon after, the eruption extends to the body. Later the papules develop into tubercles, averaging one-quarter of an inch in diameter, composed of granulation tissue covered with a creamy, acid secretion. The tubercle, in spite of the name "framboise" is very unlike a raspberry. The color varies according to the amount of blood, and dries up in about four weeks. There is always itching, and the skin has a sour odor.

The disease is most common in infancy and childhood, and as it is said to run a lighter course in youth, parents in parts of Africa expose their children to it in infancy, and even inoculate it upon them. As variations in the course, the tubercles may coalesce, forming patches or rings of granulation tissue, and sometimes ulcerate. They may be found on the palms and soles or on the mucous membrane of the nasal fossæ. (4) The tertiary stage. Here extensive loss of tissue occurs, sometimes serpiginous, the mucous membranes may be seriously ulcerated, and these lesions may occur twenty years after subsidence of the secondary eruptions. Mr. Rat considers the differences between syphilis and yaws, emphasizing the fungous character of the eruption of the latter; the fact that it is not proved to be hereditary; that it is not usually contracted through the genitals; that it is endemic and epidemic; that persons having syphilis may also acquire yaws, etc. Mr. Hutchinson, however, shows that it is proved to be a constitutional disease, beginning with a local lesion and having secondary and late manifestations, and concludes that it is syphilis modified by climate and race. The method of cure is also a strong argument in favor of the identity of the affections. Formerly the spontaneous cure of yaws was cited in favor of non-identity, but Mr. Rat says that mercury and iodide of potassium are indicated in the same stages as in syphilis. It is said that Englishmen do not return affected with yaws, and hence Mr. Hutchinson considers it a disease that cannot leave its home.

TROPHIC ULCERS IN SYRINGOMYELIA.[3]

M. L. Jacquet describes the following interesting case:

D., twenty-nine years old, hair-dresser, entered the Hôpital St. Louis, March 5, 1886. Father and mother died of consumption. No syphilis nor alcoholism. In 1883, he says, he was stung on the middle finger of the right hand by a scorpion, in Algeria, and that subsequently the arm and hand became enormously swollen, and amputation of the middle finger was resorted to. After convalescence began to have pains, running from the cicatrix in the hand up to the shoulder, especially severe at night and deep in character, as if they were seated in the bones. At the same time there appeared similar pains in the neck and occiput. Two years after the operation a small sore appeared on the upper part of the right ear on the margin of the helix, which became in two days an ulcer. This cicatrized in two weeks, but shortly afterward broke out again, being accompanied by new lesions in the parieto-occipital region, and since then similar ulcers have appeared on the right occipito-parietal, cervical and clavicular regions.

On entering M. Besnier's service, large ulcerated, irregular, purulent surfaces were to be seen, *limited to the right side*, on the scalp, neck, below the clavicle, and on the dorsal surface of the right wrist. All of these ulcers have very ragged edges, but are not punched out, the base being on the same level as the surrounding skin, and there is considerable infiltration. There are also upon the right side cicatrices situated upon the helix, below the jaw, and at the anterior superior part of the deltoid region. The pains mentioned in the history still exist, but there are no painful neuralgic points. There was much change in the tegumentary sensibility of the area occupied by the ulcers, together with the entire arm. The sense of touch has disappeared; analgesia was complete, with the exception of the palm of the hand. Thermal differences could not be perceived by the patient. Muscular strength sensibly diminished on the right, although no atrophy could be detected. Sensibility was normal over the rest of the skin. While patient remained in the hospital some of the ulcers healed; others extended and there was some erythema of the surrounding skin. Ulcers also could be produced artificially, one having for instance made its appearance after a slight application of acetic acid. The patient was lost sight of for some time and died on the 14th of July, having suffered from violent pains in the left trigeminal nerve and in both lower limbs, principally in the right. The ulcers had become deeper, so as to expose the clavicle and to cause considerable hæmorrhage. At the autopsy no changes were found except in the spinal cord, which was traversed from end to end by a cavity in the gray matter at the juncture of the two right cornua. Histologically the gray matter surrounding the cavity was changed, disintegrated, and consisted of numerous small fibres, of which the axis cylinders are varicose. Vascular walls thickened. The white matter showed a decrease in the number of myelin tubes.

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[3] Internationaler Atlas seltener Hautkrankheiten, Hamburg, vi, 1891.

The diagnosis was at first very doubtful, but the affection was considered to be tropho-neurotic in character. At the time of the post-mortem (1887), syringomyelia was almost unknown in France, and the true nature of the ulcers was not discovered until subsequently. M. Jacquet admits, in concluding, that the (so-called) trophic troubles were peculiarly limited in situation, and notes that the possibility of producing ulcers at will in the region of troubles of sensibility, had not hitherto been known to him.

BOCKHART'S IMPETIGO.[4]

"Epidermic Abscesses Caused by the Micrococci of Pus." This was the subject of a communication made to the Medical Association of Hamburg, January 12, 1892, by Unna. He passes in review the different views that have been held, from time to time, with regard to the propriety of recognizing a morbid entity distinct from a pustular eczema. It was owing to the writings of Hebra that Willan's impetigo was made to disappear in favor of eczema impetiginosum, until Bockhardt, in 1887, showed that there was a pustular affection, caused by the staphylococcus aureus et albus, and distinguished from eczema and other pustular diseases by a series of specific symptoms. In addition to this Bockhardt grouped with this two other affections, hitherto isolated and misunderstood, namely, furunculosis and sycosis "coccogène."

It is easy to confound, according to Unna, other pustular conditions with impetigo, or epidermic abscesses. In this affection the pustules are very variable in size; generally speaking are circular in form, the larger ones often oval. They appear primarily as punctate elevations, which gradually change to the impetiginous pustule, which becomes more and more elevated without increasing in circumference. The color is at first a bright, later a greenish yellow. The postule seldom bursts spontaneously. Its contents are a pure drop of pus, and here and there where a serous exudation occurs secondarily, the pus forms a sediment. One of the chief characteristics of the pustule is the inactivity of its periphery, as there is, as a rule, no surrounding redness, or if such exists, it is always slight. The pustules form in from six to twelve hours, remaining stationary for several days, and then begin to dessicate, a process which lasts from two to fifteen days, according to circumstances. As new pustules are never produced except by inoculation from without, their appearance depends solely on the mode of infection and the frequency of exposure. They are almost always disseminated, often at such distances that the only explanation is to be found in transportation by means of the nails. The lesions give rise to few subjective sensations, and do not itch.

Histologically the pustule of impetigo is nothing more than a quantity of pus situated beneath the horny layer, between the latter and the intact rete. Small clusters of the pus micrococci are to be seen between the horny layer and the pustule. In the rete at the base of the drop of pus they are wanting, as well as in the corium. The micrococci attract immediately a fringe of pus, as soon as they have become lodged beneath the horny layer. The cocci do not penetrate the rete, and far less the corium. The inflammatory phenomena in the capillary vessels are unimportant, often entirely absent. The rete is not, as one would suppose, filled with leucocytes. These pass to the attracting micrococci by way of the sweat glands and other channels. Following the late experiments of Leber and Pfeffer, we must regard chemotaxis as the chief factor in the production of these epidermic abscesses, and Unna regards it as not improbable that they may be caused by other organisms beside the known staphylococci.

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Reports of Societies.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-eighth Annual meeting, held at Fort Griswold House, New London, Conn., July 20 and 21, 1892.

FIRST DAY. — MORNING SESSION.

The Society was called to order by the Vice-President, Dr. George C. Harlan, of Philadelphia.

The first paper was that of Dr. Charles A. Oliver, of Philadelphia, entitled

HISTORY OF A CASE OF GUNPOWDER INJURIES TO BOTH CORNEÆ, IRIDES AND LENSES, WITH SUBSEQUENT RESTORATION OF VISION TO ALMOST FULL ACUITY.

The patient, a young man eighteen years old, on July 4, 1891, received the powder contents of a blank cartridge squarely in the face from a distance of three feet, the gravest part of the injury being several penetrating wounds of both corneæ with deposition of powder in both irides and lenses. He was brought to Wills Hospital several hours later. The particles of gunpowder were removed as thoroughly as possible from the corneæ, conjunctivæ and sclerotics under cocaine and atropine. When the patient was first seen by the writer, sixteen hours after the accident, there was found to be in the left cornea a rather peripheral wound, with corresponding tear in the iris, through which a powder grain could be seen sticking to the lens. Another deep wound extended almost through the cornea. The fundus was apparently normal. In the right eye there was a penetrating wound of the cornea with injury to the iris. The lens was swollen and rapidly becoming opaque. Four days later there was an outburst of secondary glaucoma. Eserine and cold compresses were then employed, and the following day an iridectomy was made. The wound healed promptly, and atropine was resorted to on account of slight tenderness in the ciliary region. In the left eye there was continuous improvement. When the patient was discharged September 4th, there was good perception of light in both eyes. In the left eye there was considerable unabsorbed lens matter. The right eye had normal tension. Most of the lens matter seems to have been absorbed. The lower half of the pupil was covered by a thin opaque sheet of capsular débris. Two weeks later a broad round hole was made in the lower half of the capsule, securing vision of $\frac{5}{10}$ with proper correction. A free double discission of the left lens was also done, obtaining vision of $\frac{5}{10}$. Since the discharge of the patient (one year), the eyes have remained perfectly quiet and the patient pursues his occupation of outside delivering agent in a large retail store.

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[4] Unna: Annales de Derm. et de Syph., May, 1892.

REMOVAL OF A FRAGMENT OF STEEL FROM THE VITREOUS CHAMBER BY MEANS OF THE ELECTRO-MAGNET, WITH PRESERVATION OF NEARLY NORMAL VISION,

by Dr. Samuel Theobald, of Baltimore.

The piece of steel, which was very small, had passed through the margin of the cornea and through the iris near its periphery, but fortunately missed the lens. It had been in the eye eleven days when the attempt was made to extract it, and had excited a dangerous degree of inflammation. Owing to the clouding of the vitreous humor, its location could not be determined with the ophthalmoscope. Under antiseptic precautions a longitudinal incision about four millimetres long, was made through the sclerotic and deeper coats of the eye, between the inferior and exterior recti muscles and back of the ciliary body, through which the magnet-point sterilized by boiling water, was introduced into the vitreous chamber. After several unsuccessful attempts, the bit of steel was withdrawn adhering to the magnet-point. There was considerable hæmorrhage, but no loss of vitreous. The after-treatment consisted in the application of a lotion of opium and boracic acid and the instillation of atropia. The case made a rapid and uninterrupted recovery; and the eye is now (three months since the removal of the foreign body) very nearly normal in appearance, the pupil being not quite circular. It is free from inflammation and photophobia, has a clear vitreous and has vision $= \frac{20}{25} +$.

FOREIGN BODY IN THE RETINA,

by Dr. Buller, of Montreal, Can.

The patient, a young man twenty years old, had received an injury to the left eye six days before coming under observation, by being struck with a piece of metal. There was a penetrating wound of the cornea, with perforation of the iris and zonula, but no opacity of the lens. A short distance below the papilla was seen a piece of metal lying in the retina. Rest and instillation of a two-grain solution of atropine was ordered. A zone of opacity around the foreign body gradually increased in size. Twenty-six days after the injury, the eye felt well. Vision $= \frac{6}{12}$. There were pronounced evidences of neuro-retinitis. The piece of metal was still quite distinct. For a considerable distance around the foreign body there was marked atrophy of the chroidal pigment. Fourteen months later, the eye was still giving no trouble. Vision $= \frac{6}{27}$. There was diffuse hyalitis with fine opacities in the vitreous. The optic nerve was red and swollen. The foreign body had, however, entirely disappeared from view. Its former seat was marked by a small patch of pigment. It was thought that an attempt to extract the foreign body would probably have to be made under less favorable circumstances than if it had been made while the body was in sight.

A CASE OF TRAUMATIC IRIDO-CHOROIDITIS FROM CONTUSION OF THE EYEBALL, ENDING IN THE DEVELOPMENT OF INTRA-OCULAR GLIOMA,

by Dr. Charles Stedman Bull, of New York.

The patient was a girl, aged three years, who had been struck on the left eye ten days before by the bowl of a large spoon. There was no rupture of the eyeball. The child at once complained that she could not see. Ten days later, the eye was sightless. There was a central infiltration of the cornea, with loss of epithelium. The iris was dilated, discolored and immovable. The vitreous was hazy, and there was a yellowish reflex from the nasal portion of the fundus due to an exudation. There was no pain or sensitiveness on pressure. The child was and had always been perfectly healthy. One week later, numerous hæmorrhages occurred in the retina and vitreous, and the tension was increased. All external signs of irritation had subsided. Three months later a detachment of the retina occurred, involving nearly two-thirds of the fundus. The yellowish reflex still remained, and vessels were seen running over it. The tension still remained above normal. Six weeks later, the sclera in the ciliary and equatorial regions became thinned. Enucleation was urged, but refused by the parents. Four months later the child was much worse. She was anæmic and emaciated. There was a large ciliary and equatorial staphyloma; there was no anterior chamber. The lens was opaque and crowded against the cornea, and the tension much increased. The parents now consented to an enucleation, nearly a year after the occurrence of the injury. The child at first improved very much in health, but two months later she complained of headache and nausea, and the pre-auricular and submaxillary glands were found enlarged. Three weeks later a growth was discovered in the orbit, and the upper cervical glands became enlarged. All the symptoms grew steadily worse, and three months after the enucleation the right eye became involved, a small yellowish deposit being found in the inferior temporal quadrant. The left orbit became filled with the growth, all the glands on the left side became enormously enlarged, the child became gradually stupid, then comatose, and she finally died sixteen months after the occurrence of the blow on the left eye.

No autopsy could be obtained. A microscopic examination of the left eye showed gliomatous masses developed in a matrix of exudative tissue.

HYALINE BODIES (DRUSEN) IN THE NERVE HEAD,

by Dr. George E. de Schweinitz, of Philadelphia.

The writer described hyaline bodies in the nerve head from the stand-point of microscopic examination, and reported a case in which during life, he had observed the well-known appearances of the globular formations in the papilla, and afterwards had the opportunity of making a thorough microscopic investigation.

TWO CASES OF SYMMETRICALLY PLACED OPACITIES OF THE CORNEA, OCCURRING IN MOTHER AND SON,

by Dr. Charles A. Oliver, of Philadelphia.

On the 23d of February, 1891, a boy, eight years old, came under observation, with opacities of the cornea. These had been noticed for a long time, but one year previously had enlarged and became conspicuous, following an attack of malarial fever. There was no evidence of congenital syphilis. Laveran's corpuscle was looked for, but not found. In each cornea there is a central opacity surrounded by a ring of superficial pin-point opacities. There is and has been no evidence of inflammation. During the sixteen months that the patient has been under observation there has been no change in the appearance of the corneæ.

Examination of the mother's eyes showed similar opacities of the cornea, which had been present as long as she could remember. The woman was apparently perfectly healthy and free from all evidences of organic disease and with no history of pronounced illness.

THE PRIME ETIOLOGICAL FACTOR OF GLAUCOMA IS CONSTITUTIONAL,

by Dr. S. O. Richey, of Washington.

This paper, quoting from the Bowman lecture, 1884, by Mr. Jonathan Hutchinson, who speaks of affections of the eye (among which is mentioned glaucoma) possibly having some connection with gout, elaborates the thought, and shows the correspondence of the details of an attack of podagra and one of acute inflammatory glaucoma in their clinical history, and also the anatomical similitude of the two regions, referring to the classes of the individuals attacked by each, and endeavoring to explain certain differences.

The writer thinks that "in the hypothesis discussed, we find the true etiological factor of that most intractable of diseases, chronic glaucoma; that acute inflammatory glaucoma is a paroxysmal expression of the same affection; that local irritation or trauma excites an attack of glaucoma only in the presence of the dyscrasia; that operation saves the eye during a paroxysm; that operation serves little purpose in chronic glaucoma, even when it does not, by irritation, precipitate a paroxysm; that chronic glaucoma is a neurosis, a progressive atrophy with the feature of inflammation with defective power, varied by periods of apparent rest; that correcting and controlling individual habits, especially in the character and amount of food taken, will do more to preserve vision than operation; that there may be a possibility of aborting chronic glaucoma if the tendency to it be recognized at an early stage."

THE FULL CORRECTION OF MYOPIA,

by Dr. Edward Jackson, of Philadelphia.

The result of such correction in 29 patients under observation from three to ten years were given. In but three was there any notable increase in the degree of myopia, and these were hard students between the ages of twelve and twenty-one years, and under the full correction they had subsequently become stationary. It was hoped that the reporting of such results would do away with any timidity about ordering the proper concave glasses for constant use.

CONSTANT CORRECTION OF HIGH MYOPIA,

by Dr. George C. Harlan, Philadelphia.

The writer reported twelve cases in which full and constant correction of myopia, of degrees varying from four to sixteen dioptres, had been worn for periods of five to seventeen years. The ages of the patients varied from twelve to twenty-five years. In some the fundus was normal; in some there were moderate myopic crescents. The degree of comfortable accommodation that exists at the time, or which can be acquired by practice with gradually increasing lenses, should be the chief guide in deciding upon the glasses to be used.

THE GENERAL FORM OF THE HUMAN CORNEA AND ITS RELATION TO THE REFRACTION OF THE EYE AND VISUAL ACUTENESS,

by Dr. Swan M. Burnett, of Washington.

The writer presented a table showing the measurements he had made with Javal's ophthalmometer of the corneæ of 41 eyes. These measurements show the corneal curve expressed in dioptres of refraction at the visual axis, and at intervals of five degrees on either side, in both principal meridians. These demonstrate the fact that the cornea gradually diminishes in curvature from the visual axis toward the periphery. The diminution is much greater to the nasal side, both in emmetropia and ametropia, sometimes amounting to 4.5 D. The average, however, is 2 D. less at fifteen degrees on the nasal and 0.5 D. on the temporal side of the visual axis. The difference in the vertical meridian is less than that to the nasal side, but on the average greater than that to the temporal side. The practical inference is that the place of election in an iridectomy is the temporal side of the cornea.

He re-affirms the belief expressed in 1885, that the ophthalmometer is one of the best means we have at command for making out astigmatism, but that it cannot be relied upon to the exclusion of other methods, for it gives no indication of the amount of lenticular astigmatism, the existence of which the instrument itself has been mainly instrumental in demonstrating.

SOME INCIDENTAL PHENOMENA OF THE SHADOW-TEST,

by Dr. Swan M. Burnett, of Washington.

Dr. Burnett believes the shadow-test to be, on the whole and for the generality of cases, a means of testing refraction reliable to within 0.5 D or 0.75 D. He has examined a certain number of cases, however, in which the findings of skiascopy and by the test glasses did not coincide. In those instances he has noted a play of shadows within the illuminated area which moves across the pupillary space very similar to what is observed in conical cornea. He has measured the corneæ of such eyes carefully with the ophthalmometer of Javal and Placido's discs and has not found them more irregular than eyes which are normal and present no such internal shadows.

The phenomenon is due to some interference in the regular refraction of the light in its outward passage from the fundus and must be found in the corneal substance (not sufficient to produce a discoverable opacity), in the lens surface or the lens substance. Of the exact nature of this irregularity we are still ignorant.

He has found the visual acuteness in such cases to be below the normal in all cases in which the internal shadows were at all pronounced. In some instances which were cited the shadow-tests give reverse movements with minus glasses when plus glasses were required for last vision, the examination being made under a mydriatic.

THE LAW OF SYMMETRY OF OUR EYES, AS MANIFESTED IN THE DIRECTION OF THEIR MERIDIANS; ITS RULES AND EXCEPTIONS,

by Dr. Herman Knapp, of New York.

There is a double symmetry in the human visual apparatus: (1) Each eye can be split by a horizontal section into a superior and an inferior half. (2) One eye as a whole is symmetrical to its fellow with regard to the median line of the body. Dr. Knapp discussed only the latter kind, and confines himself to the direction of the principal meridians in one eye compared with that of its fellow. He based his conclusions on the examination of 1,000 successive cases of astigmatism (ten per cent. of his private eye-patients during the last three years and nine months), for whom he had prescribed glasses and who had worn them with more or less satisfaction. The result was as follows: The meridian of strongest refraction (shortest radius of curvature was.

(*A*) Symmetrically placed in both eyes in 84%, namely:		
(1) Vertical in		60.5%
(2) Horizontal in		11.0
(3) Diagonal (45°) in		4.3
(*a*) upper end of both on nasal side	2.7%	
(*b*) upper end of both on temporal side	1.6	
(4) Intermediate, that is, between vertical and horizontal, omitting the diagonal direction		8.2
(*a*) upper end of both on nasal side	4.9%	
(*b*) upper end of both on temporal side	3.3	
(*B*) Unsymmetrically placed in both eyes, 16%.		
(1) Strongest meridians intermediate		
(*a*) both nasally deflected (upper end on nasal side)		1.8%
(*b*) both temporally deflected		2.1
(2) Strongest meridian vertical in one, horizontal in the other eye		1.3
(3) Strongest meridian vertical in one eye		
(*a*) nasally deflected in the other.		3.3
(*b*) temporally deflected in the other		3.9
(4) Strongest meridian horizontal in one eye		
(*a*) nasally deflected in the other		1.2
(*b*) horizontally deflected in the other		1.6
(5) Strongest meridian nasally deflected in one eye temporally in the other		0.8

This table shows a high degree of symmetry in our pair of eyes, namely, 84%. The dominating direction is the vertical 60%; next comes the horizontal with 11%, then the diagonal with 4.3%.

If both meridians are vertical they are geometrically parallel, but they remain symmetrical just as if both are horizontal. Parallel direction in the intermediate position, for instance, thirty-five degrees of temporal deflection in one eye, and thirty-five degrees of nasal deflection in the other occurs but very rarely. There was no instance of it in this whole series.

The symmetry of our eyes may give us many hints in the selection of cylindrical glasses. As symmetry is the rule we should try to approach this rule also in the 16% of exceptional cases as near as this is compatible with a good correction of the visual acuteness. In conclusion, Dr. Knapp recommends that in our prescriptions of glasses, the complete or incomplete symmetry should be at once apparent, saying for instance so and so many degrees of nasal deflection, namely, 10°, instead of 80° O. S and 100° O. D. Furthermore, he proposes a classification of the varieties of astigmatism based on the direction of the strongest meridian, namely, vertical, horizontal and intermediate or oblique astigmatism, where a deflection of 45° may be called diagonal. The oblique variety has to be sub-divided into nasally oblique (or simply nasal), and temporally oblique (or simply temporal).

Dr. George C. Harlan, of Philadelphia, read a paper, giving

STATISTICS OF DIRECTION OF THE PRINCIPAL MERIDIANS OF THE EYE,

the result obtained being very similar to those presented by Dr. Knapp.

THE CLINICAL VALUE OF REPEATED CAREFUL CORRECTION OF MANIFEST REFRACTIVE ERROR IN PLASTIC IRITIS,

by Dr. Charles A. Oliver, of Philadelphia.

The paper was based upon a careful study of forty suitable cases, extending over a period of five years. The plan of study was not only limited to the ordinary subjective method of lens-testing, but was accomplished by some of the more certain of the various objective plans, such as retinoscopy, ophthalmoscopy (both by the direct and indirect methods), the fundus image-test, and lastly by ophthalmometry as a method of control; Thomson's ametromteer and the chromatic aberration test being used at times.

The following conclusions were presented:

(1) In nearly every case of iritis, especially of the plastic forms, there is a period even after full pupillary dilatation has been seemingly artifically obtained, during which, owing to the persistence of inflammatory changes in the uveal tract, as so well expressed by the clinical evidence of ciliary spasms, etc., graduated instillations of mydriatics should be employed; the duration and gravity of this period being most accurately measured and determined by the systematic and repeated estimation of the varying manifest errors of refraction.

(2) While it is true that during this stage in nearly every case of iritis, ophthalmometric, or rather keratometric study, seems to show at times that there are bizarre and curious changes of corneal curvature, yet it must be conceded from the additional findings of other optometric methods, that the bulk of the ametropic changes in such cases is due to the perversion of the lens action from what Koller terms "spastic accommodation" as the result of ciliary irritation and inflammation.

(3) In nearly every case of iritis the duration of this stage can be promptly shortened by the judicious and ready use of some quick and powerful intraocular muscular paralyzant; the character of the necessary form of the drug and its amount at the time in every instance being judged by the amount of manifest refractive error found at that time.

(4) In some few such cases of iritis, however, during the acme of the attacks, especially if the case be pronounced in type and stubborn in character, the higher grades of manifest refractive error seem to obstinately persist with but little variation in amount and to defy for a long time reasonable local and general measures.

(5) In some few cases of incipient iritis, where clonic spasms of the ciliary muscle seems to present itself or pupillary contraction repeatedly persists, local muscle paralysis, as evidenced by a relative decrease of the refractive error, is often quickly obtainable by a prompt and more energetic employment of some of the more powerful and appropriate local and general remedies.

(6) Consequently the careful systematic estimation of the manifest error of refraction found during attacks of iritis is of great value in the rational and scientific treatment of this disease, offering itself as not only a means by which the general prognosis of the affection can be made more certain from time to time during its progress, but permitting itself to serve as a measure on guide as it were, by which the attacks may be more properly and more understandingly treated and their duration shortened by the judicious and intelligent use of appropriate drugs, thus giving better opportunity for lessening the chances of harmful and permanent after changes to one of the most important and yet one of the most susceptible organs of the ocular apparatus.

SOME TENOTOMIES OF RECTI MUSCLES FOR INSUFFICIENCIES,

by Oren D. Pomeroy, of New York.

A detailed report was made of fourteen cases in which division of the muscles was practised, but the writer stated that most of the cases of insufficiency that he had met had been relieved by correcting the ametropia.

In dividing the tendon in some instances, an aperture has been made in the centre and a small hook passed in, dividing successively each half. This is a difficult procedure and not necessary. Ordinarily the conjunctiva is dissected as little as possible and the tendon divided at its insertion. The patient is then tested by prisms, and if more effect is desired, more dissecting is done. It is difficult to tell by inspection whether or not all the tendon has been divided. A little over-effect is usually desired, and if considerable over-effect is obtained a suture corrects it.

In many of these cases where all the muscles were weak, the patients have had diplopia when looking towards the divided tendon, but this has been unimportant.

PROMINENT SYMPTOMS OF HYPERPHORIA,

by Dr. H. F. Hansell, of Philadelphia.

The paper was based on a study of thirteen cases. The symptoms given, included only those positively traceable to the hyperphoria, as demonstrated by their disappearance on the cure of the affections. In two of the cases the symptoms were purely local. Photophobia of moderate degree was present in five cases. Pain in the eyeballs constant, or induced by reading, was prominent in all cases. Six cases suffered with vertigo and dizziness. Two cases were the subjects of violent dyspepsia. In four cases the most prominent symptoms were excessive nervousness, irritability of temper and at times mental confusion.

SECOND DAY. — MORNING SESSION.

CONTRIBUTION TO THE SUBJECT OF INTRACRANIAL LESIONS, WITH DEFECTS IN THE VISUAL FIELDS; FIVE CASES WITH AUTOPSIES.

by Dr. Charles Stedman Bull, of New York.

The first case was that of a lady, aged fifty years, who had no trouble with the sight until four years before coming under observation, when she suffered a severe and sudden mental shock which caused a series of convulsions ending in a condition of profound nervous prostration. Then followed a severe neuralgia, coming on every three weeks and lasting for more than a year. The first ocular symptom was night-blindness in one eye with progressive amblyopia. One year later, the other eye became affected in the same way. Headaches then came on, boring in character and located at the vertex, but subsequently becoming continuous and confined to the occipital region. There was a large, irregular central scotoma in the left eye for form and color, and a smaller scotoma in the right eye. The fundus of the right eye was but little affected, but in the left eye, there was a neuro-retinitis in the stage of decline, and beginning atrophy of the optic nerve. The patient lived four years with steadily failing vision. During the last year, she had repeated attacks of unilateral convulsions, became wildly delirious, and died in a violent general convulsion. The autopsy showed extensive pachymeningitis of convexity of left anterior lobe, some patches over right anterior lobe, and one large patch over right parietal lobe. All the arteries at the base of the brain were thickened and their lumen narrowed.

The second case was a young man, aged twenty-four years, who had suffered from headaches for more than a year, at first slight and transient, but increasing in severity and intensity. Six months later, appeared muscular twitchings in upper extremities and face, and attacks of vertigo. The vision of both eyes became affected. In one of these attacks, he developed general convulsions, and fell a distance of thirty feet striking on his back, but the fall apparently produced no evil result. There was concentric narrowing of the field of both eyes which steadily increased and the vision slowly failed. The optic discs, which were at first hyperæmic, became pale and atrophied. About six months after the first convulsion, he had two violent convulsions rapidly succeeding each other, which proved to be the last. He became very irritable, grew stupid, and gradually sank into profound coma, in which he died. The autopsy revealed a large tumor involving the optic chiasm, both optic nerves and the hypoprysis, which on examination proved to be a small-cell sarcoma.

The third case was a gentleman, aged thirty-seven years, who had suffered from severe headaches for about nine months in the left parietal and occipital region. Two months later, there occurred a loss of vision in the right half of each field. Six weeks before coming under observation, he suddenly lost the sense of smell. Examination showed a vision of $\frac{20}{50}$ in each eye and a bilateral right hemianopsia with concentric limitation of the remaining fields. The patient had had a chancre twelve years before. The intracranial lesion was believed to be a gumma and located in the cuneus. In spite of treatment, there was a steady failure of vision, and he began to have muscular twitchings in face and hands. He gradually became stupid, then comatose, and he finally died fourteen months after the first appearance of the headache. At the autopsy an olive-shaped tumor was found in the cuneus on the left side close to the median line. This proved to be a small-cell sarcoma.

The fourth case was a lady, aged seventy-two years, who had suffered with headaches for more than a year.

Six months before coming under observation, she awoke with severe pain in the head and total blindness in the left eye. There was confusion of ideas, numbness of the right arm and leg and thickness of speech. An examination showed slight ptosis of both upper lids, speech thick and slow, tongue pointing to the right side, vision $\frac{20}{40}$, slight lenticular opacities and bilateral left hemianopsia. The ophthalmoscopic examination was negative. It was thought probable that the patient had a thrombosis and subsequent rupture of the middle cerebral artery on the left side. The lady lived for twenty months, during which time the vision failed, but the fields remained unchanged. One morning she was found unconscious and died three days later. The autopsy showed a patch of softening in the left anterior lobe and in a branch of the middle cerebral artery, running through it was an old plug which completely obliterated it. There was a recent rupture of a branch of the left middle cerebral artery and a large clot of blood in the middle lobe of the brain close to the Sylvian fissure. All the arteries of the brain were diseased. At the base of the brain on the right side, overlying and pressing upon the right optic track was a tumor the size of a hazelnut, situated just in front of the corpus geniculatum laterale. This proved to be a small-cell sarcoma.

The fifth case was a gentleman, aged thirty-five years, who had suffered from severe headache for three years, beginning in the frontal region, but gradually extending all over the head. At first intermittent, but later, constant. Occasional attacks of nausea and vertigo. Four years before he had received a violent blow on the left parietal region which caused bleeding from the left ear and rapidly increasing deafness. Nine months before coming under observation, he began to see double. Six weeks after he came under observation, partial left hemianæsthesia appeared. There was paresis of both external recti muscles. Vision in the right eye was $\frac{20}{100}$, in the left eye $\frac{20}{50}$. There was marked papillitis with numerous hæmorrhages. There was homonymous diplopia for all distances, irregular central scotoma for all colors, vertigo very marked with a tendency to rotate to the right side. Diagnosis of cerebellar tumor was made. Towards the end he became nearly blind and died in profound coma. The autopsy revealed a globular tumor in the right lobe of the cerebellum, close to the peduncle. This proved to be a glio-sarcoma.

(*To be continued.*)

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

A. N. BLODGETT, M.D., SECRETARY.

Meeting of May 18, 1892, Dr. E. G. Cutler in the chair.

Dr. Myles Standish read a paper on

OCULAR HEADACHES.[1]

Dr. A. N. Blodgett: I would like to allude to one form of headache not mentioned by the reader, namely, that resulting from travel on railroad trains. I think that headache from this cause is more frequent than is generally supposed. Treatment by any of the methods usually employed is generally without benefit. An explanation was once given me by Mr. Fox the consulting engineer intrusted with the construction of the railway tunnel beneath the river Mersey at Liverpool. In the journey between Liverpool and London Mr. Fox incidently made the remark that he always sat with his back toward the engine. The English cars are built with transverse compartments so that the passenger is obliged to sit on a fixed seat, and therefore half the persons in a compartment are forced to sit with the back toward the engine. Mr. Fox stated that he always took that position from the fact that his eyes were thereby rendered much more comfortable during the journey. He thought that this result might be due to the repeated and sudden strain in the accommodation which is rendered necessary if one is looking at a series of rapidly approaching objects, as when travelling in the train. The effect was like a blow upon the eye. If the traveller be looking backward the object would be constantly receding and the strain of accommodation was continually letting up, and caused no discomfort whatever. That seemed to me a very ingenious and logical explanation why some people suffer from headache and vertigo in railroad travelling. Since that time I have directed car-sick travellers to ride backward, and have adopted this method myself with the greatest comfort.

Dr. Standish: What Dr. Blodgett mentioned is a well-known fact to me. It is my custom to advise such patients to ride backwards on a railroad train. I think the people who suffer most are the people who have not only some refractive trouble, but have an insufficiency of the internal recti, the converging muscles. It is the continual convergence of the eyes upon watching objects coming from a distance to near, as well as the accommodative effort, which produces the strain. If I have a patient with accommodative error who has insufficiency of the internal recti and complains of headaches I always advise him to ride backwards in a railroad train, and such patients always tell me afterward that the expedient is of the greatest comfort to them.

Dr. Scofield: My attention was specially called to eye trouble as a frequent cause of headache by a case which I saw last fall. A young girl about twelve years of age, came to the West-End Dispensary with a history of "frontal" headaches for several weeks past, much worse while attending school or mornings following evenings spent in reading or study. Since the headaches came on her appetite had disappeared, and she had lost several pounds in weight. Failing to relieve her by the use of bromides, tonics of ferri et quin. cit. maltine, etc., and thinking the headaches probably due to eye trouble I sent her to the Massachusetts Eye and Ear Infirmary where her eyes were examined and suitable glasses ordered. I saw her again after she had been wearing the glasses for three weeks or so, the headaches had ceased, appetite returned, had gained considerable in weight and stature, and felt much better generally.

I have seen three other cases since then similar to the above, all of which have been relieved by the use of suitable glasses. The pain in these cases was confined to the frontal region in all, except one, in which it was mostly limited to the left temperal region but, as before stated, improvement followed the use of suitable glasses.

I think the subject a very important one and we should bear in mind, especially in treating headaches of children that they are frequently due to eye trouble, have the eyes examined and glasses provided, should the case require.

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[1] See page 326 of the Journal.

REPORT OF COMMITTEE RELATIVE TO THE CONDITION OF THE STREETS OF BOSTON.

Gentlemen:—In the report of last year, the committee, composed of Drs. F. I. Knight, J. C. Warren, H. J. Barnes and myself informed you of what had been accomplished in our endeavors to secure a cleaner condition of the city streets. Since that time, the attention of the committee has been especially directed towards securing better methods of street-watering, by which the extravagant demands made upon the public could be abolished and a more thorough and just plan could be adopted.

The committee have had several meetings at the City Hall with the Mayor and Superintendent Carter, both of whom have shown an earnest desire to better the former state of affairs. The matter is now in the hands of the city and not of private individuals.

Chiefly through the efforts of Dr. Barnes, it has been shown that street-watering can be done much more thoroughly and economically than before and, as a result, the water-carts have been sent out in the months of December and March, which has not occurred before.

That there is still much to be desired, no one can deny, but that there has been a marked improvement in the dusty condition of the streets as a rule, when compared with the state of things three or four years ago, every fair-minded person will allow, and we have reason to expect still greater improvement under Superintendent Carter's care.

Not only on the Back Bay but the larger streets in other districts can improvements be made which will tend to lessen the conditions which are detrimental to comfort and health.

The committee still feel that the opinions of the physicians have much weight with the city officials and that the agitation of the subject by the Suffolk District Medical Society has been productive of good results already and will be of good influence in the future.

The committee hold themselves ready to work towards this end in the future if it is your pleasure.

Respectfully, for the committee,
Vincent Y. Bowditch, *Chairman.*

APPENDIX TO REPORT, BY DR. H. J. BARNES.

Last year for forty-three days, beginning April 8th, I kept a record of the number of times my street was sprinkled. It averaged a little less than twice a day for the whole period. There were three days when there was a great deal of dust in spite of the sprinkling, and seven days, other than when it rained, that the street was made disagreeably muddy.

The average humidity for April, 1891, was 75.1, and for May, 70.5. For April this year, it was 53.8, or 21.3 points dryer than the same month last year, and thus far the record for the month of May this year is equally as unfavorable for the man who contracts to keep the streets sprinkled.

Dr. Barnes: I would like to say a few words about the condition of the streets the last two days. There has been a good deal of flying dust, perhaps as much as at any time last year or any other year. I took occasion to go to the Signal-Service Office this morning, to ascertain something in regard to humidity of the atmosphere and what influence it has had, and from the information gained I have taken the following notes to present this evening:

> Yesterday the weather bureau reported the humidity at 36, and to-day at noon it was 35. The yearly average is at about 75 at Boston. You will therefore observe that to-day it was at least 40 points below the average and 65 points from saturation. It has been an extremely dry air with high winds and bright sun, most favorable conditions for rapid evaporation. My street has been covered five times to-day. In the afternoon, half an hour after sprinkling, the dust was flying, and at the expiration of an hour there was little evidence that it had been sprinkled at all. It would require five times as much water to keep the dust laid such a day as this, as was the average requirement for forty-three days last year, or, in other words it would, take five carts to do the work ordinarily performed by one. The thirteen miles of Back Bay streets are easily covered by eight two-horse water-carts when the humidity is from 70 to 80. To have accomplished satisfactory results to-day would have required forty carts of the same capacity.

Dr. White: I should like to state, Mr. Chairman, that I consider the work down by the watering-carts this year far inferior to that done in any previous years, and it is for the reason that not enough water has been used, not enough rounds of the carts have been made. In Marlborough Street last year the carts made double the number of trips made this year. The amount of water put on the street in Marlborough Street scarcely lays the dust fifteen minutes and there has not been a day the last six weeks that dust has not blown there. If persons did not have the street in front of their residences watered by their private hose there would be no living there at all. The amount of water put on does not amount to anything. I went to Chestnut Street a few days ago, and I do not hesitate to say there was more water turned out of that tank on Chestnut Street that trip than on Marlborough Street in a whole day.

Dr. Barnes may have had his street watered five times. That is not the rule, certainly on Marlborough Street. The crossings on the Back Bay have never been so filthy and muddy as this year. Under the old system the crossings were kept clean. They have been in a horrible condition this season. There has been utter neglect this year. That is my impression of the way the streets in our vicinity have been cared for. It seems to me there is a good deal remaining for this committee to do.

Dr. Barnes: I would like to refer Dr. White to the fact that in the record I kept last year the average was only twice a day. My street has been watered three times on the average this year and to-day five times with very little result. It dried up to-day almost instantly. They are using fresh water in place of the salt water of last year. The men who did the work last year claimed that salt water did not evaporate as quickly as fresh. I do not feel sure on that point. The early part of the season last year we had four or five days when the dust did blow in spite of the efforts of the men who did the private watering on the Back Bay and it was when the humidity was comparatively low. The carts used this year are antiquated and do not throw as good a stream as last year.

On motion it was voted that this committee be continued and be requested to take such further action as in their judgment may be advisable in the premises.

Dr. E. G. Cutler reported a case of

CANCER OF VARIOUS ABDOMINAL AND THORACIC ORGANS, AND SARCOMA OF THE OVARY IN THE SAME SUBJECT.[2]

Dr. Cushing: I would like to call attention to one thing and that is to the advantage to be derived in similar cases from drainage of the abdominal cavity, after opening it. Of course we all meet with these sad cases where there is malignant disease in the abdominal cavity and it is not always easy to say where it starts, but there are various advantages to be obtained merely as a palliation by making an opening large enough to put a drainage-tube into it. In the first place, in tapping we are liable to set up a pretty severe hæmorrhage. Secondly, the diagnosis in such cases is often obscure and even where we have malignant diseases it may be limited to an ovary, for a very large proportion of solid ovarian tumors are already practically, or will later become malignant. I have had a number of cases where for one reason or another I have opened the abdomen and found cancerous infection of the abdominal cavity similar to that described here, have drawn off the fluid, washed out the cavity of the abdomen and left a drainage-tube in. Often a large amount of serum will come away each day for a number of days, and then the serum stops coming and does not in my experience reaccumulate. I believe the experience of other surgeons has pretty well settled the fact that in these cases an opening followed by drainage is very likely to relieve the patient from the recurrence of fluid. Why this is so, nobody pretends to explain.

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[2] See page 329 of the Journal.

Dr. Cutler: The canula was left in several times until the patient requested it to be removed. Emptying into a large impervious dressing and hoping it would do the patient good, but evidently the patient did not think so. In one of the cases I left it four days. It seems to me that in many instances the patient emaciated a little more rapidly under the constant drainage than where it was not used. I let this patient do pretty much as she pleased because she was badly off. I did not expect to keep her in the hospital. She only came in to see if something could be done and was not a person to whom we could expect to do much good.

Dr. Belt: I should like to ask Dr. Cushing his plan of drainage.

Dr. Cushing: By a glass tube reaching to the bottom of the pelvis. I have had no trouble from reaccumulation of the serum. The fluid ran freely several days then stopped running, the tube was removed and a rubber tube was put in and when that was afterwards removed the opening closed. I did not understand when the paper was read that anything was said about permanent drainage.

Dr. Cutler: I reported the case to show that there was cancer and sarcoma in the same patient. I did not lay stress on the treatment.

Dr. Blodgett: I would like to mention one incident occasionally noticed in abdominal growths; that is the tendency sometimes observed toward a change on the part of the growth, from something that is innocent as far as known, to a form of disease which is at first, or becomes later, malignant in character. Five or ten years ago I made the autopsy upon a woman who had suffered for many years from what was thought to be an enormous uterine fibroma accompanied by a large effusion of serum in the abdomen. Repeated examination after tapping the belly only confirmed the diagnosis. At the autopsy a fibroid was found which had grown to enormous dimensions so that the later years of life were a burden. By the exercise of great fortitude this lady managed to get a great deal of comfort out of life. A sudden complication arose at the time of one of the tappings, which was connected with the appearance of acute peritoneal symptoms: there were rising temperature, great distension and signs of impending dissolution, and the patient died after about thirty hours. At the autopsy it was found that as far as the diagnosis could be made, corresponding with the time of the onset of serious symptoms, there had developed an almost universal sarcoma, diffused throughout the abdomen and intra-abdominal organs. It seemed evident that a sudden change had taken place in the nature of the growth which was followed by all the symptoms of acute diffuse peritonitis which was speedily fatal. Such an indication to me would be sufficient for immediately recommending an exploratory incision in cases which were obscure, rather than to further trust expectant treatment or tapping.

SPECIMENS.

Dr. Cushing showed a rapidly growing soft myoma, and drew attention to the great difficulty of making a diagnosis between this condition and pregnancy, even after opening the abdomen.

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Recent Literature.

The Diagnosis of Diseases of the Nervous System. By Christian A. Herter, M.D. 12mo, pp. viii, 628. With sixty illustrations. New York: G. P. Putnam's Sons. 1892.

In spite of the great number of treatises on diseases of the nervous system, and monographs upon special subjects, which are constantly appearing, manuals of diagnosis are comparatively rare. The best manuals in other languages have unfortunately never been translated, and those in English either are somewhat out of date or else lack certain desirable features. The instructor in nervous diseases will therefore welcome this new work by Dr. Herter, which is, as far as we are acquainted, the best work on diagnosis that has yet appeared. It is "designed to aid the student and general practitioner in the recognition of the commoner forms of nervous disease." The first chapter treats of the structure and functions of the nervous system, — a preliminary chapter that must for a good while be necessary. Here "little else has been attempted than the presentation of those facts regarding the motor and sensory paths that are of practical importance in diagnosis." The selection of facts has been well made, the illustrations are clear and simple, and the chapter serves as a useful introduction. In the second chapter the various symptoms of nervous disease are described and their significance is dwelt upon. The next two chapters are upon the diagnosis of the position and the nature of the lesion. The arrangement involves a certain amount of restatement of facts, which has been done, wisely, as we think, from deliberate choice. The fifth chapter, on the diagnosis of clinical types, treats of the symptoms of the various diseases and especially of differential diagnosis. The distinction between organic and functional disease forms practically a continuation of the preceding chapter. A special chapter is devoted to the examination of the patient, and here we could wish that the author had been a little more diffuse; suggestions as to the methods of care-taking would not have been amiss, and still further repetition of what had been said in the previous chapters would have done no harm; much reiteration is unfortunately always necessary for the average student. The work closes with a rather unique feature; an analysis, according to the methods laid down in the preceding chapters, of fifteen actual cases, — a portion of the book that we would commend to the student for careful study. There are naturally a few statements to which exception might be taken, and a very few defects. The section on hysteria is inadequate, stress is not laid upon the French doctrine of hysterical stigmata and no mention is made under hysteria of contraction of the visual field, while the possibility of permanence of hysterical manifestations is too little regarded. The section on the traumatic neuroses is inadequate and exhibits only too markedly the confusion that still reigns upon this group of affections.

The merits of the work are very great. It is clear, concise, and accurate. It is excellently arranged and thoroughly systematic. We know of no work, not even the admirable Italian manual by Bianchi, which is a better guide for the student and practitioner in the difficult subject of diagnosis of diseases of the nervous system.

A Dictionary of Psychological Medicine. By D. Hack Tuke, M.D., LL.D. Philadelphia: P. Blakiston, Son & Co. 2 vols., pp. 1405.

Although this work abundantly justifies its modest title, it is vastly more than a dictionary. It is an elaborate and complete encyclopædia of psychological medicine, in fact a small library in itself on that subject. The high expectations which Dr. Tuke's work in this field had raised, are more than fulfilled in the volumes before us. The object of the dictionary is, to quote from the preface, to provide information more or less systematic in regard to the definition, etymology, and synonyms of the terms used in medical psychology, with the symptoms, treatment and pathology of insanity, together with an abstract of the laws of Great Britain and Ireland. The philosophy of the mind is expounded in a separate article. The history of the insane and the reforms undertaken to ameliorate their condition in various countries of the world are fully given. Another and unusual feature, is a bibliography illustrative of the literature of insanity, confined to works in the English language.

Although the burden of the work has been borne by the author, he has been aided by a large list of contributors, among whom are many famous authorities on mental disease in Great Britain, France, Germany, Italy and this country. Other departments of medicine and other sciences are represented by Robert Barnes, Bernheim, Bristow, Alex. Bruce, Brunton, Buzzard, Charcot, Sir Andrew Clark, Horsley, Playfair, Ribot, B. W. Richardson, Ringer, Romanes, Siemerling, Thudichum, Samuel Wilks, and other men of eminence.

In so much that is of interest and of solid value, it would seem invidious to particularize, but we cannot forbear mentioning the full and satisfactory articles on "Alcoholism," by Legrain; "Brain," Alex. Bruce; "Criminal Responsibility," Orange; "Developmental Insanities," Clouston; "General Paralysis," Mickle; "Hysteria," Charcot and Pierre-Marie; "Neurasthenia," Arndt; "Pathology of Insanity," J. B. Tuke and Woodhead; "Sedatives," Ringer; "Diagnosis," Mendel; "Syphilis and Insanity," Savage; "Jurisprudence," Renton; "Mania of Persecution," Parant, besides the many contributions by the author.

Few books are more open to mistakes of omission than a dictionary. At the same time we very much doubt if any future dictionary of the sort will be found to be more complete, accurate, up-to-date, and generally satisfactory, than this one, the only work of the kind extant.

A single review cannot possibly do justice to individual articles or the work as a whole. It is enough to add that it will be found to be a most valuable reference hand-book for the alienist and student of psychological medicine. The general physician also cannot fail to find the book exceedingly useful in special cases.

An American Text-book of Surgery for Practitioners and Students. By Charles H. Burnett, M.D.; Phineas S. Conner, M.D.; Frederic S. Dennis, M.D.; William W. Keen, M.D.; Charles B. Nancrede, M.D.; Roswell Park, M. D.; Lewis S. Pilcher, M.D.; Nicholas Senn, M.D.; Francis J. Shepherd, M.D.; Lewis A. Stimson, M.D.; William Thompson, M.D.; J. Collins Warren, M.D.; and J. William White, M.D. Edited by William W. Keen, M.D., LL.D., and J. William White, M.D., Ph.D. Profusely illustrated. Philadelphia: W. B. Saunders. 1892.

This book marks an epoch in American book-making. It is a conjoint book, all of the proof sheets having been submitted to the authors for mutual criticism and revision; so that it may be considered to be a consensus of the surgical opinion of the authors. It is intended to serve as a text-book for American students. As a whole we like the book, but it has certain defects. It fails entirely to give to the student's mind a proper value of the relative importance of subjects; for instance, the surgery of the genito-urinary tract occupies one hundred and twenty-six pages, while the surgery of fractures, which is of great importance to the student, occupies only forty-eight pages. The surgery of the head and of the abdomen occupy a prominent place in the volume. It is questionable whether such distinct specialities as the eye and ear should be included in a text-book of surgery. All in all, however, the book is distinctly the most satisfactory work on modern surgery with which we are familiar. It is thorough, complete and condensed. It is very large (1175 pages), and its bulk and its intended use as a text-book for students, should have accorded it a stronger binding. Some of the cuts are not satisfactory; many of them are works of art. It is unfortunate that the publishers did not accord to the book better printing and a more even standard of cuts.

The Surgical Treatment of Neuralgia of the Fifth Nerve (Tic-Douloureux). By William Ross, M.B., B.S. (Lond.), F.R.C.S. 8vo., pp. viii, 85. With nineteen illustrations. London: Baillière, Tindall & Cox. 1892.

Probably no one is better qualified to speak of the surgical treatment of tic-douloureux than the surgeon who first ventured to remove the Gasserian ganglion for the relief of that condition, and his Lettsomian lectures of the current year are certainly the most complete if not the only monograph that has appeared upon the subject. The first lecture deals briefly with the ætiology, pathology and symptomatology of the disease, full notice being taken of the recent pathological researches of Dana and J. J. Putnam in this country. The evolution of surgical treatment is then dwelt upon, from the simple operations of neurotomy first done by Schlichting and Maréchal a hundred and fifty years ago, to the more radical operations by Lücke-Sonnenburg and Braun-Lossen of dividing the nerve at the foramina at the base of the skull. All the varied methods of reaching the branches of the nerve in different parts of its course, from the orbital and mental foramina to the base of the skull are carefully described, and the author adds a description of the method of deepening the sigmoid notch, which Horsley and he have adopted as the easiest means of reaching the foramen ovale and foramen rotundum. In the majority of cases, no matter how radical the operation, the pain has eventually returned, so that two years ago, as has been already noted in these columns,[1] Mr. Rose removed the Gasserian ganglion with success. The last lecture gives full directions for performing the operation, with a report of six cases operated on by him, and two by Dr. Andrews of Chicago. In only one case did the operation prove fatal, although trophic changes have occurred in the eye. The results thus far are thought to be encouraging, but the longest period since the operation is only twenty-two months, and in one case there has been some recurrence of pain. Even in removal of Meckel's ganglion relief has been obtained for over three years, so that the future must determine the merit of the operation. The work, as we have said, is the most complete monograph on the subject, and is essential for the neurologist as well as for every surgeon who may undertake to operate upon the fifth nerve.

Pye's Surgical Handicraft. A manual of surgical manipulations, minor surgery, and other matters connected with the work of House Surgeons and Surgical Dressers. With 300 illustrations on wood. First American from the third London edition. Revised and edited by T. H. R. Crowle, F.R.C.S., Surgical Registrar to St. Mark's Hospital, and Surgical Tutor and Joint Lecturer on Practical Surgery in the Medical School. Complete in one volume. New York: E. B. Treat, 5 Cooper Union.

This work, which is the first American from the third London edition, has apparently supplied a long felt want. Its aim is an excellent one; but the manner in which the work is executed is not satisfactory. Many of the methods advocated are antiquated, and some of the descriptions are vague; as for example, in speaking of plaster-of-Paris the author states that, "A few words as to the manner in which plaster-of-Paris should be practically handled, when used for the purposes of support, or any other surgical objects, may be useful. It should be recollected that, except it is used on a very small scale, it is always a very messy thing to apply, and it is difficult to clean up afterwards. Clothes, carpets, and everything that is upholstered, should be protected or removed. Aprons and sleeves (or bare arms) will be wanted also." The author is evidently not familiar with the modern method of using plaster-of-Paris.

Many of the cuts are misleading. Figure cxxv, Malgaigne's hooks, is a modification of that useful instrument. The chapter on the antiseptic dressing of wounds, and the aseptic precautions of operative surgery, is ten years behind the times. The work may be useful to the author's students, but it will be unfortunate if it is accepted as an international authority on so important a subject as surgical handicraft.

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[1] See the Journal, January 1, 1891.

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THE DISCUSSION ON THE TREATMENT OF CHRONIC BRIGHT'S DISEASE AT THE FRENCH ACADEMY OF MEDICINE.

At the Académie de Médecine in Paris, sessions of August 30th and September 6th, the subject of the dietetic and other treatment of Bright's disease was the topic of discussion.

There was substantial agreement as to the necessity of a general restriction of albuminoids for fear of augmenting the albuminuria: but Germain Sée was of opinion that eggs might be permitted, provided they were well cooked. He was also in the habit of allowing white meats and fish, provided patients have a good digestion. The dark meats augment the production of albumen in these renal diseases and promote the morbid alterations, although it is difficult to give a satisfactory reason for this, seeing that in well persons a meat diet does not give rise to albuminuria. Broths must also be prohibited by reason of the potash and the ptomaines and extractives which they contain. It is true that in healthy individuals one has never remarked harm from this source, and the toxicity of broths in renal diseases is yet to be accounted for.

Dujardin-Beaumetz thought that in Bright's disease the element of permeability of the kidneys should have principal emphasis; the amount of albumen in the urine plays but a secondary rôle from the point of view of prognosis and treatment. It is entirely on considerations connected with the permeability of the kidneys and the danger of retention in the economy of toxines that the treatment, and especially the dietetic treatment of Bright's disease should be founded. The indications are to facilitate by the supplementary emunctories the elimination of toxines, and to limit as much as possible their production. To promote elimination, purgatives should be the first resort, then diaphoretic agencies and diuretics may be employed. The second indication is met by intestinal antisepsis and a proper dietary regimen. Intestinal antisepsis may be obtained by the internal administration of benzonaphthol, three to five grammes a day; in order to reduce to a minimum the formation of toxines, the vegetarian regimen in all its rigorousness should be prescribed, all meats being prohibited. The same prohibition applies to alcohol. Eggs are permitted, "as it has never yet been proved that eggs, even when raw, have increased the quantity of albumen in the urine." Fruits and green vegetables generally may be allowed, but cabbage is to be interdicted. Cereals generally, especially rice, and potatoes "which are three times and a half less nutritious than rice," are unobjectionable. When the patient is menaced with uræmia, the exclusive milk diet is to be advised.

With regard to this question of the prescribing or withholding of animal food and eggs in nephritic complaints, it is noteworthy that Schreiber takes the view that the leading authorities, especially Senator, have acted too much from theoretical considerations. He experimented upon eight persons with renal disease, giving them, along with their ordinary diet, six to ten eggs daily. Before the experiment, they were observed until the daily amount of albumen had been determined and its fluctuations noted. The same observations were made after discontinuing the eggs. In fever cases the eggs were boiled; in the others they were eaten raw. Of the former, the patients ate six eggs daily, and in not one case could any increase of albumen be noted. In the second group, six to ten raw eggs were daily administered to each patient, and not only did not increase the amount of albumen in the urine, but led to its diminution. Similar results are reported from Leyden's clinic, and these observations agree with those of Oertl, who states that considerable albuminous food may affect albuminuria favorably,[1] and opposes the idea of a special dietary.

While there are, however, doubtless many in the profession who agree with these German authorities, and permit a mixed diet in chronic, not too advanced cases, there is a predominant tendency everywhere to regard the loss of albumen as an important symptomatic indication for treatment; and if there are yet insufficient data to prove the noxiousness of eggs as an article of diet, the recent investigations of Stewart go to show that the prolonged use of meat and meat extracts, especially if taken in large amounts, is apt to aggravate any inflammatory disturbances in the kidneys.[2]

There is no contention as to the utility of milk diet in Bright's disease; this should sometimes be absolute in the acute forms, and even in the chronic forms; at all times and in all stages milk when well borne may be taken to advantage as a part of the daily dietary. In interstitial nephritis, the utility of milk as an exclusive aliment is not, in the opinion of Germain Sée as expressed at the recent meeting (*vide supra*) so clearly indicated; at the best, it is only an adjuvant aliment. He would, however, regard milk as unequalled in the parenchymatous (dropsical) forms, both as a food and as a diuretic. Where milk is not tolerated, Sée often gives to advantage *lactose*, which as a diuretic "is the least irritant of all, and does not interfere with the ordinary dietary of the patient."

In interstitial nephritis (from whatever cause) there is, according to Sée, one vital indication to meet; to sustain the forces of the patient. To this end, he does not hesitate to prescribe a fortifying regimen, "as albuminous as in a state of health," and composed of a due admixture of albuminoids and carbo-hydrates. He would allow both white and dark meats, the nitrogeneous legumes, milk, eggs, butter, and a little Bordeaux wine.

As for the pharmaceutical treatment, Sée repudiates the greater part of the medicines which have been in use; he opposes vesicatories, local blood-letting, and sudorifics under every form. He rejects diuretics, with the exception of lactose, and questions the utility of the cardio-vascular medicaments (digitalis, strophanthus, etc.), and all ferruginous preparations. The only medicaments in which he has any faith are the iodides, which are especially applicable to the specific affections of the kidney, and the salts of strontium and of calcium under the form of bromides, lactates or chlorides, which have given him gratifying results.

At the same meeting, Dr. H. B. Millard, of New York, remarked that in Bright's disease, there is nothing to hope when the epithelium is destroyed; nevertheless, if the disease is not curable of itself, the physician is not powerless against the acute accidents of the disease.

The cases susceptible of practical cure are those in which the renal cirrhosis is much circumscribed, and where a great extent of the kidney is still functionally sound. It is the same when only one of the kidneys is affected.

From the point of view of prognosis, he thinks that ordinary chronic albuminuria, due to glomerular lesions without lesions of the tubes, is never cured, whether there be albumen in the urine or not. In the large white kidney, amelioration is even more rarely observed than in renal cirrhosis; he has, however, seen a few cases with abundant albuminuria get well, but these certainly could not have been instances of the large white kidney or the fatty kidney; probably he had to do here with simple tubular nephritis.

As for acute Bright's disease, malarial and syphilitic nephritis, their curability has been sometimes observed.

As for the treatment, he keeps his patients in bed in the grave forms and prescribes the milk diet and a light azotized regimen.

As for medicaments in Bright's disease, he has often obtained benefit from the employment of ergotin, caffeine, digitalis, arsenic, as well as from the albuminates and chlorides of iron. The treatment by the sodic-bicarbonated waters has also given him good results in certain forms of Bright's disease when the liver was also implicated.

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[1] Berlin klin. Woch., June 10, 1889. Sajous's Annual, 1890, vol i, p. 17, G.

[2] Oesterr, Ungar: Centralblatt für die Medechinischen Wissenschaften, Vienna, March 21, 1891; Weekly Medical Review, St. Louis, May 30, 1891.

FUSION OF HANDS.

In the Memoirs of the Boston Society of Natural History, Dr. Thomas Dwight gives a detailed account of an interesting specimen which has been in the Harvard Medical School Museum for some time, coming originally from a case described in 1852 by Dr. J. B. S. Jackson. This case of polydactylism in which the increase of the number of fingers clearly springs from the fusion of two more or less complete hands and forearms is an extremely uncommon one. Fifteen similar cases, most of them very incompletely described, are mentioned by the author, one of which dates back to the sixteenth and three to the seventeenth centuries. The specimen he described is the left arm of a German machinist, thirty-seven years old, who died at the Massachusetts General Hospital in 1852. The arm had been made into an old-fashioned dried and varnished preparation. There is no account of any deformity excepting of the left arm, except that it is inferred from incomplete records that the patient was morally deficient. A cast taken after death shows the left forearm and a very broad hand having four normal fingers and, in place of the thumb, the three inner fingers of the right hand which were smaller than the others. There are no traces of thumbs, but the hand was a useful one, the three upper fingers being used as a thumb to oppose the three others. The scapula of that side is very peculiar, the supra-scapular notch is broad and so deep as to pass below the spine, the spine is so slanted that what is called the upper surface of the acromion looks almost directly outward. The forearm consists of the normal left ulna and of a right one in the place of the radius. The left one is practically normal. The extra ulna is put on hind side before, so that the back of the olecranon projects forward over the front and outer aspect of the humerus. The internal condyle of the humerus is normal. Under the olecranon fossa is a thick swelling representing the normal outer condyle plus another of a right humerus applied to the normal bone at nearly a right angle. A prominence somewhat to the outer side of the front of the normal humerus represents the internal condyle of the right one. Between these two is the joint of the extra ulna. At the wrist the carpus articulates with the lower end of the two ulnæ, there being no radius, and consists of eight bones, the ulnar side of the carpus being reduplicated and the radial side wanting.

The muscles, tendons and nerves are equally extraordinary and complicated and some of them hard to follow. In general those which normally rise from or supply the radius or the thumb are wanting, whereas those normally supplying the ulnar side are duplicated. The brachial artery after a high division gives off a more or less normal ulnar. The other branch runs at first superficially like a radial and then changes into an ulnar supplying the extra side of the hand. The musculo-spiral nerve in like manner gives off a branch in the place of the radial which becomes a supplementary ulnar nerve.

The author discusses the similarities between this case and some others reported, especially one recently reported by Dr. Jolly in the *Virchow Festschrift.* In Jolly's case the patient is alive and the author suggests that the two bones of the forearm are probably both ulnæ. The cause and the process of production of this deformity is so obscure that any commonly accepted theory fails to offer a satisfactory explanation.

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PREVENTIVE INOCULATION FOR CHOLERA.

The experiments which Haffkine has been engaged in recently in the laboratory of Pasteur, although as yet incomplete, have been the cause of much discussion in Paris, especially in the daily press. In order to procure intensification of virus by passing through a series of animals, a dose of virus collected from a gelatine plate in sufficient quantity to kill several animals was injected into the peritoneal cavity of the first guinea-pig. The animal died with a peritoneal effusion abounding with microbes, the fluid varying with the size of the animal, being abundant and dilute in a large-sized animal. This fluid was left for several hours exposed to the air at the ordinary temperature, after which it was inoculated into other animals.

A series of transmissions leads to the production of a virus which is constant in its lethality, and whose poisonous properties have increased about twentyfold. This virus if injected subcutaneously does not kill but provokes great œdema of the surrounding tissue, and subsequently necrosis. This confers immunity, but to prevent the necrosis a previous inoculation with attenuated virus is necessary.

To procure an attenuated virus it is cultivated in bouillon at a temperature of 39° C., and in an atmosphere kept constantly aërated. Under these conditions the cholera vibrio perishes rapidly. In order to prolong the experiment sufficiently long for the procuring of the attenuation, the microbe is re-sown in a fresh culture medium every two or three days. In this way attenuated virus is obtained for inoculation. The animal subjected to inoculation, first with attenuated and then with intensified virus, becomes incapable of contracting cholera.

On July 18th, Haffkine introduced into his own flank a dose of the attenuated vaccine. There was slight constitutional disturbance and local inflammation which, however, soon subsided. Six days later intensified vaccine was injected with again only slight disturbance. After this others received the inoculation with similar results. The harmlessness of this inoculation was thus demonstrated, although it is uncertain whether immunity against Asiatic cholera in human beings is thus accomplished. Several persons have already received this inoculation, among them a correspondent of the *New York Herald*, whose full length portrait appears in the European edition of the paper together with a graphic account of what it is like and how it feels.

MEDICAL NOTES.

Pleuro-pneumonia.— The Secretary of Agriculture has issued a proclamation declaring that the United States is free from the disease of cattle commonly called pleuro-pneumonia. It is hoped that cattle from this country will henceforth be allowed free admission to Great Britian.

Cholera. — During the past week the number of cases of cholera in Hamburg has diminished and but few are reported from other cities. The epidemic has spread to Odessa and a few cases have occurred at Buda Pesth and other places on the Danube, and in Austrian Poland. There have been no cases in the city of New York since September 19th, and no new cases in the New York quarantine for the last week.

University of Minnesota. — The new medical buildings of the University of Minnesota have just been opened with appropriate exercises. The Governor of Minnesota made the presentation of the buildings to the Board of Regents of the University. Dr. William Osler, of Baltimore, made an address on "Teachers and Students."

The American Orthopedic Association. — At the recent meeting of the Association the following officers were elected to serve the ensuing year: President, Dr. A. J. Steele, St. Louis; Vice-Presidents, Dr. Samuel Ketch, New York, and Dr. Arthur J. Gillette, St. Paul; Treasurer, Dr. A. B. Judson, New York; Secretary, Dr. John Ridlon, 34 Washington St., Chicago.

Glasgow University Chair of Surgery. — The vacancy in this chair caused by the death of Sir George H. B. Macleod has been filled by the appointment of Dr. William Macewen. The position of Surgeon in Ordinary to the Queen in Scotland, formerly held by Sir George Macleod, has been given to Dr. Alexander Ogston, Regius Professor of Surgery, University of Aberdeen.

The First International Congress of Gynecology and Obstetrics was opened in Brussels on September 14th by Dr. Kufferath, the president; with an attendance of over four hundred. The principal subjects discussed were, Pelvic Suppuration, Ectopic Gestation and Placenta Previa. On the 15th the King attended the meeting and listened to the discussion, after which he received the members at the palace. On the 17th the Congress adjoured, after electing an international permanent committee, and agreeing that the next meeting should be held in Geneva in 1895.

The Second International Dermatological Congress was held in Vienna from September 5th to 10th. The President, Professor Kaposi, opened the first sitting by congratulating the members on the large number that had assembled. The meeting of the second Congress in Vienna was another tribute to the memory of Hebra, who brought the specialty into such prominence. The Minister of Education, Mayor of Vienna and the Dean of the University also welcomed the foreign visitors. Professor Neumann represented the Dermatological Institute of Vienna, sketching its progress. This branch in the early history had confined itself to the investigation of syphilis and some of the more important affections of the skin. The general secretary reported 300 members and more than 100 papers. The work of the Congress was begun with a discussion on Leprosy in Europe, which was followed by a large number of papers on different subjects. An exhibition of instruments, plates and other objects was opened for the session. The next Congress will be held in London in 1895.

A Novel Plan for Selecting a Health Officer. — The Board of Health of Savannah, Ga., says the *New York Medical Journal*, recently held a competitive examination of applicants for the position of quarantine officer at that port. The questions asked were such as a port physician should know, and were by no means easy.

Whittier's Will. — By the will of the late John G. Whittier, the Haverhill City Hospital receives a bequest of $1,000. After numerous other public and private bequests, the will leaves "the remaining one-half of the rest and residue" of the estate, in equal shares, to the Amesbury and Salisbury Home for Aged Women, the Anna Jacques Hospital in Newburyport and the Normal and Agricultural Institute for colored and Indian pupils at Hampton, Va.

Astley Cooper Prize.— The next Triennial Prize of three hundred pounds, will be awarded to the author of the best essay or treatise on "The Anatomical Distribution of the Lymphatic Vessels and the Physical Forces concerned in the Movement of the Lymph." Candidates are informed that their essays, either legibly written or type-written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to Guy's Hospital on or before January 1, 1895, addressed to the Physicians and Surgeons of Guy's Hospital. Each essay or treatise must be distinguished by a motto, and accompanied by a sealed envelope containing the name and address of the writer. For further particulars of the conditions to be complied with, apply to Dr. Hale White, 65 Harley Street, London, W.

Cholecystotomy. — The *Medical Press and Circular* calls attention to some of the words which have been introduced into medicine by the advance in the surgery of the gall-bladder and liver. Some of these terms have truly an alarming look about them, apart from the loss of dignity which is calculated to ensue on any attempt being made to pronounce them. For instance the word "cholecystolithotripsy," which means an exploratory abdominal section with crushing of the calculus through the intact bladder wall, or the wall of the cystic canal. Then there are "cholecystotomy," "cholecystectomy," "cholecystenterostomy" — the establishment of a fistulous passage between the gall-bladder and the intestine; choledolithotripsy," meaning crushing the calculus obstructing the ductus communis choledochus *in situ*, and without incising the walls of the canal; "choledochotomy," that is, incising the ductus communis choledochus; and further, we have, "choledochostomy," "choledocho-enterostomy," "hepaticostomy" (incision of the hepatic canal), and "hepatostomy" (incision of the liver and intra-hepatic canals). All these are perfectly easy when you know them; but like Mark Twain, who came to terrible grief over the genders of German nouns, a surgeon might speak of one operation when he meant another, and yet to put himself right mention a third which still further "had nothing to do with the case."

Street Car Hygiene. — A letter from a medical man to one of the Berlin daily papers says that the human body is not adapted to standing for hours together as conductors and drivers on street-cars are often obliged to do, but that it needs the alternation of work and rest, and that the interval of a minute or two at the end of the route can hardly be regarded as deserving the latter designation. The principal consequence is that disturbances of the circulation set in, followed, above all, by varicose veins, which in time, or as old age approaches, may result in chronic ulcers of the leg. He suggests that these men be provided with small folding-seats which would not diminish the room for passengers but would greatly improve the situation of the drivers and conductors. It would be interesting to know how far these statements are supported by statistics.

BOSTON AND NEW ENGLAND.

The Warren Triennial Prize of $500 has been awarded by the staff of the Massachusetts General Hospital to John Strahan, Belfast, Ireland. Subject, "Rickets."

The Entering Class at the Harvard Medical School, which it was expected would be small this year on account of the introduction of the compulsory four years' course, is on the contrary very large.

The Steamer Marathon of the Cunard line arrived in Boston two weeks ago with a few hundred steerage passengers. After having been detained in quarantine for ten days, the city authorities announced that they were willing to release her if the twenty day proclamation of the President was not thereby prejudiced. The United States authorities at first were willing to allow any passengers who were citizens of the United States to land, which they accordingly did. Later they announced their willingness that the steamer should be released, and by a mistake of the Captain she came to her dock before being officially released by the City Board, bringing with her a few cases of measles which should have been taken off at quarantine. She was accordingly ordered back to the lower harbor. After thinking it over for a few days she complied with the order.

Sale of the McLean Asylum Estate. — The entire piece of real estate of the Massachusetts General Hospital Corporation in Somerville, has been sold to the Boston and Lowell Railroad Corporation. The sale was concluded at a special meeting of the Board of Directors of the Boston and Maine last week. The estate comprises, beside numerous buildings, over one hundred acres of land adjoining the Boston and Lowell, Fitchburg and Grand Junction Railroads, beside a valuable water front on the Mystic River. The agreement provides that as long as the McLean Asylum shall occupy the estate, the Massachusetts General Hospital Corporation may, for a period not exceeding three years, retain the exclusive use of certain buildings and portions of the land specified. They shall also have the right to remove the greenhouses, shrubs, flowers, boilers, piping and cooking apparatus, and any other article inside or outside the buildings that may be useful at the new asylum at Belmont, it being understood that no such articles are to be removed for the purpose of sale.

A Suspected Case of Cholera in Lynn.— Much local excitement was caused last week in Lynn by the report that a recently arrived Jewess was seized with cholera. Bacteriological examination of the dejecta failed to show any comma-bacilli.

A Garbage Crematory not a Nuisance.— It has been decided by Judge Hopkins in Lowell that the erection of a garbage crematory could not be adjudged a nuisance until it had proved itself to be so. He refused to grant a temporary injunction restraining the city of Lowell from the erection of a crematory, and decided that if any one found himself injured after the furnace is in operation he would have remedy at common law.

NEW YORK.

Willard Parker Hospital. — On September 28th, President Wilson of the Board of Health presented to the Conference Committee of the Academy of Medicine the architect's plans for the new buildings which the Board proposes to erect at the foot of East 16th Street, in connection with the present Willard Parker Hospital for contagious diseases. The plot of ground on which the latter stands is 400 feet deep and 800 feet wide. It has a water frontage on two sides, with ample depth of water to enable the largest vessels to reach the wharves. On the site of an old frame building at the extreme east end of the grounds will be erected a one-story brick reception hospital, which is to be entirely fire-proof, 150 feet long and 60 feet wide, and will contain sixteen separate wards. Next to this will be the administration building, also of brick, and two stories high. To the north of this will be the isolation hospital, where the worst cases of cholera or other epidemic diseases will be placed. It will be 40 by 50 feet. A long building in the rear of the Willard Parker Hospital, at present used by the Dock Department as a storehouse, will be fitted up as a house of detention for cholera suspects.

Glanders. — A young Russian, twenty-eight years of age, recently died at St. Catherine's Hospital of glanders, contracted from a horse. The patient had been employed in skinning the carcases of horses sent from the city to Barren Island, where they are utilized by a fertilizing company. Two weeks before his death he skinned a horse that had died of glanders, and in scratching a mosquito bite on his head some of the infectious material from the animal was carried by his hand to the abraded surface of the scalp. After his admission to the hospital he was delirious most of the time. Numerous hard pustules appeared on the face and other parts of the body, and various joints were the seats of abscesses. Forty-eight hours before death his nose became swollen to twice its normal size.

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Miscellany.

THE WORD LAPAROTOMY.

Dr. R. P. Harris, of Philadelphia, protests against the word laparotomy for abdominal section. Its derivation is evidently from the two Greek words, *lapara* and *tomæ*, to cut, but in ancient Greek anatomy the belly is always described by the word *koilia* and never *lapara*. The latter term was applied in the time of Hippocrates to the parts between the short ribs and the iliac bone. The operation for lumbar hernia or lumbar colotomy would therefore be more properly described by laparotomy. The word originally meant a hollow, and was for this reason given to the hollow of the waist. The misapplication of the term commenced in the year 1811, in the medical thesis of a Wittenberg student. The correct word for abdomen being *koilia* the natural synonym of gastrotomy in its old meaning is cœliotomy. This word has been adopted by some authorities in text-books of surgery, and by several medical writers. It allows us several compound terms such as cœlio-hysterotomy for Cæsarean section, and cœlio-nephrectomy. The author called attention to the desirability of this change two years ago, and again suggests that an effort be made to abandon the word laparotomy when abdominal section is meant and substitute the more correct word cœliotomy.

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ON THE REFLEX THEORY IN NERVOUS DISEASE.[1]

The subdivision of practical medicine into a great number of specialties, according to Dr. L. Bremer, has not proved an unmixed boon to either science or the welfare of humanity. The reports of specialists abound in cases in which following the successful treatment of a disease of the organ to which they pay special attention, symptoms in distant organs have vanished. There is a very general erroneous conception and interpretation of reflex action in disease. The physiological law has been lost sight of. The theory of reflex action in disease has been called to aid in the explanation of morbid conditions which had absolutely nothing to do with that law. "Associated sensations" or "co-sensation" have been mixed up with reflexes.

The injurious results of unnecessary "local treatment" for a variety of so-called reflex neuroses, resulting from some slight or only fancied abnormality of the genital organs in women are forcibly dwelt upon. He says: "There is scarcely a female between twenty and forty-five admitted to the asylum that has not been treated for womb disease as the probable cause of insanity." Such unscientific treatment does much to intensify any mental trouble. So, to a considerably less extent, however, the nervous symptoms attending diseases of the bladder, prostate and kidneys in neurotic men have in many quarters given rise to the idea that such local conditions caused the nervous disorders reflexly. True nervous diseases have often been wrongly treated by some operative procedure for irritable urethræ, prostate, rectum, etc. The remarkable cures reported by oculists, aurists, etc., of various neuroses by appropriate local treatment are touched upon and doubt thrown on the results in many cases. Peripheral irritations naturally tend to intensify existing nervous derangements, but in treating the former the possible existence of a central disorder must not be lost sight of. "Of all the branches of internal medicine, however, which specialists ought to cultivate, and a satisfactory knowledge of which alone can prevent self-deception on the part of the physician and unjustifiable meddling harmful to the patient, neurology stands foremost."

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DISCUSSION OF ELECTRICAL EXECUTION.

The adoption of execution by electricity in New York State is the evidence of a tendency of our civilization in the direction of humane methods in dealing with criminals. A quicker and less repulsive method than hanging was considered desirable, and electricity was introduced as a substitute. Dr. A. D. Rockwell in a recent paper on the subject[1] argues that as the electric current is much more rapid than an impression conveyed through a nerve fibre, it is a mathematical impossibility that any human being, receiving in suitable form an electrical current of lethal energy should appreciate even for a fraction of a second the slightest pain. The guillotine and the garotte are practically instantaneous and painless, but public opinion in this country would not, probably, tolerate the mutilation or shedding of blood attending these methods. The action of poison as a humane means of execution does not seem to have commended itself to the philanthropic mind.

Owing to the strong opposition in the State of New York to electrical execution, a commission of three (the writer being one of the number) was appointed to decide upon the best methods of procedure, and to show that death by this means was painless and that no disfigurement need be caused. This commission's experiments on animals demonstrated that 1,000 or, at the most, 1,500 volts would instantly kill any animal; and it was naturally inferred that any human being would succumb even more readily. To be absolutely sure, it was recommended that not less than 1,500 or 2,000 volts be employed. In practice it was found that it is far more difficult to kill a man by electricity than any ordinary domestic animal. After the first contact of twenty seconds of voltage of 1,700, there was a slight fluttering of the pulse and apparently a slight expiratory effort. It has, therefore, been customary to repeat the shock once and sometimes twice, although there is no doubt that consciousness is instantly obliterated by the first shock, and there would be no possibility of resuscitation. The writer thinks the reasons for the need of this increased current-strength in the case of a human being are that the nervous tension operates directly to impede the action of the electricity, and also the blood being drawn from the surface of the body by fright, the surface-tissues are unnaturally dry and hence inferior conductors. The probable truth of this suggestion is borne out by the greater readiness with which men are killed from accidental contact with electrical energy, when the nerve force is in a passive state and the body flushed with the exertion of work.

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[1] The Journal of Nervous and Mental Disease, August, 1892.

[1] Journal American Medical Association, September 24, 1892.

In none of the executions have there been any repulsive disfigurement from burns or scalds, and in all but one or two the effects were so slight as to be unworthy of comment. To bring about this result requires, however, most intelligent and careful supervision, owing to the great heat developed on account of the limited area of operation, the high voltage and immense resistance. It is a question to be determined how the required force could be made to act exclusively in the life centres and thus avoid what might be considered a slight defect in the present method.

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THERAPEUTIC NOTES.

Methyl-Violet in Diphtheria.— Jaenicke[1] after experiments upon cultures of Loeffler's bacillus with methyl-violet reports a few cases of diphtheria in which the membrane was painted with this drug until it became a deep blue. In a few hours when the color had disappeared a second application was made. He noticed no bad results either local or general, and believes that it prevents the further development of new membrane. It seems to have a special antiseptic action on Loeffler's bacillus, preventing the growth even though not killing it, it should therefore be repeated frequently. It remains in the pseudo-membrane as well as in the mucous membrane of the mouth for an unusual length of time.

Cinnamic Acid for Tuberculosis. — Landerer has used this acid which is the active principle of the Balsam of Peru with good success. An emulsion made with oil of almonds, yolk of egg and solution of salt, made alkaline by potassium hydrate is injected into a vein. The treatment should be persisted in for from six to nine months, and for some time after the production of an apparent cure. He used it also in case of surgical tuberculosis. For lupus a four per cent. solution in alcohol containing also four per cent. cocaine is injected about each nodule.

Graves's Disease Cured by Nasal Operation.[2] — Müchold reports a case of Graves's disease in which he removed the posterior half of one of the inferior turbinate bones with the galvano-cautery, with immediate improvement in all the symptoms except the goitre, which was, however, readily reduced by a mild galvanic current. He suggests the possibility of the disease being sometimes due to some reflex disturbance.

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[1] Therap. Monatshefte, July.
[2] Rev. de Laryngol., July 15th.

METEOROLOGICAL RECORD,

For the week ending September 24, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...18	30.17	67	80	55	89	72	80	S.W.	S W.	14	20	O.	C.	
M..19	29.96	72	80	63	83	87	85	S.W.	N.W.	14	16	F.	O.	
T..20	30.32	56	62	50	67	51	59	N.	S.	17	8	C.	C.	.01
W.21	30.34	61	73	50	65	66	66	W.	S.W.	10	13	C.	C.	
T..22	30.34	61	71	50	67	82	74	S.W.	S.W.	9	9	F.	O.	
F..23	30.33	70	79	62	78	88	83	S.W.	S.W.	9	11	O.	R.	
S..24	30.20	71	75	66	81	90	86	S.W.	S.	9	7	T.	T.	
☞	30.12	65	74	58	76	76	76			12	12			.001

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 24, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,827,396	744	345	21.32	11.70	8.84	5 85	2.47
Chicago	1,250,000	495	228	15 80	7.60	2.20	4.20	5.40
Philadelphia	1,092,168	408	168	19.92	12.72	7.92	7.20	3.12
Brooklyn	955,333	380	192	25.74	8.06	13.78	4.42	2.60
St. Louis	477,873	190	77	20.67	3.21	15.90	1.65	.53
Boston	469,645	188	62	15.90	14.31	6.36	4.77	3.18
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	305,000	103	44	19.40	10.67	9.70	8.73	.97
Cleveland	281,353	92	43	28.08	7.56	12.96	6.48	8.64
Pittsburg	255,000	105	58	39.90	7.60	21.85	6.65	9.50
Milwaukee	234,440	—	—	—	—	—	—	—
Washington	230,360	147	48	26.52	12 04	6.12	4.76	3.40
Nashville	87,754	33	9	15.15	12.12	6.06	—	6.06
Charleston	56,048	34	12	17.64	17.64	5.88	—	5.88
Portland	40,000	16	6	18.75	—	12.50	—	6.25
Worcester	92,313	26	13	38.46	3.85	19.23	3.85	15.40
Lowell	82,455	45	27	26.64	4.44	17.77	—	6.66
Fall River	82,128	—	—	—	—	—	—	—
Cambridge	74,644	21	14	33.32	14.28	23.80	—	4.76
Lynn	60,809	18	7	33.33	5.55	22.22	—	—
Springfield	47,052	16	5	31.25	25.00	18.75	—	12.50
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	44,947	12	6	16.66	—	16.66	—	—
Holyoke	40,099	—	—	—	—	—	—	—
Brockton	32,783	10	5	—	—	—	—	—
Salem	31,495	8	2	25.00	25.60	25.00	—	—
Haverhill	30,065	9	3	11.11	—	—	—	11.11
Chelsea	29,479	11	2	—	18.18	—	—	—
Malden	27,252	14	3	14.28	14.28	14.28	—	—
Newton	26,498	4	3	—	—	—	—	—
Taunton	26,464	7	1	28.56	—	—	14.28	14.28
Gloucester	26,008	6	1	16.66	—	—	—	—
Fitchburg	25,444	6	4	—	—	—	—	—
Waltham	20,942	4	0	—	25.00	—	—	—
Quincy	18,669	7	2	28.56	14.28	—	—	14.28
Pittsfield	18,294	1	0	—	—	—	—	—
Northampton	15,684	5	1	—	—	—	—	—
Everett	14,745	4	1	—	—	—	—	—
Newburyport	14,031	7	3	—	—	—	—	—
Amesbury	13,561	2	2	50.00	—	50.00	—	—

Deaths reported 3,194: under five years of age 1,401; principal infections diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 696, consumption 319, acute lung diseases 247, diarrhœal diseases 301, diphtheria and croup 158, typhoid fever 124, malarial fever 33, whooping-cough 31, scarlet fever 26, cerebro-spinal meningitis 13, erysipelas 4, measles 4, small-pox 2.

From malarial fever Washington 11, New York 8, Brooklyn 7, Chicago 3, Charleston 2, Pittsburgh and Nashville 1 each. From whooping-cough New York 9, Brooklyn 8, Washington 5, Chicago and Philadelphia 4 each, Cambridge 1. From scarlet fever New York 7, Chicago 6, Philadelphia, St. Louis and Boston 3 each, Brooklyn 2, Pittsburgh and Lowell 1 each. From cerebro-spinal meningitis Chicago 5, Brooklyn and Washington 2 each, Lynn, Gloucester and Quincy 1 each. From erysipelas

New York 3, Lynn 1. From measles New York and Chicago 2 each. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending September 10th, the death-rate was 18.9. Deaths reported 3,688: acute diseases of the respiratory organs (London) 125, diarrhœa 652, scarlet fever 62, diphtheria 59, measles 54, whooping-cough 39, fever 30, small-pox (Halifax) 3.

The death-rates ranged from 10.2 in Norwich to 31.6 in Preston; Birmingham 19 3, Bradford 17.1, Bristol 15.6, Gateshead 21.8, Hull 20.9, Leeds 26.5, Leicester 18.5, Liverpool 23.5, London 16.6, Manchester 20 5, Newcastle-on-Tyne 23.9, Nottingham 14.3, Portsmouth 17.8, Sheffield 23.7, Sunderland 21.6, Swansea 15.2, West Ham 19.5.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending September 17th, the death-rate was 18.6. Deaths reported 3,643: diarrhœa 463, scarlet fever 65, whooping-cough 59, measles 54, diphtheria 54, fever 50, small-pox (Liecester and Halifax 1 each) 2.

The death-rates ranged from 9.7 in Huddersfield to 30.1 in Salford; Birmingham 18.7, Bradford 20.5, Bristol 13.8, Croydon 16.7, Derby 25.0, Hull 23.4, Leeds 22.2, Leicester 17.7, Liverpool 23.1, London 16.9, Manchester 21.5, Newcastle-on-Tyne 17.6, Portsmouth 18.2, Sheffield 21.2, Swansea 16.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 24, 1892, TO SEPTEMBER 30, 1892.

First-Lieut. S. R. Dunlap, assistant surgeon, U. S. A., is granted leave of absence for one month, with permission to apply for an extension of one month. Par. 2, S. O. 99, Hdqrs. Dept. of Texas, San Antonio, Texas. September 20, 1892.

First-Lieut. Wm. F. Lippitt, Jr., assistant surgeon, will proceed from camp at Eagle Pass to Camp Pena Colorado, Texas, and report to the commanding officer for temporary duty. Par. 3, S. O. 99, Hdqrs. Dept. of Texas, San Antonio, Texas. September 20, 1892.

Captain William Stephenson, assistant surgeon, U. S. A., is relieved from duty at Fort Ponter, N. Y., and ordered to Boise Barracks, Idaho, for duty at that station.

Captain Eugene L. Swift, assistant surgeon, U. S. A., promoted captain, to date from August 12, 1892.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING SEPTEMBER 24, 1892.

Hutton, W. H. H , surgeon. To proceed to Cape Charles Quarantine for special duty. August 27, 1892. To proceed to Sandy Hook, N. J., for special duty. September 10, 1892. Relieved September 16, 1892.

Hamilton, John B., surgeon. To report in Washington, D. C., for special temporary duty. September 2, 1892.

Sawtelle, H. W., surgeon. Detailed for special duty as quarantine inspector, Canadian frontier. September 5, 1892. To proceed to Sandy Hook, N. J., for special duty. September 16, 1892.

Stoner, G. W., surgeon. Detailed for special duty as quarantine inspector, Michigan ports. September 3, 1892.

Mead, F. W., surgeon. To proceed to Baltimore, Md., on special duty. September 24, 1892.

Banks, C. E., passed assistant surgeon. To proceed to Washington, D. C., for special duty. August 26, 1892. To rejoin station. September 8, 1892. To proceed to Washington, D. C., for special duty. September 22, 1892.

Devan, S. C., passed assistant surgeon. To proceed to Delaware Breakwater Quarantine for special duty. August 28, 1892.

Kalloch, P. C., passed assistant surgeon. To proceed to Portland, Me., for temporary duty. August 26, 1892. Detailed for special duty as quarantine inspector, Maine ports. September 8, 1892. To proceed to Washington, D. C., for special duty. September 15, 1892. To proceed to Portland, Me., for temporary duty. September 22, 1892.

Wasdin, Eugene, passed assistant surgeon. To proceed to Sandy Hook, N. J., for special duty. September 13, 1892.

White, J. H., passed assistant surgeon. To proceed to Way Cross, Ga., for special duty. September 19, 1892.

Kinyoun, J. J., passed assistant surgeon. To proceed to Baltimore, Md., on special duty. August 27, 1892. To proceed to Philadelphia, Pa., on special duty. September, 1892. To proceed to New York, N. Y., on special duty. September 21, 1892.

Cobb, J. O., passed assistant surgeon. To proceed to Sandy Hook, N. J., for special duty. September 19, 1892.

Stoner, J. B., passed assistant surgeon, To proceed to Sandy Hook, N. J., for special duty. September 13, 1892.

Wertenbaker, C. P., passed assistant surgeon. To rejoin station (Chicago). August 28, 1892.

Perry, J. C., assistant surgeon. To proceed to Norfolk, Va. for temporary duty. August 27, 1892. To proceed to Cape Charles Quarantine for special duty. September 8, 1892.

Stimpson, W. G., assistant surgeon. To proceed to Delaware Breakwater Quarantine for special duty. September 2, 1892.

Rosenau, M. J., assistant surgeon. To proceed to Cape Charles Quarantine for special duty. September 10, 1892.

Cofer, L. E., assistant surgeon. Granted leave of absence for sixty days on account of sickness. September 2, 1892.

Stewart, W. J. S., assistant surgeon. To proceed to Charleston, S. C., for temporary duty. August 26, 1892. To rejoin station (New York). September 2, 1892.

Strayer, Edgar, assistant surgeon. Assigned to temporary duty at Boston, Mass. September 6, 1892.

PROMOTIONS.

Geddings, H. D. Commissioned as passed assistant surgeon. September 2, 1892.

Wertenbaker, C. P. Commissioned as passed assistant surgeon. September 2, 1892.

APPOINTMENT.

Strayer, Edgar, M.D., of Pennsylvania. Commissioned as assistant surgeon. September 2, 1892.

PRIZE ESSAYS.

The American Medical Temperance Association, through the kindness of J. H. Kellogg, M.D., of Battle Creek, Mich., offers the following prizes:

(1) One hundred dollars for the best essay "On the Physical Action of Alcohol, based on Original Research and Experiment."

(2) One hundred dollars for the best essay "On the Non-Alcoholic Treatment of Disease."

These essays must be sent to the Secretary of the Committee, Dr. Crothers, Hartford, Conn., on or before May 1, 1893. They should be in typewriting, with the author's name in a sealed envelope, with motto to distinguish it. The report of the committee will be announced at the annual meeting at Milwaukee, Wis., in June, 1893, and the successful essays read.

These essays will be the property of the Association and will be published at the discretion of the committee. All essays are to be purely scientific, and without restrictions as to length, and limited to physicians of this country.

Address all inquiries to

T. D. Crothers, M.D., *Secretary of Committee*,
Hartford, Conn.

RECENT DEATHS.

Kendall Flint, M.D., M.M.S.S., of Haverhill, died September 28th, aged eighty-five years. He was born in Danvers, graduated from Amherst College in 1831, and from the Harvard Medical School in 1834.

John H. Douglas, M.D., formerly of New York, died in Washington, October 2d, aged sixty-eight years. He graduated from Williams College in 1843, and from the medical department of the University of Pennsylvania in 1846. During the war he held a high office in the United States Sanitary Commission. He was for a short time editor of the *New York Medical Journal.* At the time of General Grant's fatal illness in 1884, he gave up his practice and attended him until he died. On account of sickness he was not able to resume practice in New York and lived in Washington.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, October 10, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock p. m.

Dr. C. P. Strong: "Vaginismus, an Unrecognized Factor in Reflex Pelvic Pain."

Dr. E. G. Cutler will report some interesting cases from his recent hospital service.

G. G. Sears, M.D., *Secretary.*

The American Electro-Therapeutic Association. — The second annual meeting will be held at the New York Academy of Medicine, October 4, 5 and 6, 1892. Members of the profession interested in the papers and discussions are cordially invited to attend the sessions.

Horatio R. Bigelow, *Secretary*, 1716 Chestnut St., Phila.

Original Articles.

ON MULTIPLE NEURITIS, ENCEPHALITIS AND MENINGITIS AFTER INFLUENZA.[1]

BY JAMES J. PUTNAM, M.D.

In classifying my own experience as to the effect of the influenza upon the nervous system I have tried to separate my cases into two groups: first, those with symptoms mainly due to direct action of the supposed poison, as evidenced by disordered functional activity or impaired inhibitory power; next, those characterized by inflammatory reactions.

The first group would contain the cases marked by various special nervous symptoms, or by acute delirium and acute prostration, though the latter cases shade off into the larger number of those due to the exhaustion from the effects of the poison and the fever. Fortunately, their origin is generally pretty clear, and their termination usually favorable, though the persistence and severity of some of the cerebral symptoms have been, very often, out of proportion to the violence of the first stage of the disease.

The second group contains the cases of neuritis (single and multiple), meningitis, encephalitis, myelitis, and the like, and for many of these anatomical observations can be called in evidence.

It is not to be assumed that these conditions all arise in the same way, or that they are characteristic of influenza in contradistinction to other infectious diseases, but they are of great clinical importance, both on account of the seriousness of their prognosis, and the difficulty, in some cases, attending their recognition during life, and it is only to the literature of this group that I intend to contribute.

Before reporting the cases I will give my experience as to the frequency with which the severer nervous symptoms in general have occurred as sequelæ of the influenza. I have been well placed for judging of this point by having been in continuous attendance through both epidemics in the Out-Patient Department for Nervous Diseases of the Massachusetts General Hospital, where we see a somewhat picked lot of more than a thousand cases a year.

Instead of being surprised at the frequency of the cases which might be called severe and yet ambulatory, I have been struck with their infrequency.

After the first epidemic we were able to recognize in the Out-Patient Department but very few well-marked instances. This time they have been more common, and some of them of special interest, but still only a handful in gross number. I have also been over the books of the Out-Patient Department for the past four years to see whether the various forms of nervous diseases, not classified as post-grippal, had been more frequent during the epidemics than in other years. If such an investigation could be carried out on a large scale it might be of considerable value, but I can only say that there has been no notable increase in any particular form of diseases except that the choreas were more than twice as numerous for the six months from November 1, 1891, to May 1, 1892, than for any corresponding time or any corresponding number of aggregate cases, in many years past, not excepting the period of the previous epidemic. It is quite possible that this increase was due to other causes, the more so that the influenza has not been especially severe among children, but it is noteworthy that May and June have also shown a remarkably large chorea rate.

There has also been at the hospital one, but only one, case of ordinary epilepsy, in a young girl, that came on during a severe attack of influenza.[2] The patient was entirely free from hereditary predisposition. There were, however, no signs of localized cerebral disease such as seemed to have formed the basis of "Jacksonian" epilepsy in one or two reported cases of influenza.

To revert to the cases of inflammatory character, it will be best to speak first of those of neuritis, as clinically the most familiar.

It is remarkable that the peripheral nerves in spite of their slender blood-supply and the fact that they seem to be, chemically far less unstable than the ganglionic bodies from which they grow, are strikingly prone to suffer under the influence of poisons either circulating in the blood or injected into the tissues around them. They are also apt to be secondarily affected when the organs in which they terminate become diseased.

It is not to be assumed that the pathogenesis of neuritis is always the same, even among a number of cases of the same origin. The destruction of the nerve fibres may result from the direct action of the poison, from disease of their trophic centres, perhaps from œdema or anæmia within the nerve sheath.

In view of the frequency of neuritis and the multiplicity of its causes, which embrace the metallic and the infectious poisons, anæmia, even cancer, it is not surprising to find it occurring after influenza, and rather remarkable that since it occurs at all it is not more common. Several writers speak of it as an acknowledged sequel, but not more than one or two dozen cases have been actually reported.[3]

My colleague, Dr. H. C. Baldwin, has observed in private practice a typical case in an elderly lady, to which he kindly allows me to refer.

During the epidemic of 1889 and 1890 I saw only one case, and even that was of doubtful origin, since arsenic was found in the urine, and may have been at least a partial cause. Several of my colleagues with whom I spoke had seen no cases at all.

During the last epidemic I saw one well-marked case, which was especially interesting because of its clear history and because it was of the rather rare ataxic type.

I have also seen in both epidemics, several cases of multiple neuritis for which no other cause was manifest but where no good history of influenza was to be made out. One of these is that of a child now at the New England Hospital under the care of Dr. Emma Call. The neuritis is of the motor type, severe and general, and involves the cranial nerves as well as those of the limbs. It is peculiarly interesting that three years ago the patient, a boy of ten, had, according to his mother's account, an essentially similar and equally severe attack. There is no history of influenza previous to the present illness, and the former attack must have antedated the earlier epidemic. Still, owing to the rarity of neuritis multiplex in children, except from diphtheria, arsenic, lead, and acute infectious diseases, and the fact that typical instances have occurred after influenza (see Krannhals), the case is worth putting on record.

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[1] Read in abstract at the Annual Meeting of the Massachusetts Medical Society, June, 1892.

[2] This case gains in interest from the fact that of late the progress of the disease has been very favorable.

[3] Westphalen: Neuritis Multiplex nach Infl. St. Petersburg Med. Woch., 1890, vii, 187. Brissot: Lyon Méd., 1891., vol. lxxi. Testi: Giorn. Med. d. r. esercito, Rome, 1890, xxxviii, p. 857. Thue: (Polyneuritis, w. bilat. fac. par.) Norsk. Mag. f. Tægevidensk (Christiania). See also, Althans; Lancet, 1891, i, 714. Krannhals: Die Influenza-epidemie des Winters, 1889-90. St, Petersburg, 1891, (with cases cited from other observers). See also Brachmann: Die Nervösen Nachkr. des Infl., Berlin, 1891, and Mills: Transactions of the Philadelphia County Medical Society, January, 1892.

The ataxic case to which I have alluded was seen in consultation with Dr. Clarke of Melrose. The patient was a healthy man of thirty, and the symptoms followed immediately on a sharp catarrhal attack which confined him to the house at a time when the epidemic was at its height, but he was not greatly debilitated, so that his neuritis could not be laid at the door of anæmia.

On the first day he went out one knee felt weak and gave way; a few days later the other, and at the end of a week he could not walk without crutches. The hands also became involved, though to a less degree. and the ocular muscles slightly. The knee jerks disappeared, and both trophic and sensory symptoms appeared.

He is now, at the end of three months (written in June), slowly improving. Inco-ordination and motor weakness have been the prominent symptoms, but there has also been well-marked muscular atrophy, and impairment of cutaneous sensibility.

There has been no case in the wards of the Massachusetts General Hospital during the past winter which could be distinctly traced to the epidemic, but there has been one extremely interesting case of "acute ataxia" (see Leyden's paper in the *Zeitschrift für Klinische Med.* for 1890) for which it is conceivable that influenza may have been a partial cause. The symptoms were probably due to neuritis, since the patient is slowly recovering, though possibly to disseminated myelitis, and in either case they are probably of toxic or infectious origin. The patient was a temperate, intelligent, healthy mechanic. He gave no history of influenza, but had had no other infectious disease. Both lead and arsenic were found in the urine, but arsenic has been found in the urine of several of the cases of neuritis occurring during the influenza epidemic, and the case is worth placing on record as possibly an instance of the effect of the conjoined action of several poisons.

Oppenheim[4] has recently called attention anew to this important principle of the contributive action of several specific poisons, such as lead and alcohol, in increasing the effects characteristic of either one, or accentuating constitutional tendencies to nervous diseases such as hysteria and neurasthenia.

In influenza, with its extraordinarily widespread action upon the different parts of the nervous system, we have pre-eminently an influence which would be likely to contribute in this way to the action of other poisons and other partial causes of general or local disease, and as a matter of fact this influence has been frequently assumed as a means of accounting for the immense diversity of influenzal and post-influenzal symptom complexes. It is with this principle in view that I have spoken of the cases of polyneuritis[5] with arsenic in the urine, that I have seen during the two epidemics. There have been five such cases, all typical and four of them severe. None of the patients were workers in arsenic and the amounts found in the urine were small. In one instance (above noted) both arsenic and lead were present. In two of these five cases there was a clear history of an acute catarrhal attack which may well have been influenza, immediately preceding the neuritis.[6] In the other three cases no such history could be obtained, but the usual symptoms of onset may have been slight or wanting. It would be a point worthy of careful investigation whether neuritis apparently due to other poisons was more common during influenza periods. My private and hospital records do not cover enough cases to justify an opinion on this point at present.

It would be interesting if it could be shown that one or another of the different forms of neuritis multiplex was characteristic of a special etiology, and to a certain extent this is possible, so that we can at least strongly suspect, either from the course or character of the neuritis, or from concomitant symptoms, that a given case is due to poisoning by alcohol, lead, arsenic, typhoid, diphtheria, beri-beri, and perhaps a few other causes. As yet, however, it is not possible to say this of the influenza neuritis. The ataxic form of polyneuritis occurs under various conditions, but I am not aware that any case except the one here noted has been described as following influenza.

Some of the reported cases of influenza polyneuritis have been of considerable severity, but all of favorable issue, unless indeed we include those cases where death is supposed (without complete evidence) to have been due to neuritis of the vagus, unattended by generalized neuritis.

The *neuritis confined to single nerves* or predominating in them may almost always be looked for as an occasional occurrence under the same toxic influences that cause multiple neuritis, and the nerves most liable to be involved in this way are those of the extremities, the facial, the ocular, the optic, and possibly the vagus.

It is difficult in the case of so widespread a disease as the influenza has been during these epidemics, to eliminate the action of coincidence in deciding as to the cause of a given neuritis, where the symptoms are not characteristic, as in the common acute and subacute neuritis of the spinal nerves, but there are two forms of great importance which seem, if the reports may be credited, to stand in a direct relationship with influenza, so that at least they should be looked for carefully in case of another epidemic. These are neuritis of the optic nerve (considered to be usually retro-bulbar), often leading rapidly to incurable blindness; and of the vagus, which has been thought to account for some of the anomalous pulmonary and cardiac symptoms though complete proof is wanting. Eperon,[7] Weeks,[8] Remak,[9] and Snell[10] have reported cases of optic neuritis or rapid atrophy of the optic nerve, but that they are rare is shown by the fact that Dr. O. F, Wadsworth has not seen, he tells me, a single such case either in his private practice or in his large services at the City and Massachusetts General Hospitals.

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[4] Berl. kl. Wochsehr., 1891, No. 49.

[5] One case was not actually seen, but I have full notes of it, for which I am indebted to Dr. A. N. Blodgett, who will publish the case at a future day.

[6] One of these was reported by Dr. E. G. Cutler in the Boston Medical and Surgical Journal for 1890, p. 413, as a case of arsenical poisoning, and of course this may well have been the true cause, but on requestioning the patient at length, after he had left the hospital, the history of influenza assumed to my mind considerable importance.

[7] Progress Med., 1890, xii.

[8] New York Medical Journal, 1891.

[9] Centralblatt. für pract. Augenheilk, Leipzig, 1890, xiv.

[10] British Medical Journal, 1892, No. 1642 (cit. in New York Medical News, 1892, ii, 98). See also *Ovio*, Ann. di Ottal., Pavia, 1890, xiv, inaccessible to the writer.

It is also worth bearing in mind that the diagnosis of retro-bulbar neuritis is not one that can always be made in this class of cases without reservation. I shall speak a little later of the cases of meningitis and encephalitis to which influenza has given rise and shall report one with double optic neuritis associated with more or less impairment of vision. It is well known that meningeal inflammation is capable of causing neuritis and atrophy of the optic nerves without having previously caused any very marked cerebral symptoms. Instances of this are occasionally seen for example in the basal meningitis of syphilis, and not only that but they are met with after infectious diseases analogous to influenza. Thus Dr. Wadsworth[11] reported some years ago three cases of optic neuritis after measles, in two of which the meningeal symptoms were slight, though sufficiently well-marked to make the diagnosis almost certain. These cases are of importance in the present inquiry from the fact that the cerebral and optic symptoms in the first two did not come on until two or four weeks after the attack of measles was apparently over.

Neuritis of the vagus nerve and disease of its nucleus have been thought to be occasional causes of the anomalous pulmonary and cardiac symptoms in influenza. There are good analogical arguments for admitting this as possible, since disease of the vagus is doubtless a frequent cause of cardiac and respiratory symptoms and even of death in other forms of toxic and infectious polyneuritis, and the belief is growing that nuclear poliomyelitis and polioencephalitis are usually of infectious origin.

Positive anatomical evidence for influenza cases is, so far as I know, entirely wanting. Bidon[12] devotes several pages to the clinical evidence, pointing out especially the great disproportion, in some of the fatal cases, between the respiratory and cardiac symptoms and the post-mortem appearances (the nervous system not being examined).

He also refers to the experiments of Brown-Séquard, Schiff and others on the pulmonary changes due to puncture of the medulla oblongata, and to the effects of section of the vagus on the circulation in the lungs.

It is in this connection that I desire to refer to a fatal case of polyneuritis, not due to influenza but to an allied cause, seen by me some years ago in consultation with Dr. Morris of Charlestown, who kindly allowed me to examine the nervous tissues microscopically.[13] The patient died at the end of a week with symptoms of asphyxia, and at the post-mortem examination the lungs were found studded with hæmorrhagic nodules apparently analogous to those noted by Brown-Séquard after certain injuries to the medulla.

Microscopical examination showed that some of the roots of the vagus nerve, and perhaps its nucleus, were somewhat diseased, as well as some of the muscular fibres of the diaphragm, and probably the phrenic nerve.

The *occurrence of encephalitis, meningitis, and myelitis* after the influenza is very important, not only for its clinical importance, but also because of the anatomical evidence that these cases furnish, since many of them are fatal. The subject has been so well worked up by several writers (as Kohts,[14] Leichtenstern,[15] and especially Fürbringer,[16] that it is only necessary, for introducing the subject, to call attention to what they have written. Fürbringer makes a summary of the cases up to and including the present winter, and reports ten, with autopsy, belonging apparently in one group, and as many more without autopsy. This collection does not include Bristowe's often quoted cases of cerebral abscess,[17] nor does it take cognizance of the many cases of hemiplegia and monoplegia which have been reported, some of which may well have been due to the hæmorrhagic encephalitis which Fürbringer considers responsible for the symptoms in the cases on which his paper is based. Fürbringer also calls attention to Strümpell's investigation of acute encephalitis in general,[18] and admits that some the cases which have been observed after influenza may have occurred coincidentally. Since the publication of Fürbringer's paper an additional case of similar kind has been published by Dr. Jean G. Carageorgiades.[19] The cases reported by Kohts,[20] as occurring in children, would also seem to belong in the same category. Strümpell's paper deals with the subject of acute encephalitis, not with special reference to influenza but in a more general way, coming however to the conclusion, which is quite in accord with modern pathological teaching, that the disease is probably always, in a broad sense, of infectious origin.

It would appear that the infectious sources of hæmorrhagic encephalitis and kindred diseases may be either of three general kinds: (*a*) the virus of an acute infectious disease; (*b*) the virus from some primary or secondary focus of suppuration; (*c*) virus of unknown origin.

The anatomical changes may be well-marked (extensive hæmorrhage or softening), or so diffuse and so slight as only to be recognized with the microscope. The essential elements seem to be alterations in the capillaries or small vessels, leading to hæmorrhage, and tissue changes around the vessels. Meningitis is often associated with the encephalitis. The seat of the lesions has been largely, though not exclusively, cortical, and, correspondingly, the symptoms monoplegic and monospastic, and sometimes of temporary duration.

My own interest in the matter has been awakened by having seen, during the late epidemic, several cases (two of them with opportunity for anatomical inspection) that seem to belong in this category, and from being lead to suspect that both I and others have sometimes failed to recognize the disease, since the cases are not always fatal or the symptoms necessarily very severe.[21]

It may be well to glance at the clinical history of some of the cases, especially those with autopsy, collected or reported by Fürbringer.

The first is from Leichtenstern's paper. A previously healthy woman of twenty-five was attacked, while sick with influenza, with slight headache, irritability, vomiting; then retraction of head and unconsciousness with high fever came on. Death occurred on the fourth day. The autopsy showed a slight degree of hæmorrhagic pachymeningitis, leptomeningitis, diffuse hæmorrhagic encephalitis, mainly of the cortex.

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[11] Boston Medical and Surgical Journal, 1880, vol, ciii, p. 636.

[12] Rev. de Med., 1890. Strange: Severe Affections of the Vagus Nerve after Influenza, British Medical Journal, 1890, ii, 629. Bell: Neuroses of the Pneumogastric Nerve due to Influenza, Indiana Medical Journal, 1890-91, ix, 221. Da Costa (International Clinics, second series) dwells, as many other observers have done, on the fact that the condition of the lung in influenza is often not one of pneumonia or bronchitis of any ordinary kind.

[13] The autopsy was made by Dr. R. H. Fitz, and the case was published in the New York Journal of Nervous and Mental Diseases for 1888.

[14] Therap. Monatsschr., Berlin, 1890, iv, 595.

[15] Deutsche med. Woch., 1890.

[16] Zur Kenntniss schwerer organ'scher Hirnleiden in Gefolge v. Infl., Deutsche med. Woch., 1892, No. 3. I have not thought it necessary to give the references to the writers whom he quotes.

[17] British Medical Journal, 1891, ii, p. 6.

[18] Deutsche Archiv. f. klin. Med., xlvii, p. 53.

[19] Etude sur l' Epid, d' Infl. dans l' ile de Chypre, etc., (cited in the Satellite of the Annual of the Universal Medical Sciences, July, 1892).

[20] Therapeut Monatsschr., Berlin, 1890, iv, 595.

[21] See eight cases all of apparently similar nature reported by Leichtenstern (Deutsche med. Woch., 1890, No. 23).

The next is a case observed by Senator and Virchow.[22] The patient was only thirty-three years old; the primary sickness an acute infectious febrile disease, with bronchitis and profuse nose-bleed, — probably influenza; on the seventh day cerebral hemiplegia occurred; the next day death; the autopsy showed a hæmorrhagic focus of the cortex, surrounded by œdema, with points of suppuration, and capillary hæmorrhages; patches of purulent leptomeningitis; broncho-pneumonia, hæmorrhagic foci in the kidneys, slight endocarditis mitralis. These cases are severe and of rapid course, but contrast with them Fürbringer's first case, noting the stages which it exhibited and its resemblance during the earlier stages to some of the cases that ended in recovery, and which will be referred to further on.

The patient was a young woman of twenty-three years, previously of good health; the whole duration of sickness (cerebral symptoms were present from the outset, though with remissions) was two and a half weeks; the onset was said to have been sudden, and marked by impairment of sensibility and motion of the right arm, which, however, passed wholly or mainly away, leaving general and progressive feebleness with anorexia, without marked fever or bronchitis [23] and not confining her to bed nor wholly preventing her from working; then occurred successively slight mental confusion; improvement extending to the second day before death; then headache, nausea, prostration. The next day there was a return of the early symptoms of paralysis in the right arm; then partial hemiplegia; repeated attacks of general prolonged convulsions; coma; and death occurred two days later.

The urine was of the specific gravity of 1031, and free from albumen and sugar. The temperature of the last two days were 37.4°, 36°, 39°, 40.1°, 40.8° C., that is, not very high at first, and at one point subnormal.

The patient was only under observation during the two last days. The pulse for this period ranged from 84 to 100, except that after a convulsion it fell to 48.

The autopsy showed purulent bronchitis, patches of pneumonia, hæmorrhage in the mucous membrane of the small intestine; large hæmorrhagic foci in both hemispheres, surrounded by zones of yellow softening with punctate hæmorrhages.

In most of the recorded cases the cerebral symptoms came on during the height of the influenza, but Fürbinger's second case, also supported by autopsy, brings out the important fact, of which there is certainly no doubt, that they may be delayed until even late in the convalescence.[24] The patient, a man of only thirty-two, and of good previous health, was taken sick with typical influenza symptoms, but kept about his work, and on the fifth day felt so well that he eat a hearty supper. The next day he felt nauseated and vomited, and had slight fever, then became delirious and died two days later. There were no convulsions. The temperature was subnormal (36° C.) at his entrance into the hospital, a few hours later 38.9° C., and rose to 40.6° C. before death.

The post-mortem appearances were like those of the case just cited except that the large extravasations of blood were wanting. The whole region of the basal ganglia on both sides was softer than normal, and yellowish in color, partly in spots, partly in larger areas, and studded with minute hæmorrhages. There were similar foci of small size in the crura, cerebellum and pons. The heart was intact. The lower lobes of both lungs contained numerous localized spots of inflammation.

Finally, I will refer briefly to the case reported by Erlenmeyer.[25] The patient was a physician, twenty-five years of age, and of excellent previous health. He was attacked suddenly during the epidemic of influenza with pain in the back and head, prostration, and later, vomiting with moderate fever. After about ten days he recovered, not fully, but enough to take up his work again. Two weeks later clonic spasms of the left arm came on, accompanied by parasthesia, syncope and vomiting, and he fell from his chair. He lay for five days suffering mainly from intense headache and sleeplessness, and at the end of that time had another attack of convulsions of the left arm, after which he made a good and rapid recovery. Erlenmeyer assumed a hæmorrhage in the cortex as the cause of the symptoms, the more so that the extravasations appeared in the conjunctiva and tongue. Other cases not wholly unlike this have been published by other writers, and I have myself seen one and perhaps two cases of aphasia with paresis of the right hand terminating in recovery without apparent cause than influenza. Of course such symptoms might arise without the influenza, but Erlenmeyer's case is of special importance on account of the relative youth of the patient and the absence of heart disease and other causes of hæmorrhage or thrombosis.

Fürbringer also reports two cases with well-marked cerebral symptoms without convulsion or paralysis, that ended in recovery.

Fever is not always prominent in the early stages. The patients have mostly been of early middle life. The post-mortem appearances may be striking and unmistakable, but, on the other hand, one may see nothing more than softened tissue with minute points of hæmorrhage and diffuse or spotty yellowish discoloration.

I will now proceed to a brief description of the cases which I have to contribute. For the first case I am indebted to the kindness of Dr. E. S. Boland, of South Boston, who attended the patient and kindly allowed me to see and examine the specimens after death.

Case I. The patient was a maiden lady, seventy-one years old, of good health and without indications of cardiac or renal disease. During December she was seized with a well-marked attack of influenza attended with considerable prostration, but at the time of onset of the cerebral symptoms she was well enough to be up and dressed, though not strong. On February 3d she had a brief attack of unconsciousness without other symptoms, coming on suddenly and lasting about fifteen minutes. Three days later, at eleven o'clock in the forenoon, she had a twitching of the left side of the face come on without loss of consciousness. This lasted for a few minutes and then disappeared, but about twenty minutes after there was another attack and this time the left arm twitched slightly. These attacks occurred at intervals of about twenty minutes and with rather increasing severity through the greater part of the next thirty-six hours, and immediately afterwards hemiplegia of the left side supervened, with loss of consciousness. In the course of the next few hours she recovered consciousness enough to recognize her friends in some degree, but died at nine o'clock on the following morning without further symptoms. The temperature is said not to have been much elevated until shortly before her death, when it was 103° F.

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[22] Deutsche med. Woch., 1891, No. 49; Berlin klin. Woch., 1891, No. 52.

[23] Whatever the doubt attaching in this case to the diagnosis of influenza — though the sickness occurred during the epidemic and would ordinarily have received that diagnosis — it is certainly of value for the symptomatology of this form of encephalitis.

[24] Fürbringer speaks of having seen a case with a similar form of encephalitis after scarlet fever where the symptoms did not appear until the fifth week.

[25] Berl. klin. Woch., 1890, xxvii, 295.

The autopsy was made two hours after death, only the head being examined. I make the following extracts from Dr. Boland's note:

"Rigor mortis moderate; body small and only moderately well nourished; head of good size and shape, symmetrical; calvaria thick, diploë well-marked; dura adherent to calvaria by old and firm adhesions; some absorption of bone near median line over Pacchionian bodies. The cerebral sinuses contained little blood and no clots. The cerebral spinal fluid was moderate in amount; pia whitish and thickened over sulci; cortical vessels moderately filled; convolutions but little atrophied, considering the age of the patient; choroid plexuses and ependyma normal; some atheroma of basal vessels. Examination of hemispheres, medulla, cerebellum, pons and basal ganglia mostly negative, except that the perivascular lymph-spaces were dilated, and that areas of staining with slight softening were present in the right basal ganglia and internal capsule; portions of this region of the central convolutions were removed for microscopic examination."

To this description I will only add, as having been noted and commented on by both Dr. Boland and myself at the time of the examination, that the whole brain was soft and watery, and that the yellowish discoloration was present in the capsular region of the left side as well as the right, though to rather a less degree. The portions removed for that purpose were hardened carefully in bi-chromate solution and have since been examined microscopically, and the following changes noted to a greater or less degree in all places, though much more accentuated in some parts than in others; (*a*) hæmorrhages from capillaries and small arteries, associated with fulness of all the vessels; (*b*) the presence of a considerable number of leucocytes in the vascular sheaths and often in the surrounding tissues; (*c*) a modification of the normal structure of the tissues in the areas occupied by the hæmorrhages; (*d*) the presence of round hyaline bodies staining with hæmatoxylon and suggesting corpora amylacea, in the same areas.

These appearances denote something more than simple œdema, and taken in connection with the clinical history, they seem to me to bring the case into the same category with those above described.

Case II was that of a gentleman in early middle life, thirty-eight years old, seen by me in consultation with Dr. Arthur Kemble, of Salem, Mass. His antecedents had been good except for his having been subject to worry. He had had no venereal disease. In January, 1892, he had a well-marked attack of influenza, during which intense headache was a prominent symptom; from this he apparently entirely recovered so that he had been attending to his work for some eight weeks, though troubled more or less with headache, when the cerebral symptoms came on. It may, of course, be fairly doubted whether his final illness was a result of the influenza, but no other explanation is equally satisfactory, and it is by no means impossible that he had been on the brink of the illness about to be described for some time before it actually appeared. This is quite in accordance with the behavior of the disease in other cases.

Early in April, while at his store, he was suddenly seized with a violent fit of sneezing, which he instinctively rather encouraged. Before this was over, he found that he could neither see nor hear, but the hearing quickly returned and the vision almost entirely though not wholly. He went home in a horse-car, and from this time on was confined to his bed with intense headache, so that he had to have a nurse and was at times delirious. Two weeks later he had an attack of left hemiplegia, and his speech was slightly affected. The paralysis began to lessen after two days, and at the end of a week had practically disappeared. With the paralysis there was at first a sense of numbness, but this also passed away. The eyesight was a good deal blurred, especially for the distance, and the right eye was worse than the left. He could not remember to have had double vision except on one occasion.

At the time that I saw the patient, which was five weeks after the beginning of his illness, he had almost ceased to have headaches, and the paralysis had disappeared, but he was still in bed and very weak.

An ophthalmoscopic examination revealed well-marked double optic neuritis, with moderate swelling and slight hæmorrhages; and these signs were still present at a second examination three weeks later, although in other respects he had practically recovered except for being still weak.

Case III is reported as only possibly a result of the influenza, though here also no equally probable cause was to be discovered.

The patient was a man fifty-five years old; of previously good health as far as could be ascertained, with the important exception that eight years before the present illness he had been severely wounded near the root of the nose by a large piece of iron driven off from his gun by the bursting of the piece. It is uncertain whether this wounded the membranes; but he was delirious after the accident for a number of days, though in the end he seemed to have entirely recovered.

During the winter of 1892 he was in his ordinary health, except for not sleeping well. For about two weeks previous to his final illness, he suffered from what was believed at the time to be an attack of influenza. Every night he came home from his work chilly and feeling poorly, but recovered with rest so that he was able to return to work the next day. On March 9th, he began to complain of headache, which at times was very severe, felt mainly at the vertex. At about this time he was seen and examined by Dr. Couch of Somerville, Mass., with whom I afterwards saw him in consultation. Dr. Couch found his urine to be free from albumen, and reported to me that his temperature though slightly elevated had never gone above a hundred, to his knowledge. It had not been taken every day. A week after the beginning of the headache he found one morning that his left arm and leg were paretic. The next day a series of convulsive attacks began, which were confined to the left side and unattended with loss of consciousness; and these recurred very frequently. I saw him three days later, and was witness to one or two convulsions. They began in the ulnar fingers of the left hand, and gradually extended to both the face and legs; but even while the spasm was at its height, the patient understood and responded to my request to put out his tongue, and showed other signs of consciousness, though he could not speak. The temperature was 100° F., both before and after the convulsion. There was complete left-sided hemiplegia. Believing that a meningeal hæmorrhage, or an abscess related to his previous injury, could not be ruled out as possible causes of his symptoms, and that his chances of life, which the increasing frequency of the convulsive attacks was constantly lessening, would not be diminished by a simple trephining, I asked Dr. A. T. Cabot if he would operate, with the understanding that the situation had been fully explained to the family.

At our visit on the morning of the operation the patient was found in a severe fit, and was, for the second time only, unconscious. The temperature was then 103° F. When the bone was removed the dura was found tense, and the brain not pulsating. On opening the dura the cortex was found to be very dark in color, and a thick layer of pus was observed along the large vessels which were exposed near the edge of the opening.

The tension of the cranial contents, the pus, and the dark color of the brain make it probable that the lesion was a general and purulent meningitis. Whether there was anything beyond this, and whether his illness was connected with his old injury, or was, as in a similar case reported by Fürbringer, a meningitis due to influenza, it is impossible to say with positiveness. The patient was neither better nor worse after the operation. He became fully conscious, but later the convulsions returned and ended rapidly in death.

The *spinal symptoms of influenza* are of great interest; but I will not lengthen my paper by referring to them, as I have no cases with autopsy to report. I should, however, like to refer to what Dr. C. K. Mills,[26] and others have pointed out, namely, that spinal meningitis may be closely simulated, as by such symptoms as violent and general spasms, with pain, without being actually present. An extremely important and interesting example of this I saw in consultation with Dr. Tilton, of Lexington, Mass., the patient being a strong and previously healthy policeman. His temperature had been up to a high point, and prostration was extreme. Pulmonary symptoms were present, at first, and then tetanoid spasms came on with great severity, attended by pain and provoked by the slightest movement. The patient made, however, in the end a good recovery, and on careful examination it was found that some of the symptoms necessary to a diagnosis of meningitis were wanting.

I was the more impressed with the significance of this case because some months later I had the pleasure of seeing, with Dr. Hodgdon, of Arlington, a case characterized by violent and painful spasms of similar character, which came on late in the convalescence from typhoid. The patient shortly afterward unexpectedly died, and at the post-mortem no morbid appearances, except anæmia, could be discovered in the nerve centres, on inspection of the specimens in the gross.

Fürbringer refers to the occurrence of such cases as this, and considers them as instances of typhoidal hysteria.

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A CLINICAL CLASSIFICATION OF HIP-DISEASE.[1]

BY ROBERT W. LOVETT, M.D., BOSTON.

It is a matter of common information that the affection known as hip-disease presents itself in widely differing aspects, being at times a mild and benignant disease which runs a brief and favorable course, while at other times it appears as a malignant destructive process which is often but little affected by the therapeutic measures at our command. Between these two extremes many intermediate degrees are represented practically, so that the condition described as hip-disease stands for an affection which varies within very wide limits.

So far as I know there has been no attempt made to formulate these different aspects of the disease, and no definite classification of types, if there are any, has ever been presented. And yet such a classification, could it be made, might be of the greatest practical value. If the different phases of the disease could be recognized early, much might be gained, not only in the study of the affection, but as an aid in the prognosis and treatment. If, for example, a classification could be made and certain cases recognized fairly early as belonging to the rapid, destructive form which we all know so well, then more radical and more stringent methods of treatment might be undertaken, which might make an important difference in the outcome of the disease in those cases.

Such a classification, of course, should rest on a pathological basis if possible, but one has only to survey the field of the pathology of hip-disease, to realize that such a pathological classification is not for the present feasible. It is only of late years that hip-disease could be said to have any pathology at all, and now we know little more than that the affection generally begins as a tuberculous ostitis of the head of the femur, and passes on to affect the synovial membrane and in most cases to eventuate in a more or less destructive inflammation of all the joint structures. This we know from certain early autopsies and from the work of those surgeons who believe in and practise early excision.

But what symptoms are associated with the involvement of the various structures we do not know; we may theorize upon the subject, but we have no pathological knowledge sufficient to enable us to assert that certain phenomena means that the bone is affected, or that certain others mean the involvement of the synovial membrane in other than exceptional cases.

Certain writers claim to be able to diagnosticate between synovial and osseous disease, and even between femoral and acetabular hip-disease. I fancy that the majority of us feel unable to make these distinctions in general, however evident they may be in exceptional cases. I can only speak for myself in saying that it is a diagnosis that in most cases I feel utterly incompetent to make, and that until the clinical symptoms are more accurately associated with the pathological conditions which cause them, it seems to me that a pathological classification of that sort is premature, and likely to be of little practical value. On the other hand, if the disease can be subdivided clinically and so studied, and if these clinical types are found to be associated with different types of a common pathological process, it seems to me that such a method will best serve the more accurate study of this disease and will lead in time to an accurate pathological classification.

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[26] Transactions of Philadelphia County Medical Society, January 13, 1892.

[1] Read before the American Orthopædic Association in New York, September 20, 1892.

It is such a clinical classification that I have to present to you which I hope to demonstrate rests on a pathological basis after all. It is necessarily a preliminary paper to a certain extent, and I have been much hampered in its preparation by my lack of knowledge of practical surgical pathology.

Hip-disease, I believe, falls into four well-marked types, each of which corresponds to a particular type of the pathological process.

These four types are:

(*a*) *The Destructive Form*, where the disease is rapid, severe, and but little influenced by ordinary treatment; extensive infiltration of the soft parts takes place, and in most instances the disease passes on to a fatal issue.

(*b*) *The Painful Form*, where pain is a prominent symptom, and exacerbations are common.

(*c*) *The Quiet or Painless Form*, where pain is an unimportant factor or is entirely absent.

(*d*) *The Transient or Ephemeral Form*, where the symptoms are mild and the course of the disease is run in a few months.

(*a*) *The Destructive Form.* — The type of hip-disease which I would place in this class occurs most often in children of tuberculous inheritance and poor vitality. Its onset is rapid and painful, often excessively painful. There is, almost from the first, much thickening of the trochanter and periarticular tissues. The general condition is rapidly impaired, and abscess formation takes place early. One abscess follows another with profuse discharge through sinuses which open widely and are surrounded by colorless granulations. This type of disease most often begins as such, and is clearly a type by itself throughout. At other times, but rarely, it is superadded to one of the forms about to be described. The temperature is high, the wasting rapid, and a porky induration of the thigh ensues.

Such children, as I have observed them, die most often of exhaustion, they are particularly liable to tubercular meningitis, and, if they live, it is these cases that develop amyloid degeneration. The course of the disease is rapid in most cases, and the prognosis is poor. Under favorable conditions a certain proportion recover with stiff and shortened legs, others are saved only by excision.

It seems probable that in some of these cases at least, the disease is an acute infectious osteomyelitis, not necessarily produced by the bacillus of tuberculosis or by any specific bacillus, but being a local septic process, a pyæmia, caused most often by the staphylococci, exceptionally by the streptococci. The rapidity and the destructive character of the process in some cases points to a pathological state more likely to be due to a process of this sort than to tuberculosis.

In other cases it is doubtless merely a tuberculosis of unusually rapid and extensive character. Certain individuals, either by inheritance or by peculiarity of constitution, offer a most favorable soil for the rapid development of the tubercle bacillus and if these individuals should happen to receive a large initial dose of the poison, it is not unreasonable to expect that in them the disease would be extensive, rapid and destructive.

Probably the infiltrated form of tuberculosis is more common than the encysted form in these cases. The whole spongy tissue of the epiphysis is probably suddenly filled up with a creamy tuberculous infiltration which degenerates most rapidly and erodes most extensively the surrounding parts. In other cases the encysted form is probably present but possesses unusual capabilities for destructive and rapid growth. So that just as in pulmonary tuberculosis the florid form of phthisis stands off from the more chronic manifestations, so in bone tuberculosis one finds a rapid and destructive form of the disease.

(*b*) *The Painful Form.* — This, the commonest type of hip-disease, is described as the painful form for want of a better name. It serves to distinguish it from the quiet or painless form to be described next, yet it is only descriptive of one symptom. The cases that I have in mind are those irritable cases which form the bulk of the disease where pain is caused by manipulation and is present in the form of night-cries and continued pain. It is not steadily present, and is controlled to a greater or less extent by treatment, but the tendency to pain exists and painful exacerbations come on spontaneously or are caused by slight traumatisms.

Muscular spasm is, of course, an integral symptom of all forms of hip-disease, and is always present in painful cases as in the others. Generally some motion is allowed in the joint, but the muscles are quick to catch and hold the joint when the limit of motion is reached.

Malpositions of the limb are very common and come on rapidly, generally with an exacerbation of pain and with complete muscular fixation, but they yield readily to treatment and motion returns to the joint to a certain extent. In short, the muscular spasm varies so that while most often considerable motion may be allowed in the joint, again, complete fixation may be present for a longer or shorter time. Abscess formation is common in this form and is most often preceded by an acute exacerbation of pain. Thickening of the trochanter is always present but is moderate in amount.

In short, the type is the common one to be found in hip-disease. It occurs more often in children under six years than does the painless type, and although the term "painful" describes only one feature of it, this feature is the most characteristic and the most persistent. Joint irritability, pain and rapid deformity are its striking characteristics.

The general course of the disease, I believe, is shorter than in the painless form, to be described next, and the joint likely to be a better one after the disease has run its course, consequently I should be inclined to give a better prognosis as to a rapid and favorable issue, other things being equal, than in the quiet and painless type of the disease.

(*c*) *The Painless or Quiet Form.* — This name represents, it seems to me, a well-marked and distinct type of hip-disease which we can all recognize. It seems, moreover, to apply to a certain type of joint-disease in general, but that is aside from the present question.

In the hip there is undoubtedly one form of inflammation that runs its course quietly, slowly and with little or no pain; it is these cases which I have included in this type. Pain as a prominent symptom is absent, although night-cries may be present early in the disease, and later a painful stage may be brought on by a fall or by some traumatism to the joint. In general, muscular spasm is the important and prominent feature in this form of the disease; it is persistent and most often allows no motion, but holds the joint rigidly fixed. Passive manipulation is not painful, but fails to move the joint.

The malpositions in this form occur slowly and are much more persistent and intractable than in the painful cases, and yield very slowly to treatment. Thickening of the trochanter is considerable, but the atrophy and shortening of the limb are more marked than in any other type of hip-disease, being often extreme. This quiet and comparatively painless type of hip-disease is more likely to occur in children over six years of age than in younger children, and it is not so liable as the other forms to occur in children of a marked tuberculous taint. Such cases are common enough; some go through the whole course of the disease without any pain, while others have it only temporarily, perhaps as the result of some traumatism.

In general this type runs a slower course, is less likely to abscess-formation, and is likely to end in a stiff joint. It is not so likely to mishaps as the preceding form, but the functional results are not apt to be so good in the matter of motion, shortening or atrophy.

The pathology of painful and painless hip-disease can best, perhaps, be discussed in one place. In general the presence of foci of tuberculosis in the head of the femur is not in itself likely to excite pain except when the foci are near enough to the articular surface to involve the synovial membrane in the irritation which surrounds them. But a large proportion of active foci of tuberculosis which form about the epiphysis are on the articular side of the epiphysis and grow toward the joint surface, consequently it is reasonable to suppose that most active foci will cause synovial irritation and pain in the course of their growth. The early autopsies of Lannelongue have shown more clearly than anything else that pain begins when the synovial membrane becomes affected, but that the synovial membrane is often affected without the occurrence of pain, is shown by daily observation in advanced cases of hip-disease where pain has never been a symptom. For this reason I take it that painful hip-disease represents the ordinary form of bone-tuberculosis where foci form in the epiphysis and involve the joint in their growth. They are surrounded by a zone of hyperæmia and irritation, and generally break down into pus. This is the most common form clinically and pathologically.

Cases without pain, which I have classed as painless or quiet cases, I assume are caused by a different form of bone tuberculosis, a well-recognized form pathologically where the tendency is not toward purulent but toward fibrous degeneration. The older name was "caries sicca" but the newer pathology in dropping the term caries, speaks of it merely as a fibroid form of bone tuberculosis.

The process is the same in general as that of ordinary bone tuberculosis, except that the foci are surrounded by less irritation and hyperæmia, and in place of it a condensing process goes on around. It is a bone-tuberculosis just as the other is, but it causes much less irritation around it, it is slower in its progress and it has little or no tendency to purulent degeneration. It is a well-recognized type of bone tuberculosis and its characteristics are well-established. It must be evident that it seems to furnish a reasonable pathological explanation for those cases of quiet or painless hip-disease which are not by any means the most common manifestation of the disease, but which are so common as to be familiar to us all.

(*d*) *The Transient or Ephemeral Form.*[2] — I have included under this head those somewhat unusual cases of hip-disease which begin in a typical way but subside in the course of a few weeks or months. These cases would at first be set down as due to simple acute synovitis, but some of them show plainly enough that there is a bony lesion at the foundation of the trouble. They simulate cases of acute synovitis very closely, of course.

A typical case is the following: Frank F., eight years old, came to the Children's Hospital in September, 1889, six weeks after a slight fall. He was lame; he had night-cries and pain; and the trochanter was slightly thickened. Flexion, hyperextension and rotation were all limited by muscular spasm. The diagnosis of hip-disease was made, but recovery was unusually rapid, and in three months motion was free. Two years and a half later there is shortening of one inch in that leg; no atrophy, but marked trochanteric thickening; motion at the joint is free.

Here there is a case which seems to be a true bony lesion affecting the growth of the bone, which recovered permanently in three months. Such cases are not altogether uncommon, even when cases of pure acute synovitis are left out of account.

The early symptoms of these cases give no clue to the fact that they are not routine cases of hip-disease. Muscular spasm, pain, atrophy, night-cries, etc., are all present, and the case in every way resembles the beginning of mild hip-disease. It is only in the light of its later history that its true character becomes evident.

It will be seen that these cases do not present any early symptoms different from those of hip-disease of the common type, so that their recognition seems impossible; moreover, hip-disease is characterized by such marked remissions of symptoms that this type of disease is easily simulated in that way. But the fact remains that, even if one leaves out of consideration cases of acute synovitis, certain cases presenting all the symptoms of true hip-disease run their course to a favorable termination within a few weeks or months, and the matter is one of such practical importance that it deserves recognition.

With regard to pathology, all must be conjectural. It is probable that in these cases the focus of tuberculous disease is situated in a part of the epiphysis remote from the joint, and that in its growth it causes enough disturbance in its neighborhood to give rise to symptoms of joint irritation. Having caused these symptoms of joint irritation, it seems probable that the focus of disease either becomes quiescent or grows away from the joint if it continues active, and after a brief time the symptoms subside once more.

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[2] R. W. Lovett and J. L. Morse: A Transient or Ephemeral Form of Hip-Disease, Boston Medical and Surgical Journal, August 18, 1892.

Allow me once more to name these types of the disease:

(*a*) *Destructive Hip-Disease*, due to a florid tuberculosis of bone or to an acute infectious osteomyelitis.

(*b*) *Painful Hip-Disease*, due to the ordinary form of focal bone tuberculosis, where irritation surrounds the foci and the tendency is to purulent degeneration.

(*c*) *Painless or Quiet Hip-Disease*, due to the fibroid form of focal bone tuberculosis, where there is little irritation surrounding the foci and a tendency to the deposit of fibrous tissue.

(*d*) *Transient or Ephemeral Hip-Disease*, due probably to a focus of tuberculosis, which is rapidly absorbed or is so far removed from the joint that it causes little or no synovial irritation.

Whether or not these types will meet with your acceptance, I have no means of knowing. Any classification in our present state of knowledge must be to a certain extent a preliminary one and subject to change when our knowledge of pathology becomes more extensive. I present it purely as a clinical classification, moreover, although I have tried to give it a pathological foundation. The types are not always well-marked, and border line cases are common, but that is the case in any scheme of classification, pathological or clinical. I offer it in the hope that it may serve some of us in a more accurate study of the disease.

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A CASE OF INTESTINAL OBSTRUCTION RELIEVED BY LAPAROTOMY AND SEPARATION OF ADHESIONS BETWEEN THE SIGMOID FLEXURE AND THE UTERUS.[1]

BY MAURICE H. RICHARDSON, M.D.

On February 5, 1891, I was called to Chelsea, by Dr. W. R. Chipman, to see Mrs. J. L. The diagnosis in this case was so obscure that I was obliged to rely almost entirely on the history. For this reason I give in some detail the description of the onset and course of her symptoms, in her own words.

Mrs. L., aged sixty. "Two years ago I was taken with a terrible pain in my left leg. One Saturday night I was taken deathly sick. Monday morning I was worse. The trouble in the knee resulted in water in the joint, and I was treated for that trouble and for gastric disturbances by different physicians. The leg was terribly bad. It grew worse, and had to be extended. I was under treatment till Christmas for the knee and stomach. I had terrible pains in the back and in the left side. I was in bed all the time. I couldn't straighten up on account of the pain in the back. I was in perfect distress. Early in June my legs began to swell badly, and then my stomach began to swell. I have been doctored for dropsy ever since. My breath was very short, and I was doctored for heart-disease. I have been growing larger and larger and getting worse ever since. Now the leg is comparatively well, and the feet are not especially swollen. Before this I was never sick, though I used to have pain across the kidneys and pain in the bowels. The bowels would get tired. Family history good. No consumption in the family, nor cancer. I have been in bed five weeks to-day. My mouth and tongue are terribly sore. I passed the turn of life at forty-five, and had no special trouble. In the last few years I have noticed no enlargement of the bowels till the present trouble came on. I couldn't straighten up — I would give way across the kidneys. The bowels have been regular. I have had an operation every day. There is no pain in the back passage, but after an operation there is some pain in the bowels. The stools are thin. If I do not have an operation every day I bloat right up, and for this reason I take medicine every day. I have terrible distress, and get as tight as a drum. I can't get my breath. I have gained weight. Never had dysentery or typhoid fever. No trouble in the rectum or the womb. The pain I have starts under the ribs on the left side, and goes down and ends just over the bladder — in the middle, low down. There has been no fever at any time. I pass no wind to speak of. The operations are small and thin."

Examination.— A very large woman. The abdomen was enormously distended with gas and everywhere tympanitic. No masses could be felt at all. There was nothing suggesting the tense and resistant coils of distended intestine sometimes found in acute obstruction. Nothing could be detected by rectal or vaginal exploration. She indicated the left lumbar region as the seat of the pain, from which it extended downwards towards the pubes, ending just above that bone. Tongue was clean. Pulse 84, of good quality. Heart and lungs normal.

The essential features of this case were a large and strong woman with gradually increasing difficulty in having movements of the bowels; enormous distension of the abdomen, with occasional passage of flatus, and a daily discharge of a certain small amount of thin fluid. General appearance of patient good; family and previous history good. The increase in weight, instead of the emaciation of malignant disease, I thought was due to the enormous collection of fæcal matter in the loaded bowels. It is difficult to give an adequate idea of the excessive distension and size of the abdomen.

In ten or twelve cases of chronic intestinal obstruction I have operated upon, I have found an annular stricture in the region of the sigmoid flexure. In no material point as to history or physical examination did this case differ from the others. It was not possible to locate the seat of the stricture by large injections, this procedure throwing no light upon the diagnosis or point of obstruction. It seemed probable that this patient was suffering from an annular stricture somewhere in the region of the sigmoid flexure. The only evidence pointing towards the seat of the lesion was in the locality, direction and stopping-point of the pain. I have been able a good many times to make a correct diagnosis of the seat of the obstruction, and its cause, in this way.

I had the patient transferred to a private hospital, where the case was studied with great care, and where she was examined by several of the physicians of the Massachusetts General Hospital. We all agreed in the advisability of exploratory operation with the chances in favor of a malignant stricture which would require the formation of a permanent artificial anus. On February 16, 1891, with the assistance of Dr. Mumford, and with Drs. Homans and Fitz present, I made an incision in the median line, between the umbilicus and the pubes, long enough to admit my hand and arm.

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[1] Read before the Boston Society for Medical Improvement, April 25, 1892.

The distended coils of intestine immediately presented on opening the peritoneum. They were normal in appearance, except that the walls were very much thickened from the hypertrophy of the muscular coats that accompanies chronic obstruction. With the fingers of the right hand in the pelvis, I was able to explore the ascending colon and the sigmoid flexure as far as the recto-uterine fold. Between the rectum and the uterus, deep in the pelvis, were numerous adhesions which I was able easily to separate with my fingers. The exact extent and direction of these adhesions I could not make out, but I was able, with some difficulty to relieve the apparent cause of the obstruction. Not feeling certain that the obstruction had been relieved, I thought best to open the sigmoid flexure and to sew it to the abdominal wound in the usual manner, in order to provide for the exit of fæcal matter and gas in case the separation of adhesions should prove to be of no avail. During my manipulations inside the abdomen, I was unable to feel any hard matter, or any evidence whatever of a new growth, malignant or otherwise. On opening the sigmoid flexure, after it had been fastened securely and tightly into the wound, enormous quantities of gas and fæcal matter escaped. As in all my previous cases of chronic obstruction, the fæces were churned into a yeasty fluid. An instrument was passed down through the wound in the cæcum towards the point of obstruction, but I could not pass it into the rectum.

The patient made a good recovery from the ether, and was greatly relieved by the enormous discharges of gas and liquid fæcal matter. In the course of a few days, she began to pass fæcal matter and gas freely by rectum, and from that time to the present she has had no difficulty whatever in having daily and abundant discharges in the natural manner. The fistula closed spontaneously in a few weeks after the re-establishment of the natural passages, and Mrs. L. has enjoyed the best of health up to present time. There has been some inconvenience from a hernia in the scar. This could not have been helped, because it was necessary to leave quite a large space between the recti for the suture of the bowel. Through this space the hernia gradually developed, and is now kept in position without much inconvenience by a truss.

This case is another illustration of the necessity of exploration in obscure abdominal diseases. In my opinion, it is at times impossible for the physician to make a diagnosis sufficiently accurate to justify non-interference. It is better that a hundred useless explorations should be made than that one life should be lost for want of a helping hand where help is possible. This case is a most gratifying example of the advantage of exploration. Even if we had found a malignant stricture of the sigmoid flexure, I still believe that the operation was not only justifiable but urgent and necessary. Those who have seen the great suffering under which patients succumb in chronic intestinal obstruction, the unbearable pain and distension, and that symptom which is frightful even to see or imagine — fæcal vomiting — all these seem to me more than to justify an operation for relief, especially an operation so simple and so safe as to open the bowel in the groin. It is said, in opposition to this procedure, that the patient's life is unbearable, but in my experience of quite a number of cases of inguinal colotomy such is not the case, and the discomfort is very much exaggerated. The opening is very easily kept clean. One may have regular movements of the bowels, and between them there is no difficulty, with a suitable pad, in preventing the escape of fæcal discharges.

Even if nothing is accomplished by a thorough exploration beyond the demonstration of the truth that there is no hope of cure, or even of relief, I, for one, feel that the knowledge thereby gained justifies the slight, or, if necessary, the great risk of the procedure. Until we can say that we never err in diagnosis we have no right to refuse the patient the possible benefits of exploration.

Clinical Department.

AN UNUSUAL GUN-SHOT INJURY.[1]

BY JAMES G. MUMFORD, M.D.

This almost unique case came to me through the kindness of Dr. H. H. A. Beach. I saw the patient in consultation with Dr. S. M. Greene and Dr. F. W. Leach of Newmarket, N. H., on the 23d of April last.

The patient was a lad, sixteen years of age, robust and vigorous from constant open-air exercise. He met with his injury three days before I saw him. While gunning with a friend they had occasion to enter a small boat; the patient, W. L., placed his gun on the thwarts of the skiff and, still standing on the bank, stooped to cast off the painter from a stake; his companion hastily jumped on board and stumbled against L's gun, both hammers of which were at full cock; both barrels were discharged, the shot entering L's body from behind. He fell, became collapsed, and an hour later, when brought home was still in a state of profound shock. Dr. Greene was summoned; and from his report the following conclusions were drawn: One barrel of the gun was charged with number six shot; these entered the right thigh, at short range, from behind just below the great trochanter, and passed entirely through the limb. No important structures were injured; so that this wound was disregarded. The charge from the other barrel, shot number four, entered the right buttock just below the tuber ischii. If it is remembered that the lad was stooping, when struck, it will be seen that the direction of the charge, on entering the body, would have been as though from below upwards, had he been standing erect. Investigation showed that the shot were lost in the cavity of the pelvis; their course could be judged by the symptoms. A glance at the skeleton will show that the charge entering below the great ischial tuberosity must have passed through the great sciatic foramen.

Though the immediate effect of the injury was shock the patient quickly rallied. Hæmorrhage from the wound was not very great, showing that the large pelvic vessels were uninjured; but shortly after being brought home the patient passed a small amount of very bloody urine; the bowels were constipated; the temperature was 102.6° F., the pulse 120. The natural inference of perforating wound of the bladder, with serious peritoneal injuries, was drawn. Owing to the great number of shot and necessarily extensive lacerations of the pelvic contents operative interference was not considered. The patient was made comfortable with opiates and dressings. Strangely enough for the next three days improvement was steady and uninterrupted. The temperature came down nearly to normal, the pulse to 100; copious natural movements followed saline laxatives; the urine increased in amount and was nearly free from blood; the appetite improved; and but for the serious wounds of entrance the lad would have been almost without discomfort.

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[1] Read at the June meeting of the Warren Club, Boston.

It was at this time I was called, with the object rather of giving the wounds proper dressings, and if possible, locating the position of the shot, than with any idea of operating immediately.

I saw the patient with Dr. W. A. Brooks, Saturday evening. The accident had occurred on Thursday. The boy was lying comfortably on his left side with his knees drawn up. He had had but little morphia. The temperature was 100.2°, pulse 92, respirations 24 to the minute. The face was slightly flushed and the tongue slightly coated, but the mental condition was good. He seemed bright and intelligent.

The more trivial of the two wounds was as has been described; most of the shot had passed superficially entirely through the outer aspect of the thigh, and this wound caused little inconvenience. It was blackened and not yet granulating.

The wound of entrance in the right buttock presented at first a similar appearance. It was a conical depression: at its base as large as a silver dollar, and seemingly half an inch deep, blackened and indolent looking. No examination was made of the rectum, as there had been frequent and natural discharges during the two previous days. The patient was turned partially on his back with some trouble and considerable pain in his buttock only. The condition of the abdomen was not satisfactory. There was slight general tympanitis, though the distention was inconsiderable. There was a suspicious area about half the size of the palm, slightly to the left of the median line, about half-way between the umbilicus and the pubes. This area was tense, glistening, slightly reddened, hotter than the surrounding tissues, and painful on deep pressure. It was due evidently to an inflammatory process situated deep in the parietes, seemingly well localized and presumably involving a limited area of peritoneum. The last fact was a fair presumption, owing to the absence of any indication of involvement of the general abdominal cavity.

I was shown a specimen of the urine, which was normal in appearance and had been passed in sufficient quantities during the day.

Here there were conditions presenting a curious problem.

On the chances, the charge of shot had, from its direction and size, passed through the pelvis, lacerating the rectum and bladder, and lodging in the abdominal wall. From the large number of shot, the viscera involved must have been injured beyond redemption; and any attempt at their repair, granting such serious injuries, must have been out of the question. So much one would conclude from the position of the wound of entrance and the immediately succeeding symptoms. An operation at time of the injury would have been evidently a hopeless task.

To offset these conclusions, the history of the case for three days pointed to conditions much less serious. If the rectum had been injured, there should have followed pain, tenesmus, bloody stools and foul discharges. There had been no rectal discomfort, and the stools were normal. If the peritoneum were injured, there should have set in before the time at which I was called, symptoms of general peritoneal disturbance. These were not prominent. If the bladder were injured, there should have been persistent hematuria with vesical tenesmus and an acute cystitis. Of these hematuria alone had been present, and this had almost entirely subsided. There were then to guide me the wound of entrance and the induration in the anterior abdominal wall, which presumably represented a wound of exit. Between these two were the pelvic structures mentioned. What conclusions could one draw. A single ball might have entered at the point where this charge did, and, by one of those unaccountable deviations of which examples are so frequent, have passed around the trunk superficially. It did not seem possible that such a course could have been followed by an ounce of small shot. Besides one thing was certain: the hematuria showed that the bladder must have been penetrated, though, of course, a single shot might have accomplished this.

Another most important point was the cause of the inflammatory zone in front. This might be due to the irritating presence of the shot, an infiltration of urine, or the two combined. Here arose prominently the question of operating; and here, without doubt, the course pursued is open to adverse criticism. If urine were extravasated and burrowing, perhaps, towards the peritoneum, it should certainly, one would think, be given a chance of exit externally. On the other hand, the area of inflammation was small, and much too high, apparently, to be in a line with a bladder wound; the fluid, if present, was evidently pointing and becoming very superficial, and above all, the boy's general condition for two days had been steadily improving. If the charge of shot had penetrated rectum and bladder, the injuries, judging from the enormous wound of entrance, must by that time have been beyond repair. I advised against operation, and was supported without a question by my three consultants.

The boy was given large, hot creolin dressings over wounds and abdomen, and expressed himself as feeling very comfortable. Alcohol and a light, stimulating diet were advised. The bowels to be kept open. The superficial abscess to be opened at the proper time.

The prognosis was necessarily most doubtful or worse, and the best hope a very long and tedious convalescence, with a probability of permanent vesical injuries.

Within twenty-four hours the boy was dead.

I copy Dr. Greene's letter partially: "The patient began to appear uneasy, and his pulse faltered at about ten that night; and he became very thirsty, continually asking for water. The temperature increased to 104°, and the bowels became more swollen and tender. While the dark spot increased in size and grew still darker [the anterior inflammatory zone], the pulse went up to 140, and grew more feeble. All of these symptoms gradually grew worse, alternated with some delirium, until he finally went down, without much apparent pain. Of course, the cause of his death was peritonitis, without doubt. I examined the body soon after his death, and passed a long steel sound into the wound at the back, and from thence directly through the body to the anterior wall of the abdomen, where the whole charge of shot was buried. The entire charge passed directly through the bladder, making a large, ragged wound; and the only wonder to me is that the boy did not die at once from the shock."

There was no further autopsy.

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Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.

ACTÆA RACEMOSA IN OVARIAN IRRITATION.

Mr. James Brunton[1] calls attention to this drug, which though in use in America for a great many years, has been overlooked in Great Britain. He has used it for a number of years with most favorable results, and after detailing the history of a few cases in which he has employed it with success, he sums up with the following conclusions:

"It is certainly anodyne, and may with advantage take the place of bromides and opiates for dysmenorrhœic pain. In addition it has a direct action on the uterus, causing an increase of the menstrual flow in scanty menstruation.

"The best way to administer it is to give 30-minim doses of the tincture thrice daily, commencing four days before, and continuing over the period.

"In metrorrhagia and menorrhagia it is beneficial as a regulating agent, though sometimes disappointing. In ovarian pain and nervous depression it is invaluable, and almost a specific."

SIXTEEN CASES OF OPERATION FOR CANCER OF THE UTERUS.

Dr. Braithwaite[2] gives the results of sixteen cases of operation for cancer of the uterus, of which twelve were complete hysterectomies, and four were high amputations. Of the twelve hysterectomies, one died of acute septic peritonitis following the operation, in two cases the disease was found to have penetrated the uterus, and the patients died a few months afterwards. Of the nine remaining cases the disease returned in four, leaving five in which there had been no recurrence after an interval of from eleven months to six years.

As regards the method of treating the broad ligaments, Dr. Braithwaite does not advocate exclusively either ligatures or pressure forceps, but is governed by the peculiarities of the case.

Of the four high amputations, one died from the shock of the operation, in two the disease returned, and one was free from disease five years afterward. He thinks the latter operation should be confined to early cases of squamous epithelioma and considers it as difficult as complete extirpation, with a greater danger of secondary hæmorrhage.

EXPERIMENTS ON THE CADAVER AS REGARDS THE SCHÜCKING METHOD OF VAGINAL FIXATION.

This method of treating obstinate retroflexion consists in elevating the uterus, passing a curved needle armed with a ligature along the uterine canal through the anterior wall of the uterus, and bringing it out in the anterior vaginal cul-de-sac. The two ends of the ligature are then tied, and the uterus kept in a position of anteflexion.

A case in which the ligature had to be removed on the second day on account of severe pain in the bladder, and region of the right kidney, led Dr. Glaeser[3] to make some experiments on the cadaver, as to the course of the ligature, and the liability of wounding bladder or ureters.

In ten cases immediately after death, the operation was performed, observing all precautions as upon the living subject. The results were as follows: In seven cases neither bladder nor ureter were injured, in two cases the bladder was perforated, in one of which the end of the ureter was so included that though immediately after the operation the ureter could be sounded, yet if the ligature had been tightened as is advised, compression of the ureter would have probably occurred. In the last case the ligature passed directly through the lumen of the ureter. In none of the cases did the lifting of the bladder with the catheter cause any injury of the mucous membrane, hence bleeding "intra vitam" must be looked upon as evidence of puncture of the bladder by the needle.

From these experiments it is evident that the Schücking operation is by no means one devoid of danger.

MASSAGE IN RETROFLEXION WITH ADHESIONS.

Stocker[4] advocates a new method of massage in certain obstinate cases of retroflexion with adhesions. Recognizing the difficulty of putting the adhesions on the stretch with fingers alone, and the danger of the use of the sound as usually employed, he advises arming the sound or other suitable instrument, with cotton soaked in some disinfectant. This is carried into the uterus, and the organ carefully raised while at the same time the fundus is gently rubbed and kneaded through the abdomen. He has found this a very effectual and safe method, inasmuch as the cotton protects the lining membrane of the womb from injury, and the antiseptic solution lessens the danger of septic infection.

ASCENDING GONORRHŒA IN WOMEN.

Wertheim[5] seeks to throw light on the question of the mode of occurrence of peritonitis following gonorrhœal affections. He refers to the presence of the gonococcus in the contents of the tubes, and shows that the former idea that the gonococcus would not affect pavement epithelium is not tenable. It has been found even in the knee-joint. The theory has been advanced that with the gonococcus other pyogenic micro-organisms are found, which are really the cause of the peritonitis. To help decide some of these doubtful points, the author instituted a series of experiments on animals.

He first describes in detail his method of obtaining pure cultures of the gonococcus, which he was able to effect even when the pus was taken from the female genitals mixed with other forms of bacteria. By direct inoculation of these cultures upon the male urethra, in five cases was true gonorrhœa produced.

He gives further several points as to the biology of the gonococcus Neisser which should be studied in the original.

To determine the presence of the gonococcus in the contents of tubes the subject of gonorrhœal salpingitis, he considers the method by culture easier and more sure than by the microscope.

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[1] The Practitioner, April, 1892.

[2] British Medical Journal, February 13, 1892.

[3] Cent. für Gyn., No. 21., 1892.

[4] Ibid, No. 2, 1892.

[5] Arch. für Gyn., Band xlii., Heft 1.

A second series of experiments by inoculating the peritoneum of animals showed that the gonococcus does actually cause an inflammation of that membrane which is in certain animals purely local, and in none causes death, in this respect showing a marked distinction from the staphylococcus, and streptococcus pyogenes.

He explains the failure of observers to find the gonococcus on the ground of faulty observations and methods. First, the cases must be fresh, which are difficult to obtain, then the method of preparing and staining must be very exact. He has succeeded in demonstrating their presence in the peritoneal cavity, and claims that the infection may occur from the escape of pus from the ostuim abdominale of the tube, or directly through the walls of the tube itself.

Finally, in two cases he was able to demonstrate the presence of gonoccocci in the pus of ovarian abscesses which had no connection with the tubes, and also in the ovarian tissue itself, proving to his mind that these bacteria could invade solid tissue.

A CASE OF THREE URETERS.

Dr Paul Baumm[6] describes a case of this very rare anomaly. It was that of a girl of eighteen who had suffered all her life from incontinence of urine. A careful examination showed a minute opening to the right near the mouth of the urethra, from which urine flowed. By the passage of sound it was demonstrated that this was the opening of an ureter, and that it had no direct connection with the bladder. An interesting question to be decided was whether this was the ureter belonging to the right kidney, or if it was a third, starting as well as the normal ureter from the kidney or formed by a division of it somewhere in its course. The amount of urine secreted from this abnormal opening was two hundred grammes in twenty-four hours, while eleven hundred were emptied from the bladder, which rendered it probably that this did not represent the whole secretion from the right kidney. Temporarily stopping the flow from the supplementary ureter was followed by severe pain, demonstrating that in all probability it started from the kidney or near to it. At the time of the operation, the openings of the two ureters were seen in their normal position thus proving that this was a third ureter.

The operation was performed by opening the bladder over the pubes, excising a portion of the bladder wall over the aberrant ureter which at one point was sacculated, and stitching its circumference with fine silk, then occluding the vaginal end with a suture. The result as regards the relief to the incontinence was satisfactory, though a ventral hernia resulted at the seat of operation.

Dr. Baumm considers this a case of failure of the Wolffian canal to become completely obliterated and looks upon it as a proof that these canals open near the mouth of the urethra, a fact which has been demonstrated in the case of the cow.

OVARIAN TUMORS WITH TWISTED PEDICLES.

Dr. Johnson [7] gives the histories of five cases of ovarian and one of uterine tumor with twisted pedicles. Their interest lies in the fact that they are usually difficult to diagnosticate, and their tendency to strangulation causes the frequently sudden and unexplained death of the patient.

On opening the abdomen, in all the cases except the fibroid the conditions were those characteristic of the cutting off the blood-supply of the tumor; black peritoneum, adhesions, friable decomposing cyst wall, and a twisted pedicle. In the case of the fibroid the tumor had rotated but twice on its axis, and the circulation was not wholly cut off.

In spite of the apparently hopeless condition of some of these cases, they all recovered. The diagnosis is apt to be obscure, and the author throws no light on their causation.

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Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Sixteenth Annual Meeting, held in Brooklyn, September 20, 21 and 22, 1892, the President, Dr. John Byrne, of Brooklyn, in the chair.

FIRST DAY. — MORNING SESSION.

Dr. Charles Jewett, of Brooklyn, delivered the

ADDRESS OF WELCOME.

Dr. Chauncey D. Palmer, of Cincinnati, read a paper on

PERIODICAL INTERMENSTRUAL PAIN.

Within the last twelve years he had seen and had under his care for months at a time, five or six cases, distinctly pronounced, of what he would call periodical intermenstrual pain. The symptomatology was: At a certain time following menstruation, generally about the middle of the intermenstrual period, there had been attacks of pelvic pain, located in either ovarian region, sometimes on one, and again on the opposite side. These pains varied in severity and duration, were usually short, usually intermittent, come on at night as well as during the day, continued from two to nine days, were uninfluenced by bodily movement, were unattended by febrile phenomena.

The literature of the subject was limited, but it had been written upon briefly by Coe, Oldham, Olshausen, Tait, Thomas and Mundé, Pozzi, etc. The conclusions arrived at by the author were: (1) Periodical intermenstrual pain is a comparatively rare disease; (2) The disease is ovarian, not uterine; (3) It is an oöphoritis or peri-oöphoritis, or both; (4) The chief underlying exciting cause of these attacks of pain is the morbid obstruction to the extrusion of the contents of the Graafian follicles; (5) Many other morbid conditions (uterine, peri-uterine or ovarian), may be associated with the oöphoritis, but their presence is not the cause of the essential symptoms; (6) Cure is effected only by overcoming the disease of the ovary, or by its extirpation.

Dr. Wm. H. Baker, of Boston, thought the pains were generally of ovarian origin. He had had a number of cases which were very difficult to relieve; local extraction of blood from the uterus by leeches, had benefited some cases. Ovariotomy under these circumstances had been overdone in the past, but there was now danger in sometimes withholding it, and in a certain number of cases it was necessary to remove the ovaries.

Dr. Joseph Taber Johnson, of Washington, agreed with Dr. Baker, but thought all other means should first have been tried and failed. One of such means was electricity. Total extirpation of the appendages in his hands, performed in only one case, had afforded immediate relief.

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[6] Archiv. für Gyn., Band xlii, Heft 2.

[7] New York Journal of Gynecology and Obstetrics, August, 1892.

DR. H. C. COE, of New York, thought the physician should try to determine whether the pain was ovarian, tubal, uterine, or from depressed nervous system. He believed the pain was not purely intra-ovarian, as the tubes were often found enlarged, thickened and adherent, and evidences of peri-oöphoritis were present. In one case pain was due to pressure of a calcified Graafian follicle in the ovary. Too much conservatism was dangerous.

DR. WM. T. HOWARD, of Baltimore, cited some cases where total extirpation of the appendages had failed to relieve intermenstrual pain. He doubted if palpation could determine a pathological state of the ovary, as it might not be enlarged or to the touch seem different from the normal ovary.

DR. MATTHEW D. MANN, of Buffalo, had greatly relieved two cases by galvanism where palpation revealed no pathological state of the ovary or uterus.

DR. H. P. C. WILSON, of Baltimore, advocated galvanism. Pain might be due in some instances to remaining congestion in ovaries and tubes, after menstruation had ceased, and relief might be obtained by depleting the uterus. Total extirpation was justifiable only after other means had failed. In a few cases ovariotomy had not relieved the pain.

DR. A. P. DUDLEY, of New York, believed the pain was due to changes in the ovary. He had found rectal touch the best means of diagnosis. Intra-ovarian pressure from cysts was frequent cause of pain. He used to remove ovaries for this condition, but now he excised and evacuated the cyst, and sewed the cut edges of the ovary together. He had done this in nine cases, relieving the pain, some of the women afterwards becoming pregnant.

DR. H. MARION SIMS, of New York, had removed appendages in two cases without relief, and later, in reopening the abdomen, had broken up some adhesions, which resulted in relieving the pain.

DR. A. REEVES JACKSON, of Chicago, cited a case where, all other means failing, total extirpation of appendages failed to relieve.

DR. A. J. C. SKENE, of Brooklyn, thought temporary relief might be obtained by treating the uterus.

DR. WM. H. WATHEN, of Louisville, read a paper on some of the

COMPLICATIONS DURING AND AFTER THE OPERATION, IN A FEW RECENT CASES OF ABDOMINAL AND PELVIC SURGERY.

He cautioned the younger members of the profession against allowing their enthusiasm to lead them into doing operations which might or might not redound to their glory, while proving of no benefit, or disastrous to the patients and bringing discredit upon scientific surgery. The cases reported from his practice of the past year, it was hoped, might teach us to do better work by learning how to treat complications and prevent accidents.

The first case was that of a woman referred to him by a surgeon in Missouri, with a diagnosis of pelvic abscess on the left side. In July, 1891, the patient had begun to suffer severely in the left inguinal region, temperature and pulse increased, tumor felt in the left side of the pelvis extending into the abdomen. After several weeks the pain and fever subsided, and the patient thought she was well, until in July, 1892, she had a recurrence of pain and fever and again noticed the tumor. It was impossible to make a correct diagnosis, but there being a positive necessity for laparotomy, Dr. Wathen opened the abdomen August 20th, found the omentum thick, signs of extensive chronic peritonitis, firm adhesions, tumor found to be an embeded broad ligament cyst, which had not only unfolded the layers of the broad ligament but had stripped the peritoneum from the posterior pelvic wall to a point above the sigmoid flexure of the colon, separating the layers of the mesocolon so that the mesenteric surface of the bowel was attached to the thin cyst wall. The bowel could be traced on the anterior surface of the tumor over the right side. Uterus enlarged to three times its normal size, peritoneal covering partly separated, exposing muscular coat. The patient made an uninterrupted recovery.

The second case was that of a woman who had had pain and pressure in the region of the uterus for six months. Dr. Wathen felt exudates on both sides of the organ larger than an orange. He performed exploratory laparotomy and a band of omentum nearly as wide and thick as the hand was found attached to the right broad ligament in the region of the severe pain. It was ligated in two places and divided. The enlarged uterus and the exudates in the broad ligament were united in one solid malignant mass. The uterine mass had insinuated itself under the sigmoid flexure. The patient had since had no pain nor fever, but the ultimate result naturally would be fatal.

The third case proved to be one of extensive adhesions from peritonitis, which probably had been caused some time before by a fall.

The fourth case proved to be one of extra-peritoneal abscess of appendiceal origin in the right inguinal region, although the appendix could not be found. The patient recovered.

In the fifth case, in which he extirpated the uterus for malignant disease, the nurse for some unknown reason during convalescence gave a vaginal injection of bi-chloride, 1–2000, which penetrated into the peritoneal cavity, notwithstanding which, however, the patient recovered.

DR. WILLIAM T. LUSK, of New York, presented

A SPECIMEN OF LITHOPEDION, AND ALSO ONE OF FIBROID TUMOR WHICH VERY MUCH RESEMBLED THE LITHOPEDION.

The patient from whom this fibroid was taken was sent to him, as an example of extra-uterine pregnancy, for operation. On examination he found intra-uterine pregnancy, and a movable body in the abdomen which felt like a fœtus. There was no history of extra-uterine pregnancy, and under these circumstances he asked Dr. Thomas to see the patient with him. He was somewhat non-commital, and advised Dr. Lusk not to be too certain of his diagnosis. An exploratory incision revealed intra-uterine pregnancy, and discovered this body attached by a long pedicle to the pregnant uterus. It proved to be a fibroma. The pedicle was excised from the uterine walls, the surfaces stitched together, and the peritoneum drawn over. The patient made an uninterrupted, rapid recovery, and gave birth to child on the 13th of September.

Two days later Dr. Lusk was called to examine a patient on account of a cyst on the right side. Three years previous, her physician said, she had had an attack of peritonitis, and since that time she had had more or less trouble from tympanitic distention of the abdomen, colicky pains and pain on the right side. A cyst was found adherent to the right side, extending behind the uterus and evidently embracing the intestine. He supposed the tympanitic distention was largely due to the tumor, and proposed operation for that reason. Having the patient on the table under ether, placing his hand over the abdomen he felt the body, which was strikingly like the fibroma in the case just described, the tumor in both cases being in the same locality. He will hardly venture to say that it was a case of extra-uterine pregnancy, because the patient was a widow of immaculate character and had been a widow many years. On making the incision he found this lithopedion, perfectly free, but attached to the peritoneum. He remarked on the very similar appearance of these two specimens. In the latter the sac was calcarious. Whether it was tubal or not he could not state, owing to the number of years which had elapsed. The sac was friable, contained a considerable amount of fluid and a good deal of the membranes were in a calcarious condition. Considerable time was required to remove it because of its friability, but it was finally removed, and the patient made an excellent recovery. A few hours after the operation he learned that twelve years previous this patient had had all the signs of pregnancy and had gone on two months and then had a flow, and from that time suffered from sick stomach and violent pains, sometimes with an intermission of two or three days and then a recurrence. At the seventh month she had violent hæmorrhage and then labor pains, and believing herself in labor sent for a physician who examined her, said she was in labor, watched her twenty-four hours, but the baby did not arrive. The pain subsided, and it was thought the child would be born a month later; but it never came, which accounted for the lithopedion.

Dr. M. D. Mann, of Buffalo, related a case of lithopedion, of thirteen years standing, originally diagnosed as extra-uterine pregnancy which proved to be a pregnancy in one horn of a uterus bicornis, the fœtus being imprisoned there. On evacuating the sac the odor was the worst he had ever encountered. Patient made a good recovery.

He related a second case of lithopedion from an extra-uterine pregnancy of a number of years standing where he removed from the sac a perfectly formed fœtus as fresh as if it had not been dead over a day. The case illustrated the fact that extra-uterine pregnancy was not necessarily fatal at the time.

Dr. S. C. Gordon, of Portland, Me., thought these cases resulted in harm if let alone, and electrical treatment was not always safe.

Dr. Henry C. Coe, of New York, presented a paper on

THE ELECTIVE CÆSAREAN SECTION — THE MOST FAVORABLE TIME FOR OPERATION.

The author thought the Sanger operation should possess especial interest for the Fellows of this Society, since of the 67 cases performed during the last decade, with a maternal mortality of 40 per cent., 18 have been contributed by them, performed by nine different surgeons, with a mortality of 33⅓ per cent., four of the six fatal cases being particularly unfavorable, while one death (Dr. Grandin's case) was due to puerperal mania, and could not be referred to the operation.

Ten operations have been reported since 1889 and all have been partially elective, that is, performed as a substitute for embryotomy, and all were successful. The author used the term "elective" in a narrower sense, restricting it to those few cases in which, having examined the patient during the latter months of pregnancy, the Cæsarean section was resorted to as the first and only procedure to be adopted. Under these circumstances, when the patient is under observation in a hospital, the important question arises: When is the most favorable time to operate? Shall we choose our own time, or allow this to be determined for us by the onset of labor? Dr. Harris has clearly shown that the two elements of success are early operation and perfect technique.

The majority of obstetric writers repeat the injunction: Do not operate until labor has begun; that before the full establishment of labor and after the escape of the liquor amnii, the chances of success are greatly diminished. The author thought that the dangers which it had been urged would be incurred by disregard of this rule, namely, serious hæmorrhage, due to imperfect contraction of the uterus and the retention of the lochial discharge by reason of non-dilatation of the cervix were purely imaginary and theoretical and must yield to the evidence of clinical experience which shows where the operation is done *before* labor that the uterus does contract well when emptied of its contents and that the cervical canal is *not* so contracted as to prevent the escape of the lochia.

Dr. Coe's experience, limited to the two following cases, entirely agreed with the position taken by Harris, that, other things being equal, the chances of success were increased rather than diminished by operating *before* the commencement of labor.

Case I. Primipara, aged twenty-two, four feet, six inches, rachitic with marked kypho-scoliosis. Conjugate vera estimated at less than 3½ inches, with lateral obliquity of the pelvis. It being estimated that the patient was within a few days of full term, Dr. Coe operated without waiting for the beginning of labor, though an unsuccessful attempt had been made to produce it. The placenta was directly in the line of the uterine incision, which was made after the uterus had been lifted out of the body, and a rubber cord applied. Little blood was lost, the uterus contracting firmly as soon as it was emptied; the cervix was sufficiently dilated to insure drainage; no fluid entered the peritoneal cavity. The child was vigorous; the mother made a good recovery and is well to-day; the infant lived a year, and died of some acute trouble.

Case II. Multipara, age thirty-seven. Has one child twelve years of age, and miscarried at seven months, six years ago. A small fibroma, growing from the lower uterine segment, increased in size until it encroached upon the space between the uterus and bladder, compressing the right ureter and causing hydronephrosis. Cœliotomy was performed in the winter of 1890–91 and an unsuccessful attempt was made to remove the tumor, which was extra-peritoneal and inaccessible from above. Patient recovered, was quite well, and menstruated for the last time October 27, 1891. At the sixth month the induction of premature labor was advised against by Drs. Lusk, Polk and Tuttle, who believed it better to allow her to go to full term and then perform cœliotomy, remove the tumor and deliver *per vias naturales*, or do Cæsarean section.

Dr. Coe saw the patient at the end of the eighth month, when the tumor had increased so in size that there was a space of only two inches left for the passage of the fœtus. The cervix was high up on a level with the upper border of the symphysis, and could barely be reached with the finger-tip; general condition good; child well developed. The estimated date of confinement being August 10th, Dr. Coe operated on July 26th, and found marked hydramnios and the placenta situated anteriorly, as in the former case. The uterus contracted well and no more blood was lost than usual. As it was possible to pass two fingers through the cervix, it was unnecessary to dilate it. The child was vigorous; no fluid entered the peritoneal cavity; the patient made a good recovery. At this time (two months after operation) both mother and child are perfectly well.

Six other cases have been reported by American surgeons, in which the operation was performed *before* labor, with five recoveries, the fatal case being a most unfavorable one of the cancer of the cervix.

The advantages secured by operating before labor were summarized as follows:

I. To the surgeon:

(1) After obtaining all the needed counsel, he sets his own time for the operation during the day, and is not summoned hurriedly at night to operate by imperfect light and without his regular corps of assistants.

(2) He secures the same conditions as in an ordinary cœliotomy — thorough preparation of the patient, rooms, instruments, etc.

(3) Since the patient is in the best possible condition, he is not hurried, is not obliged to "work against time," slurring those numerous minor details, which are so essential to success.

II. To the patient:

(1) She is spared the suspense incident upon long waiting. (This important consideration strongly influenced the author in his second case, where the patient was in such a nervous state that had he delayed the operation two weeks after she entered the hospital he doubted if she would have survived it.) It was important to recognize the importance of the *morale* in ordinary cases of abdominal section, but much more important here, where two lives were at stake.

(2) Having been thoroughly prepared for the operation, she goes to the table in such a condition that the element of shock is reduced to a minimum and subsequent convalescence is more rapid and uncomplicated.

(3) Asepsis is perfect. As no examination of the genital tract has been made on the day of the operation, there is no chance for infection in this way. Sepsis can never be positively excluded under contrary conditions, especially where labor is induced in the usual manner.

Dr. Coe sought to show that the two essentials to success — early operation and perfect technique — were intimately related to each other, so that in securing the one the other was secured also. He believed that future statistics would support the stand he had taken, and was gratified to note that it was already held by Drs. Goodell, Kelly, Parish and Noble. Cæsarean section would never be regarded as a primary obstetrical procedure, until was possible to place it on a par with other abdominal operations, and demonstrate that under the same conditions it is no more serious than an ordinary cœliotomy.

(*To be continued.*)

AMERICAN OPHTHALMOLOGICAL SOCIETY.

(Concluded from No. 14, page 337.)

Twenty-eighth Annual Meeting, held at Fort Griswold House, New London, Conn., July 20 and 21, 1892.

THE EYE OF THE NEGRO,

by Dr. Charles W. Kollock, of Charleston, S. C.

In presenting the paper, Dr. Kollock said that he had no wonderful discoveries to make known, but merely desired to bring before the Society some points that had interested him during a somewhat extensive practice among these people. Attention was called to the fact that the negro is fast losing his identity, as far as purity of blood is concerned, and that the eye of the negro has deteriorated very much since the days of slavery. Prior to this period the negroes were carefully looked after by their masters and being essentially an agricultural people, there was little or no opportunity for bringing on eye-strain. The testimony of older physicians has proved that syphilis and other wasting diseases were not common among them, and that iritis and keratitis, which are now so commonly seen were of rare occurrence. During the war and immediately after it was over, they contracted syphilis, principally from the troops who were encamped in their midst; and now it is scarcely an exaggeration to say that when you see a negro, you see a case of syphilis. To this disease and their very careless mode of living, he thought was due their great susceptibility to corneal inflammation, which was now causing great destruction of vision. Among the older negroes and ex-slaves, it had been noted that nebulous corneæ, iritic adhesions, and eyes lost from ophthalmia neonatorium were very unusual; but with the younger and post-bellum, it was not only of every-day occurrence but constantly increasing. Cataract and glaucoma were about as commonly observed in the negro as in the white. It had been said by a number of observers that trachoma was exceedingly rare among the negroes; and while he agreed that it was infrequently seen, still it was equally unusual among the whites in Charleston and throughout South Carolina. The most severe cases had occurred in negroes. He mentioned that as the State was one into which few immigrants had come, that perhaps the worst forms of granular conjunctivitis had not been introduced. Xerosis conjunctivæ was a condition of the eyes that had been seen exclusively in the eye of the negro, and especially in children. It was frequently accompanied by hemeralopia but not invariably, and was essentially a condition which was due to a low state of health. A case had been recently seen in an adult male who complained only of night-blindness. The peculiar conjunctival changes were present, but there was no corneal lesion. The ophthalmoscope showed a slightly hazy papilla, but no further intraocular changes. There was marked concentric contraction of the visual fields, but no scotoma, and the color perception was fairly good. It seemed very strange that this affection was not found among the whites, many of whom lived in the same localities and under similar influences as the negro.

The refraction of the negro eye was exceedingly interesting, as it was undoubtedly undergoing a change. He believed that the eye of the pure blooded negro who could not read was emetropic or slightly hyperopic and never myopic; that among the educated pure bloods, errors of refraction were becoming more frequent; and that with the mulattoes ametropia was almost if not quite as common as among the whites; of sixty cases of blacks and mulattoes recently examined (for the most part with their eyes under the influence of atropia or homatropia), eleven were blacks and forty-nine were mulattoes. Of the eleven blacks, seven were males and four females. Two of this number were myopic, two were hyperopic, and three were emetropic. The forty nine mulattoes were seven males and forty-two were females. Three of the males were myopic and four were were hyperopic. Nine of the females were myopic, thirty-two were hyperopic, and one was emetropic.

CASES OF MONOCULAR AMBLYOPIA IN MEMBERS OF THE SAME FAMILY,

by Dr. Charles W. Kollock, Charleston, S. C.

Two sisters and two brothers of the same family were amblyopic in the left eyes.

Case I. Female, aged forty-seven years. Vision in right eye 15-lxx, left eye 4-cc. With plus 1.50 D. right eye was 15-xv, left not improved by any glass. Ophthalmoscopic examination showed hypermetropia between three and four dioptres, but nothing else to account for the amblyopia.

Case II. Female, aged thirty-seven years. Vision was never good, but always better in the right eye. Right 15-lxx; left, large objects. Neither eye was improved by any glass. The ophthalmoscope showed disseminated chloriditis, and there were other physical signs of inherited syphilis to be seen externally. She was said to have been born with sores on her body, and had never been strong and healthy.

Case III. Male, aged thirty years. He had been paralyzed by an attack of brain syphilis (acquired). Right eye 15-xx; left, large objects. No glass improved either eye. The ophthalmoscope showed the right disc slightly hazy but no inflammation. In the left was a coloboma of the nerve measuring twelve dioptres in depth. There were no signs of inflammation.

Case IV. Male, aged fifty. Vision in right 15-cc; left, 6-cc. Right with plus 2.23 was 15-xv; left with plus 3.50 was 15-xv. The ophthalmoscope showed nothing beyond the hyperopia. In only one of the four cases were there any signs of inherited syphilis. Two children of Case 1 were also examined, and exhibited conditions in the left eye not present in the right. The daughter, aged twenty-eight years, had slight dilatation of the left pupil, for which no cause could be assigned and which still remains. Under homatropine both eyes showed hyperopia of one dioptre and vision 15-xv. The son, aged twenty-two years, was examined under homatropine. Right with plus 0.50 D. was 15-xv; left with plus 0.50 ○ 0.50 cyl. 90° was 15-xv.

ON THE FREQUENCY OF POSTERIOR CAPSULAR OPACITIES AT THE PLACE OF ATTACHMENT OF THE HYALOID ARTERY,

by Dr. W. F. Mittendorf, of New York.

The paper calls attention to the frequency of small, round and lenticular opacities, which the writer believes are the remains of the fœtal hyaline artery, or mark the attachment of the artery to the posterior lens capsule. After observing two cases of remaining hyaline artery, the author studied every eye with a strong lens and the ophthalmoscope, and found that in 1,884 persons these opacities were observed in 44 cases, which is a little more than two per cent. of all persons examined. They were observed more frequently in the right eye than in the left, and oftener in the male than in the female; not infrequently they are seen in both eyes of the same patient. They vary in size from a dot as small as the point of a pin to that the size of a poppy-seed, and frequently a magnifying power of a lense of five or six dioptres is necessary to see them.

Dr. Oren D. Pomeroy, of New York, presented a paper on

SOME CATARACT EXTRACTIONS WITH AND WITHOUT IRIDECTOMY,

which was read by title.

Dr. Carl Koller, of New York, exhibited

PREPARATIONS OF THE NERVES OF THE CORNEA.

Erhlich's method of staining the peripheral nerves was by the injection of a saturated solution of methylene-blue into the vessels of a recently killed animal. This colors the nerves of the cornea in a beautiful manner, but has the disadvantage of being only temporary and does not permit of the making of preparations. The speaker had for some time been experimenting with the object of making the staining permanent, and had to a certain extent succeeded. As the method was not yet perfect, it was not described, but a number of preparations showing the corneal nerves were exhibited.

SCLERAL PUNCTURE IN DETACHMENT OF THE RETINA,

by Dr. T. Y. Sutphen, of Newark, N. J.

The author described the results obtained in two cases. The first was successful in restoring useful vision; the second resulted in slight improvement.

In both cases the operation was made under cocaine and with antiseptic care, using a solution of bichloride (1 to 12,000). The puncture was made with a narrow Græfe knife near the equator of the globe between the insertion of the external and inferior recti muscles. With the globe well rotated upwards and inward, the puncture was made directly through the conjunctiva, while the return of the globe to its normal position really converted the opening in the scleratic to a subconjunctivæ. Possibly had a larger puncture been made in the second case, the result might have been better, but the conditions of the two cases were quite dissimilar.

Dr. E. E. Holt, of Portland, Me., reported a case of

ORBITAL CELLULITIS,

the inflammation spreading to the temporal region, thence to the neck, interfering with deglutition, extending to the brain and producing death. A brief report of four similar cases was also given.

Dr. C. J. Kipp, of Newark, reported a case of

RECURRENT, BILATERAL INFLAMMATION OF THE CAPSULE OF TENON, IN CONNECTION WITH MERCURIAL POISONING.

The first attack resulted from an injury, but the attacks continued to recur. The patient was employed in an incandescent electric light manufactory and had become poisoned from the mercury used in his work. The recurrences continued until he gave up this work; but since leaving it (a year and a half), he has had no attack.

PULSATING EXOPHTHALMUS,

by Dr. R. A. Reeve, of Toronto, Can.

The case was one in which the pulsating exopthalmus had followed trauma. It was thought that there was a lesion of the internal carotid, allowing the blood to enter the cavernous sinus. Pressure to the carotid proved of no avail. A year ago the right common carotid was tied. Pulsation and bruit ceased for a few hours, and then returned. Some months later, finding that compression of the left common carotid stopped the pulsation and bruit, this vessel was tied, but the pulsation still persists. There is pulsation in the right carotid above the seat of ligature. Pressure upon the right external carotid stops the pulsation and bruit absolutely.

SUB-CONJUNCTIVAL APPLICATION OF COCAINE,

by Dr. Carl Koller, of New York.

The instillation of cocaine has only a superficial effect, but by beginning the instillation half an hour before operation, the deeper tissues are sometimes rendered anæsthetic, but not always. By the sub-conjunctival method, the deeper tissues are rendered anæsthetic. After making the conjunctiva anæsthetic by a four per cent. solution, a few drops of a one per cent. solution are injected beneath the conjunctiva. Tenotomy can then be done without the slightest pain. Cataract operations and iridectomies can be done without the slightest pain by rendering the conjunctiva anæsthetic and then injecting three or four drops of a sterilized four per cent. solution beneath the conjunctiva and waiting ten minutes.

Dr. Carl Koller, of New York, read a paper on "The Form of Retinal Images in Astigmatic Eyes."

Dr. Chas. J. Kipp, of Newark, N. J., reported a case of Gumma of the Ciliary Body, and exhibited the specimen.

Dr. F. Buller, of Montreal, Can., exhibited an Improved Trial Frame.

Dr. J. A. Andrews, of New York, showed an Apparatus for Washing out Cortical Matter. He also exhibited drawings of four cases of Gumma of the Iris.

Dr. Lucien Howe, of Buffalo, demonstrated a Pocket Ophthalmoscope.

Dr. R. A. Reeve, of Toronto, described a Modification of the Rotary Prism Test.

Dr. John Green, of St. Louis, reported a case of Hyaline Bodies in the Nerve Head.

The following officers were elected: President, Dr. Hasket Derby, Boston; Vice-President, Dr. George C. Harlan, Philadelphia; Corresponding Secretary, Dr. J. S. Prout, Brooklyn; Recording Secretary, Dr. Samuel B. St. John, Hartford; Delegate to the Executive Committee, Congress of American Physician and Surgeons, Dr. John Green, St. Louis; Alternate, Dr. D. B. St. John Roosa.

The following were elected to membership: Dr. J. A. White, of Richmond, Va.; Dr. Walter B. Johnson, of Paterson, N. J.; Dr. G. W. Hale, Nashville, Tenn.; and Dr. R. L. Randolph, of Baltimore, Md.

The next meeting will be held at New London, Conn., on the third Wednesday of July, 1893.

The German Anthropological Congress will hold its next annual meeting at Hanover, in 1893. Professor Virchow has been chosen President, with Professors Waldeyer and Schaafhausen as Vice-Presidents.

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FORMS OF APPENDICITIS WHICH ARE AMENABLE TO STRICTLY MEDICAL OR EXPECTANT TREATMENT.

That there are conditions of appendicitis which have a natural tendency to recovery, and which get well without surgical intervention, is acknowledged by the best authorities, medical and surgical. There are light forms and forms of medium intensity which are not attended by suppuration, and which end in resolution. According to McBurney, nearly eighty per cent. of cases of appendicitis recover without surgical treatment, and the statistics of Guttmann, of Fürbringer, and of Fowler, very nearly confirm this estimate.[1]

There is no little difficulty in making an early diagnosis between those cases which tend to perforation and to produce peritonitis, and claim a surgical operation, and such as are simple irritation or inflammation of the appendix with or without fibrinous exudation, and do not tend to suppuration. At a meeting of the Practitioners' Society of New York, this difficulty was illustrated by Dr. Shrady. A physician, formerly well-known in New York, had had four distinct attacks of appendicitis, in all of which the question of operation arose. Dr. Shrady had seen the patient in three of the attacks, all of which were well pronounced, while the fourth occurred in Paris, where the patient was seen by a distinguished surgeon who made a like diagnosis. There, also, the question of an operation came up. Each attack was attended with all the usual severe symptoms which would appear to usher in the formation of an abscess; there was dulness, tenderness, more or less rigidity, and some œdema in the neighborhood of the cæcum. In each attack the advisability of an operation was freely discussed. The patient was willing to take the risks, but in each instance the symptoms gradually disappeared and he recovered. Death subsequently occurred from another cause, and a post-mortem was made which showed that the appendix was perfectly sound. There was not the slightest appearance of any inflammation around it; it was not even thickened.[2]

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[1] Discussion at the Society of Internal Medicine of Berlin, May, 1891. Clinical Society of London, March, 1891.

A similar case was reported by Dr. Bull[3] where an operation was performed, and no lesions were found which could account for the symptoms of appendicitis. Talamon, who has the present year published a valuable monograph on appendicitis,[4] in commenting on these cases, thinks that the most probable explanation is afforded by the hypothesis of a stercoral calculus suddenly penetrating the muscular canal of the appendix, and there provoking the spasmodic contraction and all the painful consequences which result from such contraction, then falling back into the cæcum, and thus bringing about the cessation of the crisis.

Talamon has made a suggestive contribution to the pathogenic study of the subject in the explanation which he has given — under the head of *appendicular colic* — of the radiating, paroxysmal pain, the vomiting and constipation of the earlier stages of appendicitis, as well as of the morbid events which lead to the ultimate perforation of the appendix when the calculus remains as a permanent obstruction. He compares the appendix to other musculo-membranous tubes, such as the choledochus and the ureter. A gall-stone becoming engaged in the choledochus, determines the characteristic symptoms of bilious colic: the sudden onset, paroxysmal, radiating pains, etc. The same effects result from the engagement of a uric calculus in the ureter. So, too, an intestinal concretion, on suddenly penetrating the appendicular canal, provokes a sudden pain, localized in the right iliac fossa, spreading and paroxysmal, thus resembling intestinal colic, with nausea and constipation (reflex gastric irritation, paresis of the colon). These symptoms are precisely those of the affection called typhlitis, simple or stercoral. The old text-books refer them to fæcal obstruction in the cæcum, but the arrest of fæcal matters is posterior, not anterior, to the painful crisis. The constipation, like the other phenomena, is due, not to any obstruction or impaction (which does not exist), but to a reflex (paralyzing) irritation starting from the mucosa of the appendix, just as the vomiting and constipation of hepatic colic are provoked by a reflex irritation taking its start in the mucosa of the choledochus.

If the first effects of the engagement of the calculus are the same, whether we have to do with the appendix or the choledochus, the secondary effects of the obstruction differ in the two cases. In hepatic colic, the morbid accidents may cease in two ways: either the calculus falls back into the gall-bladder or it is finally expelled into the intestine. In appendicular colic cessation of the painful symptoms can take place by only one mechanism: the stercoral concretion must be forced back into the cæcum; in this event the sickness will end with an attack of colic and a certain degree of appendicitis. Moreover, one attack of appendicitis predisposes to another by leaving the orifice of the canal dilated and more ready to receive new concretions (recurrent appendicitis), just as one attack of hepatic colic favors the occurrence of a new attack.

In hepatic colic, if the "enclavement" of the calculus continues, the ordinary sole consequence is chronic icterus. In appendicitis, perforation is the rule, because the walls of the appendix, deprived of their vitality by the compression of their vessels, offer no resistance to the penetration of the bacteria, which thrive and multiply in the dilated cavity.

In the "simple parietal appendicitis with appendicular colic," of Talamon, the causes, the mechanism, the mode of onset, are the same as in the grave forms, but perforation does not take place; the peritoneum is not involved; the lesions remain limited to the appendix; and in a few days all the symptoms improve and the patient is convalescent. The symptoms of nervous irritation in this "simple" or "stercoral typhlitis" may sometimes be so intense as to simulate diffuse or localized peritonitis (*peritonism, or pseudo-peritonitis*).

In a second form, there is diffusion of the inflammation through the appendix to the surrounding cellular tissue or peritoneum, or both (peri-appendicitis). The inflammation is fibrino-plastic. Suppuration does not take place, as the appendix is not perforated. The exudation in time undergoes resolution, adhesions being left behind in which the appendix may be embedded. According to Dr. A. H. Smith, at the medical meeting aforesaid, every recurrence of fibrinous, non-suppurative appendicitis must result in a firmer barrier to resist rupture of the abscess into the peritoneum, rendering more likely its pointing externally or into the cæcum. This constitutes a new cause of hesitancy for the surgeon who is deliberating about an operation, for this fibrinous exudation may be resorbed, like a pleural or pericardial exudation of the same nature; and this resorption explains the great number of cases of perityphlitis cured medically.[5]

All this merely emphasizes what has been so often pointed out in the columns of the Journal, that in the presence of a possible case of appendicitis, nothing short of the most careful study and watchfulness is permissible. Any such case may at any moment require surgical interference, and the indications for such interference, as has been proved by the experience of those best capable of judging, cannot be exactly laid down in text-books.

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THE USE OF STIMULANTS BY WOMEN.

Habits which have been commonly considered tolerable in men but intolerable in women appear to be losing their exclusiveness in England, at least, and to be invading the ranks of the female sex from the top of the social scale. This has recently been the subject of a somewhat sensational address by Lady Frederick Cavendish, before the National Congress of the Church of

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[2] Medical Record, No. 1016, p. 479.
[3] Loc cit., p. 481.
[4] Talamon: Appendicite et Pérityphlite, Paris, 1892.
[5] Talamon, *loc. cit.*

England, in which the use and abuse of alcohol and tobacco among the ladies of the kingdom are graphically described. She asserts that such objects as "nips," "cocktails" and "B and S's," and the flavors of different brands of cigarettes are as well understood by the female as the male portion of a large and fashionable set, and that the custom is becoming common for ladies to accompany gentlemen to the smoking-room after dinner, and smoke and tipple with them on equal terms. Drunkenness among well-to-do women in England has been known to exist for some time, and the inference is that it is not decreasing, but is rather stimulated by the liberal behavior of the fashionable classes.

In this country, this condition of things does not enjoy the same social tolerance; but it is interesting to notice that on the same day that Lady Cavendish addressed the English audience, the Woman's Christian Temperance Union in New York listened to a speech by Mrs. Nelson, in which she claimed that a large and constantly increasing number of American women were habitually using different stimulants, especially opium. A paragraph sometimes appears in an American paper to the effect that quinine or strychnine is often used as a "pick-me-up," by women. Patent medicines often supply the demand for stimulants, and are especially dangerous on account of the lack of knowledge of their true character.

But the advantages which women enjoy in recent years as compared with the customs which bound them in the past probably, at least, counterbalance the chances of temptation; and it is not likely that the sex, as a whole, is in danger.

MEDICAL NOTES.

Cholera.— During the past week the number of new cases reported in Hamburg has been small. The only city where an increase is noted is in Buda Pesth, but even there the actual number of cases is not large. The quarantine declared by different ports against New York has been abandoned.

Scarlet Fever from Milk.— In a town in England thirty-nine cases of scarlet fever were traced to milk which came from one dealer, and it was found that upon the farm which the milk came the farmer and several members of his family were suffering from the disease.

Clean Bills of Health in Hamburg.— The United States Consul in Hamburg having asserted that clean bills of health were issued by the authorities of the city after it was known that cholera existed in the town, the Hamburg senate has made a formal reply, in which it states that experts discovered the true character of the disease only on the 22d of August, and two days later came the conclusion that the disease was likely to become epidemic; consequently, on the 24th, orders were issued that no more bills should be given out, and these orders were strictly obeyed. The *Normannia's* bill, which bore this date, was given before the order to cease issuing bills was in force.

The Chicago Clinical Review. — Under this title a new monthly medical periodical appears for the first time with the October issue. Its aim will be to present clinical papers in medicine, surgery and obstetrics. The first number, consisting of eighty pages, contains several interesting and instructive reports of cases. It is edited by Drs. G. H. Cleveland and A. I. Bouffleur, with the aid of thirty collaborators.

Medico-Climatology of the World's Fair. — A division of medico-climatology has been established in the department of medicine of the World's Congress Auxiliary. A local committee of arrangements has been appointed with T. C. Duncan, M.D., as chairman, and L. B. Hayman, M.D., as secretary. This Congress will probably be held at the same time as the Congresses of the other divisions of the department of medicine which are assigned to open May 29th. Many topics have been suggested for discussion, especially the influence of climate on phthisis, rheumatism and other diseases.

A Diphtheria Epidemic Caused by Ice. — The Washington newspapers report the singular origin of an outbreak of thirty-two cases of diphtheria, of which fifteen proved fatal, that occurred in a small locality in that city. The body of a child that had died of diphtheria was packed in ice for two days, and when the body was transferred to the coffin the undertaker threw the ice on the ground outside his shop. Three children were seen eating the ice, and in eight days they presented acute symptoms of diphtheria and died in a few hours. In all, thirty-two cases of the disease were ascribed to the deposit of the ice on the ground.

Medical Congress in Cuba.— The second Cuban medical congress will meet in Havana on October 27th, which is the four hundredth aniversary of the discovery of the island by Columbus. The diseases which are common in Cuba, and the sanitary condition of the city of Havana, will be the principal subjects for discussion.

Eleventh International Congress. — As a recent notice in this Journal has informed our readers, the Eleventh International Congress will meet in Rome, Italy, from September 24 to October 1, 1893. By an official letter dated August 22, 1892, and signed by Prof. Guido Baccelli, President, and Prof. E. Maragliano, Secretary General, Dr. A. Jacobi of New York, has been directed to form an American Sub-Committee. Its membership is not yet complete, but on it are already found beside that of the Chairman, the names of Drs. Wm. Osler of Baltimore, S. C. Busey of Washington, N. S. Davis of Chicago, Charles A. L. Reed of Cincinnati, Wm. Pepper of Philadelphia, F. Peyre Porcher of Charleston, James Stewart of Montreal, and Alexander J. C. Skene of Brooklyn, N. Y. In the interest of facilitating the trip to Italy, and reducing the expense, arrangements will be made with the steamship companies. According to a communication from the Central Committee — contained in a letter of the Secretary General's dated September 14th — the North German Lloyd proposes to reduce the fare to Genoa by twenty per cent., and that of the return trip by ten per cent. It is expected that still more favorable terms will be secured.

The Importance of the Spleen in the Production of Immunity. — Pizzoni and Pattani in their experiments with virus of tetanus upon guinea-pigs, have found that those in which the spleen had been extirpated were incapable of being rendered immune, this capacity being permanent. It would thus appear that no other organ is able to carry on the particular function of the spleen, upon which the immunity depends.

Cremation. — The question of burning dead bodies is now being agitated in England. Sir Spencer Wells and Sir Henry Thomson are both in favor of it. They propose the erection in every port of a Crematory where the bodies with their clothes and bedding could be cremated. They assume that the cholera bacillus maintains its viability for many days in the ground.

The Birth-Rate in Well-to-do Communities. — Attention has been called to the fact that in the well-to-do districts of the West End of London the birth-rate is remarkably low. Whereas for England and Wales the rate is 30 per thousand in the year, and for London as a whole 29, in some of the West End districts it is 14, or just equal to the death-rate. This is due partly to the smaller size of the families and partly to the fact that many move into the district at an advanced age after success in trade or profession, and also to the large number of unmarried servants living there.

Midwifery in India. — In a recent Government report Dr. Lawrie gives some interesting particulars of the practice of midwifery and of diseases of women and children in the city of Hyderabad, where it is almost entirely in the hands of uneducated dhais. The treatment these women adopt in cases of hand presentation is either to take a wisp of dry grass and set fire to it and burn the child's hand in order to make it withdraw it into the uterus, or else to wrench it off. If post-partum hæmorrhage occurs, the patient is made to stand up against a wall and an old woman butts at her abdomen with her head, like a goat. The city dhais (midwives) have a superstition that breech presentations foreshadow evil to themselves, and hence the child is always born dead from asphyxia in breech cases. The manner in which counter-irritants are employed in the shape of the actual cautery and powerful corrosives is truly shocking. As a result, hundreds of young women are mutilated and die, or are rendered unfit for further existence as married women, by sloughing and faulty cicatrization of the external organs of generation.

NEW ENGLAND.

Scarlet Fever in Waltham. — A large number of cases of scarlet fever have occurred in Waltham recently. The schools have been closed, and attempts made at more thorough isolation of cases.

An Epidemic of Diphtheria has appeared in East Douglas, Mass. The schools have been closed, and energetic measures taken to prevent the spread of the disease, which is said to be of a malignant type.

Enforcing the "Sweat-Shop" Law. — Since the law was passed in Massachusetts providing for licensing tenement-house clothing workers, 650 temporary licenses have been issued. Of these places 350 have been inspected, 200 have been approved and 90 refused licenses, the others have been allowed time in which to improve their premises. The district police have taken up the matter energetically and are doing their best to make these places as clean as possible. In order to be thorough, a larger force of inspectors is required.

NEW YORK.

American Electro-Therapeutic Association. — The second annual meeting was held at the Academy of Medicine Building on October 4th, 5th, and 6th; and at the opening session, the President, Dr. Wm. J. Morton, of New York, delivered his address. On the evening of the first day there was a social reunion at the Electric Club, and on the following evening a reception was tendered the Association by the resident members, while Dr. J. Monat Blair gave an illustrated lecture on the application of the phonograph and micro-graphophone to medical uses. On the afternoon of the third day of the meeting an excursion was made to the Edison laboratory at Llewellen, New Jersey.

A New Bacteriological Institute. — On October 4th the corner-stone of the New York Bacteriological Institute, which is take the place of the Pasteur Institute, was laid by Mayor Grant at 97th Street and Central Park, West. An address was made by Dr. Paul Gibier, Director of the Institute, and a brief reply given by the Mayor.

The Health of the City continues in a very satisfactory condition. During the week ending October 1st the total number of deaths recorded was 691, which is the lowest weekly mortality during the present year. This is 59 less than the average for the corresponding week in the past five years, and represents an annual death-rate of only 19.56 per thousand of the estimated population.

Cholera. — On the 1st of October the Board of Health announced that, no case of cholera having occurred in the city since September 19th, the bulletins in regard to that disease would be discontinued. It was subsequently learned, however, from the report of the bacteriologists, that a man who died in West 29th Street on September 28th had been the subject of true Asiatic cholera. Every precaution was taken to prevent a spread of the disease, and since then no other cases have appeared.

Miscellany.

BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1892, are as follows:

The number of new patients treated at the Central Office is 27,546, classified as follows:

Medical Department.—Men, 3,373; women, 5,346; children, 3,545; total, 12,264.

Surgical Department.—Men, 2,438; women, 1,339; children, 914; total, 4,691.

Skin Department.—Men, 781; women, 508; children, 316; total, 1,605.

Department for Diseases of the Nervous System.—Men, 781; women, 600; children, 106; total, 1,487.

Department for Diseases of the Throat and Nose.—Men, 964; women, 909; children, 572; total, 2,445.

Department for Diseases of Women.—Women, 970.

Department for Diseases of the Eye.—Men, 273; women, 336; children, 247; total, 856.

Department for Diseases of the Ear.—Men, 219; women, 236; children, 261; total, 716.

Department for Diseases of the Genito-Urinary System.—Men, 1,327; women, 30; children, 7; total, 1,364.

Department for Diseases of the Rectum.—Men, 106; women, 55; children, 5; total, 166.

Orthopedic Department.—Men, 37; women, 61; children, 53; total, 151.

Dental Department.—Men, 223; women, 210; children, 398; total, 831.

The number of visits made by patients, old and new, at the Central Office, is 63,063, classified as follows: Medical, 21,807; surgical, 41,256; total, 63,063. The number of patients treated in the Districts is 18,592 (including 235 cases of midwifery), classified as follows: Men, 3,374; women, 7,257; children, 7,961; total, 18,592. The results of treatment in the Districts are as follows:

Discharged, cured or relieved	17,280
Removed to hospitals	977
Died	343
Remaining under treatment	75
	18,675
Under treatment at last annual report	83
	18,592
The number of patients treated at the Central Office and in the Districts is	46,138
The number of cases of midwifery attended during the year	235
The number attended since July, 1856	6,839
The whole number of patients since October, 1796	1,161,247
The whole number of patients since July, 1856	1,042,444
Average daily attendance at the Central Office	198
Largest number present any one day, April 18th	314
Smallest number present any one day, March 3d	87
Number of recipes put up at the Central Office during the year	67,082
Number of house recipes	52,854
Number of district recipes	14,228
Largest number put up in one day, January 4th	362
Smallest number put up in one day, October 23d	72
Number of paid recipes	60,523
Number of free recipes	6,559
Number of paid dental patients	767
Number of free dental patients	64

The list of medical officers for the ensuing year is as follows:

Surgeons: Drs. Edward O. Otis, Frederic M. Briggs, Arthur K. Stone, Augustus Thorndike.

Physicians: Drs. Robert Disbrow, John Dixwell, Thomas M. Rotch, Harold Williams, Edward M. Buckingham, Robert B. Dixon, Russell Sturgis, Thomas F. Sherman, James S. Howe, William F. Temple, Henry Jackson, Robert W. Greenleaf, William S. Boardman, Samuel Breck, George A. Sargent, Edward L. Twombly, George H. Washburn, William E. Fay.

Department for Diseases of the Skin.—Drs. Francis B. Greenough, Abner Post.

Department for Diseases of the Nervous System.—Drs. William N. Bullard, Chauncey R. Burr. Assistant, Dr. Frederic Coggeshall.

Department for Diseases of the Throat and Nose.—Drs. John W. Farlow, J. Payson Clark, Algernon Coolidge, Jr., Frederic C. Cobb.

Department for Diseases of Women.—Drs. Francis H. Davenport, John B. Swift, Rufus A. Kingman, George Haven.

Department for Diseases of the Eye.—Drs. William D. Hall, Edwin E. Jack.

Department for Diseases of the Ear.—Drs. William S. Bryant, Wallace Preble, Ernest E. Doble.

Department for Diseases of the Genito-Urinary System.—Drs. George H. Tilden, Hayward W. Cushing, Gardner W. Allen, Paul Thorndike.

Department for Diseases of the Rectum.—Drs. Walter J. Otis, William D. Hodges.

Obstetric Department.—Dr. Charles M. Green. Assistants, Drs. Edward Reynolds, Charles W. Townsend.

Orthopedic Department.—Dr. Rufus E. Darrah.

Pathologist.—Dr. Edward M. Greene.

Dentist.—Dr. Alexander H. Fisher.

District Physicians.—Drs. Horace E. Bragdon, Augustus S. Knight, George A. Craigin, Joseph Hicks, Arthur H. Wentworth, John J. Thomas, William E. Chenery, William H. Prescott, Frank S. Whittemore, Eugene M. Holden, Charles D. Fillebrown.

Apothecary.—Frederic H. Dudley. Assistant Apothecary, Joseph T. Lang.

Wm. H. H. Hastings, M.D., *Supt.*

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REMEDIES FOR DEFECTIVE COLOR-VISION.

A committee of the Royal Society appointed to consider the question of testing for defective color-vision has made a report recommending that a schedule be made of employments in the mercantile marine and on railways, the filling of which by persons whose vision is defective, or who are ignorant of the names of colors, would involve danger to life and property; that the testing should be compulsory, and intrusted to examiners certificated by the central authority; that Holmgren's test be used for color-vision, and that after passing it the candidate be required to name without hesitation the colors that are employed as signals or lights, and also white light; that rejected candidates have a right of appeal; that candidates rejected for naming colors wrongly who are proved to possess normal color-vision be allowed to be re-examined after a proper interval of time; that certificates of the qualifications of candidates be given, and schedules of the results of examinations be sent up every year; that persons filling the scheduled employments be examined every third year for form-vision; that

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[1] Popular Science Monthly, October.

the tests, etc., be inspected periodically; that signal colors of ships and railways be as far as possible uniform; and that witnesses in judicial inquiries arising out of these matters be themselves tested for color and form vision.

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THERAPEUTIC NOTES.

Benzo-Naphthol as an Intestinal Antiseptic in Infants.[1] — Dr. Moncorvo has given benzo-naphthol to children of all ages, for the purpose of inhibiting intestinal fermentation, especially in diarrhœas of malarial origin. The results were very favorable, the drug was exceedingly well tolerated. The benzoic acid resulting from the decomposition of the remedy is eliminated by the kidneys in the form of hippuric acid, and consequently acts as a diuretic.

The dose given varied from 25 to 150 centigrammes (4 to 22 grains), according to the age of the child and the gravity of the case.

In adults, Moncorvo has used benzo-naphthol for a long time in cases of yellow fever with the best of results. In several rebellious cases of malarial diarrhœa, its combination with an equal quantity of bismuth salicylate gave excellent results.

Camphoid, a Substitute for Collodion.[2] — William Martindale suggests this name for a preparation consisting of one part of pyroxylin to forty of a solution composed of equal parts of camphor and dilute alcohol. In this solution iodoform is soluble in the proportion of one in ten. Applied to the skin, this preparation dries in a few minutes, and forms an elastic, opaque film, which does not wash off. The excess of camphor seems to volatilize, and as it disguises the odor of the iodoform, its solution forms a useful vehicle for applying this drug. Pyroxylin dissolves readily in the simple solution of camphor, and this forms a cleanly basis for the application of many medicaments to the skin, such as carbolic acid, salicylic acid, resorcin, iodine, chrysarobin, and ichthyol.

Atropine in Hyperacidity of the Stomach.[3] — Dr. Voinovitch, on the basis of the experiments of Drs. Netschaeff and Popoff, administered sulphate of atropine in a case of gastric hypersecretion. The dose used was three-quarters of a milligramme (about one hundredth of a gramme), three times a day by the mouth; after the third day pain had stopped and vomiting ceased. An examination of the gastric juice after the tenth day showed it to be almost normal.

Treatment of Phthisis with Iodine. — De Renzi,[4] after experiments on rabbits, has used iodine in the treatment of tuberculosis. He at first gave it subcutaneously, but this not being well borne, he gave it by the stomach. A total of 500 grains were given in most of the cases. In a few, symptoms of iodism arose, but disappeared readily on suspending the treatment. The solution may be made as follows:

℞	Iodine	1 part.
	Iodide potassium	3 parts.
	Chloride sodium	6 parts.
	Water	1000 parts. M.

The author believes that the result of this treatment will compare favorably with those of any other at present tried.

Correspondence.

INSTRUCTION IN THE DIAGNOSIS OF ASIATIC CHOLERA.

Boston, October 11, 1892.

Mr. Editor: — By a vote of the Faculty of the Harvard University Medical School, I am permitted to request you to make the following announcement:

During the fall and winter practical courses will be given to practitioners of medicine in the bacteriological diagnosis of Asiatic cholera. These courses will be in the Bacteriological Laboratory, will last daily for two weeks, and will be limited to six members for each course.

Fee for the course, twenty dollars. Microscopes will be furnished to those not owning them for a small fee; other material free.

Applications should be made to Dr. C. P. Worcester, Secretary, or to the undersigned, at the School.

Very truly yours,
Harold C. Ernst, M.D.

RECORD OF MORTALITY
For the Week ending Saturday, October 1, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	691	275	17.64	11.62	8.82	3.36	1.82
Chicago . . .	1,250,000	433	174	19.09	8.97	2.99	6.90	6.90
Philadelphia .	1,092,168	413	168	23.76	10 32	7.20	12.24	2.64
Brooklyn . .	955,333	365	173	19.44	10.26	7.56	4.32	1.62
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	188	66	13.58	18.55	14.31	5.83	7.95
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	103	39	27.36	5.82	13.58	9.70	2.91
Cleveland . .	281,353	75	35	33.00	5.32	11.97	11.97	5.32
Pittsburg . .	255,000	—	—	—	—	—	—	—
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	132	45	19.00	4 56	5.32	3.80	7.60
Nashville . .	87,754	23	10	17.40	30.45	13.05	—	—
Charleston . .	56,048	36	12	8.34	13.90	5.56	—	—
Portland . . .	40,000	14	2	7.14	—	—	—	7.14
Worcester . .	92,313	30	6	6.66	10.00	—	3.33	3.33
Lowell . . .	82,455	28	13	28.56	7.14	17.85	7.14	3.57
Fall River . .	82,128	—	—	—	—	—	—	—
Cambridge . .	74,644	30	9	16.66	23.33	10.00	—	6.66
Lynn	60,809	12	2	16.66	8.33	—	8.33	—
Springfield . .	47,052	13	3	30.76	—	15.38	—	15.38
Lawrence . .	45,910	—	—	—	—	—	—	—
New Bedford .	44,947	17	4	23.52	11.76	11.76	—	11.76
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	4	1	25.00	—	—	—	25.00
Salem	31,495	10	1	40.00	—	10.00	10.00	20.00
Haverhill . .	30,065	9	5	22.22	44.44	22.22	—	—
Chelsea . . .	29,479	12	7	8.33	16.66	8.33	—	—
Malden . . .	27,252	5	1	—	—	—	—	—
Newton . . .	26,498	—	—	—	—	—	—	—
Taunton . . .	26,464	10	—	30.00	20.00	—	10.00	20.00
Gloucester . .	26,008	10	3	20.00	20.00	10.00	—	—
Fitchburg . .	25,444	8	5	—	—	—	—	—
Waltham . .	20,942	4	1	—	25.00	—	—	—
Quincy . . .	18,669	—	—	—	—	—	—	—
Pittsfield . .	18,294	3	3	—	33.33	—	—	—
Northampton .	15,084	1	0	—	—	—	—	—
Everett . . .	14,745	1	0	—	—	—	—	—
Newburyport .	14,031	—	—	—	—	—	—	—
Amesbury . .	13,561	1	0	—	—	—	—	—

Deaths reported 2,776: under five years of age 1,104; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 555, consumption 297, acute lung diseases 271, diarrhœal diseases 213, diphtheria and croup 166, typhoid fever 93, scarlet fever 25, whooping-cough 20, cerebro-spinal meningitis 12, malarial fever 10, measles 9, erysipelas 6.

From scarlet fever New York 8, Chicago and Pittsburgh 4 each, Philadelphia, Brooklyn, Boston and Cleveland 2 each. From whooping-cough Brooklyn 9, New York and Philadelphia 4 each, Chicago 2, Washington 1. From cerebro-spinal meningitis New York and Brooklyn 3 each, Chicago and Washington 2 each, Lynn and Gloucester 1 each. From malarial fever Brooklyn 4, New York 2, Philadelphia, Cleveland, Pittsburgh, Nashville and Charleston 1 each. From measles New York 7,

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[1] The Satellite, etc., October, 1892.
[2] Pharmaceutical Journal and Transactions, April 9, 1892.
[3] Bullet. de Thérapeut., 1892, 471.
[4] Riv. clin. E. Terap., No. 6.

Brooklyn 2. From erysipelas New York, Chicago and Brooklyn 2 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending September 24th, the death-rate was 17.2. Deaths reported 3,361: acute diseases of the respiratory organs (London) 152, diarrhœa 344, diphtheria 58, fever 56, scarlet fever 53, whooping-cough 51, measles 43.

The death-rates ranged from 8.4 in Croydon to 29.2 in Preston; Birmingham 19.5, Bradford 20.9, Hull 21.9, Leeds 20.1, Leicester 15.6, Liverpool 18.9, London 15.1, Manchester 19.9, Newcastle-on-Tyne 16.0, Nottingham 17.9, Sheffield 20.4, Sunderland 20.4, Swansea 17.5, West Ham 16.3, Wolverhampton 12.5.

METEOROLOGICAL RECORD,

For the week ending October 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...25	29.96	66	71	62	90	100	95	W.	E.	4	5	O.	F.	.01
M..26	29.57	62	69	54	90	56	73	S.	W.	16	28	O.	C.	·48
T..27	29.79	55	60	50	52	51	52	W.	S W.	18	18	F.	C.	
W .28	29.98	64	75	53	60	62	61	W.	N.W.	20	6	C.	C.	
T ..29	30.34	56	65	48	59	37	48	N.W.	N.W.	8	8	C.	O.	
F ..30	30.21	62	75	48	54	62	58	W.	S.W.	13	17	F.	O.	
S..31	30.05	58	67	49	66	46	56	W.	S.W.	15	9	F.	C.	
☞	29.98	60	69	52	67	59	61			13	12			.07

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 1, 1892, TO OCTOBER 7, 1892.

The leave of absence granted Major Alfred A. Woodhull, surgeon, U. S. A., is extended ten days.

Captain Junius L. Powell, assistant surgeon, U. S. A., is relieved from duty at Fort Randall, South Dakota, to take effect upon the final abandonment of that post, and will then repair to Fort Monroe, Virginia, and report in person to the commanding officer of that post for duty.

Lieut.-Col. Francis L. Town, deputy surgeon-general, U. S. A., is relieved from duty at the Presidio of San Francisco, Cal., and will report in person to the commanding officer, Fort Porter, N. Y., for duty at that station.

Captain Alonzo R. Chapin, assistant surgeon, U. S. A., is relieved from duty at Fort Yates, North Dakota, and will report in person to the commanding officer, Fort Hancock, Texas, for duty at that station.

Captain Eugene L. Swift, assistant surgeon, U. S. A., is relieved from duty at Fort Grant, Arizona Territory, and will report in person to the commanding officer, Fort Yates, North Dakota, for duty at that station.

Major Egon A Kœrper, surgeon, U. S. A., is relieved from duty at Fort Walla Walla, Washington, and will report in person to the commanding officer, Willets Point, N. Y, for duty at that station, relieving Major Clarence Ewen, surgeon. Major Ewen on being relieved by Major Kœrper, will report in person to the commanding officer, Fort Walla Walla, Washington, for duty at that station.

Major Robert H. White, surgeon, U. S. A., granted leave of absence for two months, to take effect during October, 1892.

Captain Edgar A. Mearns, assistant surgeon, U. S. A., is relieved from further duty with the commission appointed for the location and marking of the boundary between Mexico and the United States, and will without delay proceed from El Paso, Texas, to Fort Clark, Texas, and report in person for duty to the commanding officer of that post.

Major Robert M. O'Reilly, surgeon, U. S. A., will be relieved from duty at Fort Logan, Col., and will report for duty as attending surgeon, in this city on December 15, 1892.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING OCTOBER 8, 1892.

Eugene P. Stone, passed assistant surgeon, detached from the "Pinta," and granted two months' leave.

Louis W. Atlee, passed assistant surgeon, detached from the "Independence" and ordered to the "Pinta."

F. N. Ogden, passed assistant surgeon, detached from duty in connection with Inter-Continental Railway Commission and to the "Independence."

William Martin, surgeon, detached from the "Thetis."

Charles W. Rush, passed assistant surgeon, detached from the Navy Yard, New York, and granted six months' sick leave.

R. M. Kennedy, assistant surgeon, from the Training-ship "Richmond" and to the C. S. S. "Bache."

T. C. Walton, medical inspector, ordered to the Naval Academy.

B. H. Kidder, medical director, from the Naval Academy and to the Naval Station at Port Royal, S. C.

W. F. Arnold, passed assistant surgeon, from the Naval Station at Port Royal, and to the U. S. S. "Richmond."

SOCIETY NOTICES.

Tri-State Medical Society. — The fourth annual meeting of the Tri-State Medical Society of Georgia, Alabama and Tennessee, will be held in Chattanooga, October 25th, 26th and 27th.
Dr. Frank Trester Smith, *Secretary*, Chattanooga, Tenn.

Massachusetts Medical Society, Suffolk District. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, October 19th, at 7.45 o'clock.

Business: Election of Chairman for ensuing year. Report of the Committee appointed at the last meeting to consider the question of Cholera.

Dr. G. L. Walton will report "A Case of Vertebral Abscess, resulting from Pneumonia: Trephining, Evacuation, Death." Drs. Conant, Richardson, Warren, Porter, Cabot, Bradford, Putnam, Bullard, Knight and Prince are expected to take part in the discussion.

Albert N. Blodgett, M.D., *Sec'y*, 390 Boylston St.

APPOINTMENTS.

The following changes have occurred at the Carney Hospital: Dr. A. T. Cabot, resigned from the consulting board; Dr. H. L. Burrell, resigned as visiting surgeon; Dr. F. I. Proctor, resigned as assistant in ophthalmology; Dr. W. E. Fay, resigned as registrar. Dr. H. L. Burrell, appointed member of the consulting board; Dr. H. W. Cushing, appointed visiting surgeon; Dr. H. W. Kilburn, appointed assistant in ophthalmology.

RECENT DEATH.

Henry Cowles, M.D., M.M.S.S., died in Saxonville, October 8, 1892, aged seventy-seven years.

BOOKS AND PAMPHLETS RECEIVED.

The Necessity and Best Methods of Regulating the Practice of Medicine. By Perry H. Millard, M.D. Reprint. 1892.

Transactions of the Association of American Physicians, Seventh Session, held at Washington, D. C., May 24, 25, 26, 1892. Philadelphia. 1892.

Tuberculin and the Living Cell. An Inquiry as to How the One Aids the Other in the Fight against Tuberculosis. By Charles Denison, A.M., M.D., Denver, Col. Reprint. 1892.

Epitome of Mental Diseases, with the Present Methods of Certification of the Insane, etc. By James Shaw, M.D., master of surgery, member of the Medico-Psycological Association, etc. New York: E. B. Treat. 1892.

Dictionary of Terms used in Medicine and the Collateral Sciences. By the late Richard D. Hoblyn, M.A. Twelfth edition, with revisions and additions by John A. P. Price, M.D., assistant surgeon to the Royal Berkshire Hospital, etc. London: Whittaker & Co. 1892.

Gynecological Technique. A Brief Summary of the Principles Involved, as well as the Technique of the Gynecological Operations Performed in the Johns Hopkins Hospital, the Significance of the Operation and its Technical Surroundings to Gynecological Practice. By Howard A. Kelley, M.D. Reprint. 1892.

Original Articles.

EYE-PARALYSES.*

BY JOHN AMORY JEFFRIES, M.D.

[This paper, which Dr. Jeffries had nearly finished at the time of his death, has been put in my hands to prepare for publication. Although I knew something of his intentions in regard to it, a study of the paper itself and of the mass of material which he had collected on the subject has convinced me of the difficulty of completing the task as he would have done it. With the exception of a few verbal changes, indicated in brackets, I have done little except to prepare a bibliography from the notes which Dr. Jeffries left, and to indicate the references to illustrative cases. Not having the original articles at hand and depending almost wholly upon these notes I fear that the classification of the cases, which I have tried to make, is not always correct, and that it might not agree with Dr. Jeffries' greater knowledge. I have added Bleuler's diagram, which Dr. Jeffries had copied, probably with the intention of inserting it. — P. C. K.]

Probably every practitioner has at times been in doubt as to the nature of a case of eye-paralysis. The whole question is involved in practical difficulties. A patient complains of double vision; and it is evident, unless the case be one of monocular diplopia, that at least one of the twelve extrinsic muscles of the eyes is paretic. In theory, the changes in the relative position of the images in different parts of the visual field should lead to an accurate diagnosis; in practice, owing to the complex results produced when a number of muscles are affected, and to the stupidity of patients, the result is often far from satisfactory. Even when the eye distinctly lags in following an object, it may be difficult to determine the condition of the oblique muscles. When, as sometimes happens, the patient fixes with the paretic eye, there is danger that the trouble may be assigned to the wrong eye. The paretic eye is used for fixation when it has the best sight or when it is specially trained, as in the case of the right eye in surveyors. It is therefore desirable to make a systematic study of every case of eye-paralysis with all the methods at our command.

For this purpose it is necessary to have a pair of spectacles carrying plane glasses, one colorless, the other red, so that the color of the image may indicate to which eye it belongs. After assuring one's self that the diplopia is not of monocular origin, by having the patient look first with one eye and then with the other, the whole field should be tested with some bright object, as a candle-light, and the result noted in a chart-like manner. The relative position of the images, their parallelism or obliquity, the distance between them, and which is red, should be determined for at least three points directly in front of the patient, and for two tiers on each side representing half-way and full lateral vision. When, as is often the case, vision is impaired as well as the motions of the eyeball, care must be taken lest monocular vision due to lack of vision in the peripheral portion of one retina be mistaken for proof of parallel vision. After this, near vision should be tested in the same way.

The double images had better be studied first, since they require close attention on the part of the patient and error is not easily recognized by the examiner.

It must be borne in mind that lack of double vision does not prove the absence of paralysis. One of the images may be disregarded, lost, or there may be but one, as in cases of conjugate paralysis, where there is constant parallelism of vision even though motion to one side is absolutely lost.

This is hardly the place to go into the details of the position of the images. They have been so fully worked out and figured in the various works on the eye and nervous system as to be familiar to all. Those interested in the difficult subject of double paralysis of the superior obliques will find the subject elaborated in a recent article by Pflüger.[114] This paralysis is probably best recognized by the perimetic method.

Next the motions of the eyes should be observed when following some object, as a finger, a piece of paper, or the like. With practice very slight deviations from the normal can be recognized in this way. Not only the parallelism of vision, but the range of motion should be noted; also the position of the lid, and whether it follows the pupil in looking down or not. Very good motor charts can be made by Landolt's method in cases where the defect of motion is considerable. This consists simply in substituting a card with letters on it for the plain moving card of a perimeter, and after having instructed the patient to follow it as long as he can and still read the letters, slowly move the card from the centre to the periphery. The point where distinct vision ceases should be noted on any of the charts used in plotting out the field of vision. A muscular defect shows itself as a limitation in that part of the field towards which the weak muscle should have moved the eye. The method is based on the fact that the letters cannot be read unless their images fall on or very near the visual axis of the eye. Those who have not used this method, might think that it was entirely dependent on the promptness and accuracy of the patient's replies. This is not the case, as the reflections from the cornea render it very easy for the physician to recognize the faintest motion of the eye. Of course, this method fails entirely in those relatively rare cases where the paralysis is dependent upon binocular vision.

Several other factors remain to be determined which are more physiological in their nature; thus, it should be noted if there is any difference in the motion of the eye when its mate is covered. A quite marked or even complete paralysis may vanish at once if the other eye be covered, while in others the paralysis is only apparent after the other eye is closed. Secondary deviation of the sound eye should be noted by placing a screen between the eye to be tested and the object gazed upon, and then removing it; if the deviation exists, the eye will be seen to fly back a few degrees as the object comes into view. It is due to the correlated muscles of the sound eye rotating the eye beyond the line of parallel vision, from sympathy in the effort required to fix the object with the paretic one. Hence, the direction of the motion is that in which the other eye is weak.

In making this test the screen should be held sufficiently near the eye to prevent fixation being performed by it and yet in such a way the eye can be seen by the observer. The readjustment of vision is at times very quick, and the process may be finished before it can be noted.

False projection, if well developed, is also a factor of considerable value. This — the failure properly to locate objects in space — is held to be due to our judging of the relation of objects to ourselves not primarily by the position of their images on our retinæ, but by the state of contraction of the extrinsic muscles of the eye. We first determine the direction of the objects falling in the line of distinct vision by the eye muscles and then locate the rest of the field by means of the relation of the peripheral images to the centre of the field. As a result of this, if a small object — say a pin stuck into a table — is fixed with the paretic eye and the patient be instructed to pick it up quickly the hand will miss the object and go too far in the direction towards which the motion of the eye is weak. Of course, in making this test, the other eye should be closed, the motion made rapidly, and the pin placed so as to involve the use of the affected muscles. When the paretic eye is closed, no false projection occurs, and the hand goes straight to the object. When both eyes are open, false projection in the opposite direction may result from overaction of the muscles of the healthy eye. When both eyes are affected, the last two tests often give most perplexing results.

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* Read before the Boston Medico-Psychological Society, March 17, 1892.

Besides the above, the reaction of the pupil to light, near vision, and sensations from the skin should be noted as well as the action of the ciliary muscles. At the time of, or shortly after, the occurrence of a paralysis, the eye is apt to deviate in the opposite direction, owing to the contraction of the antagonists, the same as in other parts of the body. But, in spite of this, the eye is often able to move in the direction of the paralyzed muscle as far as the mid-point.

The result of the examinations gives us a knowledge of the muscles paralyzed, the degree of paralysis, and the conditions under which it occurs. These facts have still to be correlated with what we know of the physiology of the eye, both normal and pathological, as well as with the results of clinical observation and the post-mortem examination before a full diagnosis can be made, and the physician be truly said to understand the case. A full diagnosis calls for a determination not only of the parts paralyzed, but also of the portions of the nervous system affected, and the nature of the affecting process. Fortunately for the patient, the second part of the diagnosis has little to do with treatment; only in surgical cases is an exact knowledge of the seat of disease called for by therapy.

The physiology of the muscles of the eye is by no means a simple problem; not only do we have to explain how the muscles bring the eyes into the proper position, but also to trace out the track through the nervous system by which this is affected. In the normal inactive state, where vision may be said to be in abeyance, the eyes rest in a mid-position and with nearly parallel visual axes. I say nearly, because on several occasions I have thought that the eye did not correspond by a few degrees, the same as is common in the blind. Now, if an object to one side of the axis attract attention, the eyes are at once turned so that their axes are brought to bear upon it. This is done by the equal and synchronous action of the internal rectus of one eye and the external rectus of the other, and if the object is not on a level with the eyes, by the action of the muscles turning the eye up or down (superior rectus and inferior oblique or the reverse). This process, lateral conjugate deviation, has attracted much attention, and yet we do not know how it is brought about. Starting with the experiments of Mott and Schaefer[95, 96, 130] and others, we know that this motion is produced by stimulation of the middle portion of the frontal lobe just in front of the head area, the eyes turning to the opposite side. Again, stimulation in the visual field in the occipital lobe causes the same motion, but in an opposite direction — that is, the eyes turn to the side stimulated. Lastly, if the seat in the occipital region where the eyes are turned to one side and that in the frontal region where the eyes are turned to the other are stimulated synchronously with the same current, the motion induced by the frontal area prevails over that of the occipital.

Over and above this, conjugate motion is liable to be induced by stimulation almost anywhere in the cortex. Such conjugate paralysis or deviation has been well recognized since the thesis of Prevost[118] and is one of the most constant early symptoms following almost any sudden gross lesion of the cerebrum. During the comatose period, if there be any, the eyes will be found turned as if looking to the sound side. When consciousness returns, the eyes may still continue in their former position, or assume the normal one. If still turned to one side, a true paralysis may exist, or the position may simply be one of selection, the eyes being able to follow an object well to the opposite side. In either case the trouble usually vanishes in the course of a few hours or weeks, and the eyes return to a normal state. Since in pontine trouble the paralysis is crossed with that of the limbs, the symptom is at times of value in locating the lesion.

In a small proportion of the cases the deviation remains constant, as a permanent paralysis, indicating that the motor region or fibres have been actually injured and not simply disturbed in their functions. Efforts have been made to use this symptom for purposes of localization, but so far with poor success. Thus Wernicke[164] holds that such a paralysis coming on with a shock without loss of consciousness points to disease of the lower temporal region of the opposite side, and cites a few cases beside his own. They are, however, far from satisfactory.

There is a small number of cases where disease of the frontal convolutions has been accompanied by disturbance or paralysis of the eyes of such nature as to suggest some close connection with the lesion, but they are far too few and vague to justify any conclusions, though seeming to tally well with experiments on animals.

As we do not know whence the motions of the eyes spring, it goes without saying that we do not know the course of the fibres conveying the impulse to the nuclei at the base of the brain. They probably pass down in the anterior part of the internal capsule and thence, via the pyramidal tracts, to near the nuclei of the third nerve where they cross. Perlia[111] describes a set of fibres which, coming from the crus, turn and pass back along the râphe and then enter the nuclei from their free surface; these seem to be best explained as being the lower end of the cerebral fibres. The fibres to the sixth nuclei also probably cross somewhere in the same region, since in pontine trouble paralysis of the sixth nerve is always on the same side as the lesion. The sixth nucleus is placed under the eminentia teres in the angle formed by the knee of the facial nerve. Its root fibres pass down and out; the course of its cerebral fibres is not known.

Conjugate deviation in cases of pontine disease is of far more diagnostic value than when springing from disease higher up, and has, since Foville[85] first called attention to the subject, offered material for much discussion and many theories. In 1885 Bleuler[8] collected the cases and made a very material contribution to our knowledge of the subject; recently I have been at some pains to go over the literature and have been able nearly to double the number of cases with autopsy collected by Bleuler. Even a brief citation of these would swell this article far beyond all limits, nor in view of Bleuler's article is it necessary; but as they show several points of importance, a close summary is required. Owing to the internal recti being supplied by the third nerves, while the external recti receive their fibres from the sixth pair, lesions in the pons are liable to split up conjugate motion into its separate elements.

The following different states are found to exist:

(1) Complete paralysis of one external rectus and the crossed internal rectus, so that neither muscle is capable of any motion, the eyes looking forward or to the other side according to the state of the opposite pair of muscles. In these cases the eyes turn readily to the opposite side, up or down, but stop at the mid-line as if transfixed.

(2) Precisely the same state as in the first condition except that the internal rectus acts perfectly for near or convergent vision.

(3) When both eyes are open, the eye with the paralyzed internal rectus will not turn in for objects on the other side of the nose, but will if the other eye be covered.

(4) The internal rectus will not act in conjugate, but will in near vision: the external rectus being normal.

(5) Though devoid of any signs of conjugate paralysis we must consider simple nuclear sixth nerve paralysis as an element of conjugate paralysis.

[Dr. Jeffries told me that he had omitted to speak fully of the cases in this first class, in which the conjugate paralysis was complete. I find in his notes references to eleven cases, which seem to belong here: those of Leyden,[74] Bernhardt,[5] Ballet,[1] Broadbent,[13] Desnos,[20] Meyer,[84] Foville,[38] Garel,[39] Wernicke,[165] Mills,[88] and Webber.[161]]

In all these cases there were destructive lesions which, as far as can be judged from the report, involved either a considerable area in the pons above the nucleus of the sixth nerve or involved the pons immediately below or in front of the sixth nucleus on the paralyzed side.

In the second group of ten cases [Kahler and Pick,[67] Féréol,[82] Vinantiis,[169] Mills,[69] Hofstetter,[61] Grasset,[47] Poubin,[117] Blocq and Guinon,[9] Finny,[87] Graux,[48]] eight showed a lesion just below or at the eminentia teres. It was in most cases small or at least did not effect much tissue in this region. In the other two, those of Mills [89] and Hofstetter,[61] the lesion was a good-sized tumor in the upper quarter of the pons. The symptoms in the first case do not appear to have been in any way peculiar. In Hofstetter's case there was simply a paresis of conjugate motion and no deviation to the opposite side.

I have only found five cases [Bleuler [8] (two), Spitzka,[144] Quioc,[119] Samelsohn,[126]] where it is clearly stated that the eye with the paralyzed internal rectus turned, as in conjugate motion, to the other side when the other eye was covered. The question is how this comes about. To all appearances the suppression of the eye with the paralyzed external rectus restores power in the other, as if its weakness were due to sympathy and not to actual paralysis; but such an explanation not only fails to explain, but stands in marked contrast to peripheral paralysis of the sixth nerve where this action does not occur. There is nothing peculiar in the autopsies; in two there were tumors of moderate size below the sixth nucleus. In Bleuler's [8] two cases the tubercles, though diffuse, especially attacked the sixth nucleus. In Spitzka's [144] the tumor, though extensive, apparently spared the floor of the ventricle along the râphe.

The only way out of the difficulty is to assume that the apparent conjugate motion in monocular vision is in reality a convergent motion substituted in its place. In this case we might expect the covered eye also to turn in and the pupils to contract. If either occurred, it would be fair to hold the point demonstrated. Unfortunately, in none of the cases has either been noted. But there are cases without autopsy, evidently of the same nature, in which this has been found to be the case. Also the obverse is known to occur in paralysis of convergence. If this view be correct, this group is really indentical with the preceding.

There are three cases which apparently belong to the fourth group. Köchlin [71] reports the case of a boy three years old who after a month's sickness developed a decided deviation of the right eye to the right, and left facial paralysis. The tongue was projected straight; the pupils were equal; the limbs normal and the mind clear; pulse 112. After the paralysis had existed for a month, meningeal symptoms developed, and the child died. At the autopsy the only possible cause found for the paralysis was a tubercle adhering by its base to the floor of the fourth ventricle on the left side at the level of the angle formed by cerebellar peduncles. The region of the third nerve nuclei was normal.

Hunnius [62] reports the case of a man forty years old who had apoplexy. Two days later, up and down motion of the eyes was normal. There was absolute loss of power in the left external rectus, and the two internal recti; convergence and binocular vision could only be executed with difficulty (!); left conjugate motion lost; left eye in mid-position; right turned out forty degrees. Spinal myosis: marked dysarthria; right hemiplegia. Paralysis of right facial, the upper branch being least affected, and right hypoglossus. Head carried turned to the right, but can be turned anywhere. Mind clear, vision good, no nystagmus. By the fifth day the left eye had turned in a little, and the right was not turned so far out, only parallel to left. No other change. Death from pneumonia on the twelfth day. All the cranial nerves normal; softening in the left half of the pons beginning back of its anterior limit and most extensive in the middle. Part of the sixth root apparently implicated, but not the nucleus. Pyramidal tract entirely destroyed.

In the third case reported by Schutz [132] a woman forty-eight years old, after two weeks of weakness, was suddenly seized with paralysis and difficulty of speech, without loss of consciousness. On the fourth day there was diffuse headache, stertorous respiration, rapid pulse, but no œdema. She understood well, but spoke with difficulty. The head was freely moved, there was ptosis on the right, and the left eye did not turn in and down with the right; otherwise, motions of eyes normal. The pupils were small, the left angle of the mouth paretic, the tongue turned to the left. There was slight rigidity of all four limbs, and the right were paralyzed. At autopsy the vessels were found contorted, the ventricles enlarged, the ependyma thickened, and a pair of small cysts the size of peas in the thalami. Also in the upper half of the pons an irregular hæmorrhage, larger than a hazel-nut, in the region of the left seventh nucleus, which spared the lower parts on the left and part of the right half of the pons.

In the first case Gubler[50] has already given the interpretation accepted by me; the second case belongs, as far as loss of left conjugate motion is concerned, to the second group. It is only the internal rectus of the left eye which is here of interest. This acted in convergence and not in conjugate motion. The presumption is that the fibres of the third nerve system, affected in association with the system of the sixth nerve in conjugate motion, were here affected alone; but the autopsies are too vague to aid in plotting out the position of the fibres.

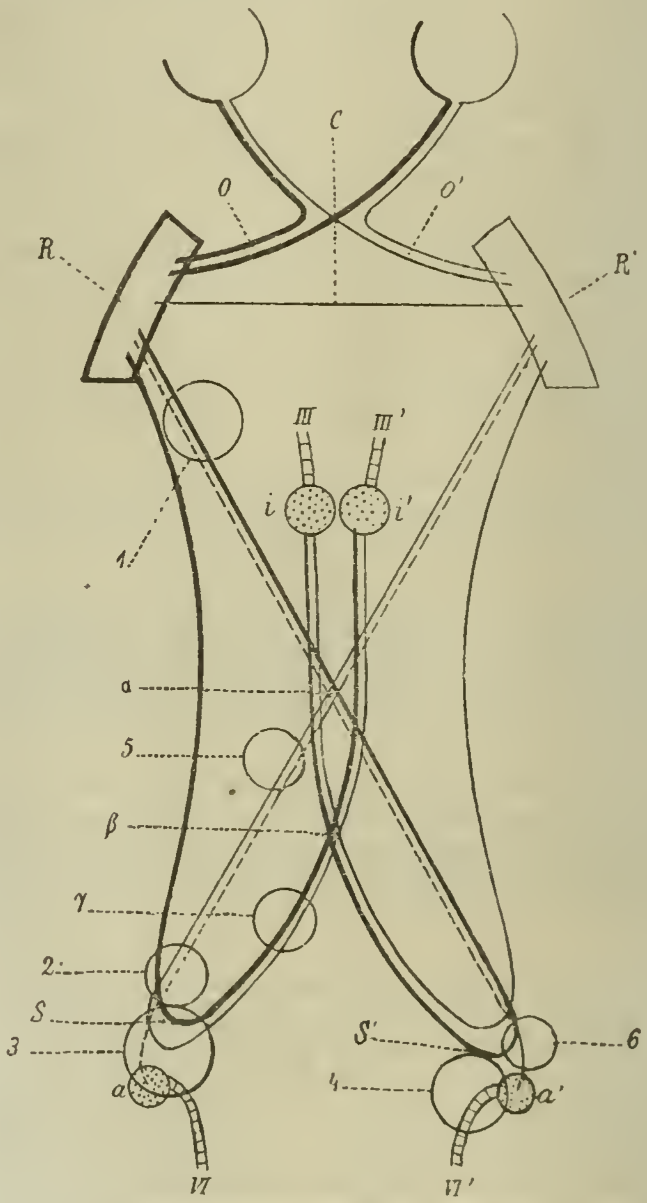
There is one case (Eichhorst[26]) of simple deviation of the eyes and no paralysis due to a lesion in the pons. A man forty-seven years old and a syphilitic, fell in coma after a few hours of moderate pain in the head. On return of consciousness there was right hemiplegia, motor aphasia, relaxation of right side of palate, right facial paralysis, dysphagia. The face and eyes were both turned to the right, but could be moved freely in any direction. There was also a tendency to lie on the right side. The pupils were much contracted and the light reflexes lost. Sensorium free. Death occurred on the eighth day. A clot was found in the anterior part of the basilar artery, and the pons was very soft in the anterior part of the left half. The softening extending nearly to the floor of the fourth ventrical. The cerebellar peduncles were normal. A figure of the basal surface of the pons shows that the softening involved the lower half of the left crus.

To my mind, this is not a case of conjugate paralysis but one of forced rotation to the right, a symptom frequently associated with conjugate paralysis. There was no paralysis of the eyes. All the cranial nerves affected were on the same side as the hemiplegia, and the figure in spite of the text shows the lesions to be in the crus.

Since a central paralysis of the sixth nerve is an essential part of a conjugate paralysis, they are best considered in this connection. Bleuler[8] has classed a case reported by Grasset[47] among those of conjugate paralysis, which to my mind belongs to this group. The head, eyes, and body turned to the right, but the right eye could be turned to the left, while the left could not. Autopsy showed several small sarcomas, two of these being in the left half of the pons. This case seems to be in reality one of conjugate deviation of the eyes to the right and paralysis of the left sixth nerve.

My collection of simple paralyses of the sixth nerve dependent upon injury in the pons offers nothing peculiar in their character. There does not seem to be any point of distinction in action between the different parts of this system. In all, if not from the first, there have been before long other symptoms pointing to the pons. Some cases have begun as conjugate paralysis, and then become simple sixth paralysis; in others the obverse has been the case. In the first group the lesion has been a hæmorrhage at the eminentia teres. I have myself seen the two states alternate from time to time. Though there is no autopsy, a brief summary is given, as the case is of some interest.*

Considerable ingenuity has been spent upon the explanation of the mechanism of conjugate paralysis, and various theories evolved. Most of these involve either the existence of a special nucleus beside the sixth nucleus for conjugate motion or fibres arising from the sixth nucleus and ending somewhere in the line for the internal rectus, either in the nucleus of the third nerve or the nerve itself. No one has pointed out the nucleus barring Gowers,[48] who suggests the olivary body, but as this is healthy in many of the cases it needs no consideration. The various fibre tracts have been pointed out by one or another, but not in such a way as to convince the doubter. None of these hypotheses stand in harmony with the facts.



Explanation of Figure (from Bleuler).

O O′, Optic tracts.
R R′, Cortical centres.
a a′, Abducens nuclei.
i i′, Internal rectus nuclei.
S S′, Point where the internal rectus fibres bend.

1, Lesion producing Prévost's symptom.
2, 3, Lesions producing paralysis of one abducens and the opposite internal rectus for all movements.
4, Lesion producing paralysis of one abducens and weakness of the opposite internal rectus for all movements.
5, Paralysis of left abducens, absolute defect of right internal rectus for associated lateral movements, weakness of both internal recti for convergence.
6, Paralysis of abducens and inactivity of opposite internal rectus for lateral movements only.
7, Total paralysis of opposite internal rectus.

α, Double abducens paralysis.
β, Paralysis of convergence.

Bleuler[8] has advanced a theory which was compatible with the facts up to his time of writing, and holds good for the more recent cases. According to this, the fibres run direct from the cortex to their respective root nuclei, but there are two sets of fibres for the internal rectus, one for conjugate vision and one for near vision; the fibres run down as separate bundles below their nucleus close to the sixth nucleus, and then turn back and cross to their nucleus. There is no physiological objection to this theory, and it coincides well with the results of pathological investigations — indeed, it was built up from the best summary there is on the subject. It does demand the two sets of fibres, something not held to exist in any other part. On the whole I believe it to be the best working theory we have. The only other way of looking at it seems to be that there is but one set of fibres, these going close to the sixth nucleus, but that the impulses descending from above in conjugate and near vision are different, and that the conjugate impulse is more easily interrupted than the near vision impulse; the nearest analogy being the different results obtained by the stimulation of a nerve as shown by Hooper and Bowditch, and the selection of the extensor muscles in most hemiplegias. Any such theory of course ignores the idea that each muscle is represented by certain nerve fibres, cells and areas, which transmit the force after the style of a complex system of bell cords, — an idea which seems in silence to be creeping into neurology, but does not tally well with complete recovery after resection of a nerve. One can hardly imagine that in these cases the cells in the cord establish their old relations with the muscles. If not, and the pull cord theory be correct, utter confusion should result when any motion is attempted.

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* No record of this case is given.

Whatever the theory may be, the practical point remains that all cases of partial conjugate paralysis so far reported have depended upon lesions of the pons.

(To be continued.)

REMARKS ON THE RADICAL TREATMENT OF CERTAIN CASES OF GRAVE CONCEALED ACCIDENTAL HÆMORRHAGE.[1]

BY MALCOLM STORER, M.D., BOSTON.

WHILE a concealed accidental hæmorrhage is one of the rarest of the emergencies that can arise in obstetrical practice, it is, of course, liable to occur in the hands of any one of us at any time, and when present, the condition is so grave and the mortality so appalling, even with the best of treatment, that it may be worth while to give the history of a case showing a method of treatment, which, though apparently somewhat heroic, may prove to be, under certain conditions, the one giving most promise of saving the mother. My excuse for presenting this paper is the novelty of the operation and the possibility of its otherwise not coming before you, occurring as it did, in Dublin.

That a concealed hæmorrhage is rare is undoubted, but the small number of cases reported may be partly due to non-recognition of the condition, and to a natural dislike to publish fatal cases.

The total number of cases that I have been able to collect is 153. In 1860, Braxton Hicks[2] reported 23 cases. To these Goodell[3] added 84. I have been able to add 46.[4] While it is not pretended that this is a complete list of all the cases reported, it is sufficiently so to form an idea of the frequency of the condition and to base a few statistics upon.

Dr. Henry C. Coe, of New York, having given notice that he is engaged upon an elaborate paper on the subject, I shall use these cases only to bring out a few points connected with the results of treatment.

From these cases it appears that of 126 children 94 per cent. are known to have been still-born or to have died shortly after birth; while of 152 mothers 71 died, or 46.7 per cent. This mortality is, in many cases, due to non-recognition of the accident and consequent non-treatment. In by far the greater number of the cases the trouble was not recognized until there had been a large loss of blood. Of 63 cases left to themselves (mostly not recognized), in which if anything was done it was merely to give anodynes and stimulants, 64 per cent. died, while of 79 cases treated only 29 per cent. died. After excluding from the 47 cases in which the woman died undelivered, 16 in which the hæmorrhage was so sudden and severe that the patient was practically dead before anything could be done, 13 at least of the remaining 31 probably could have been saved, if proper treatment had been thought of.

It may be worth while, in view of the rarity of the accident, to run through the ordinary symptoms. A concealed hæmorrhage should be suspected, if, during labor, prostration with pallor, nausea, etc., appears, out of all proportion to any external hæmorrhage that may be present, not forgetting that the respiration may become sighing before the pulse is of necessity affected; or should the membranes remain tense as if the uterus were in a state of tonic spasm; or should labor pains cease or grow weak without other cause; or should they be replaced by a dull, constant ache above the pubes; or should it be noticed that the os is dilating without apparent labor pains. The suspicion would be increased if the patient were a multipara in the latter months of pregnancy, and if there were an antecedent injury or fright. An asymmetrical enlargement of the uterus appearing and increasing under the eye of the physician would give certainty. Some writers claim that it is especially liable to occur in feeble or albuminuric women, but this is very questionable.

In these cases the diagnosis is comparatively easy, and the treatment laid down in the books fairly satisfactory, and not especially difficult to carry out, the woman already being in labor, and the cervix, if undilated, probably soft and yielding.

The treatment advised is as follows (Lusk): (1) Subcutaneous injection of ergot; (2) Dilatation of the os with Barnes' dilators; (3) Rupture of the membranes; and (4) version.

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[1] Read before the Section for Gynæcology and Obstetrics of the Suffolk District Medical Society, February 20, 1892.

[2] Obstetrical Transactions, 1860, xi, 34.

[3] American Journal of Obstetrics, 1869, xi, 281.

[4] 1. Sinclair and Johnston, Practical Midwifery, 358, Case 29. 2. *Ibid.*, Case 28. 3. Goodell, Journal of Obstetrics, 1871, iv, 333. 4. Weatherly, British Medical Journal, 1878, ii, 284. 5. Marcailhou d'Aymerie, Jour. de Med. et de Phar. de l'Algerie, 79, iv. 6. Lusk, Journal of Obstetrics, 1880, 877. 7. Dowden, Medical and Surgical Reporter, xlvii, 697. 8. Atchinson, Nashville Journal of Medicine and Surgery, 1880, N. S., xxv, 6. 9, 10. Gillfillan, Proceedings of Medical Society of King's County, Brooklyn, 1881, vi, iii. 11. Munde, Journal of Obstetrics, 1881, 652. 12, 13. Barnes, E. J., Lancet, 1881, ii, 1038. 14. Macan, Dublin Journal Medical Sciences, 1882, 445. 15. Johnson, *Ibid.* 16. Kidd, *Ibid.*, p. 442. 17. Horne, *Ibid.*, p. 439. 18, 19. Wey, Medical Record, N. Y., 1884, 146. 20. Caldwell, Chicago Medical Journal, 1885, i, 291. 21. Cummins, Daniell's Texas Medical Journal, 1885, 350. 22. Maxwell, *Ibid.*, p. 352. 23. Hadra, *Ibid.* 24. Doering, *Ibid.*, p. 210. 25. Reynolds, Boston Medical and Surgical Journal, 1885, cxiv, 463. 26, 27. Anderson, Pacific Medical and Surgical Journal, 1887, xxx, 217. 28. Park, Journal of American Medical Association, 1887, 124. 29. McDavitt, *Ibid.*, p. 144. 30. Squires, New York Medical Record, 1888, xxxiii, 12. 31. Herman, Obstetrical Journal of Great Britain, 1888, viii, 87. 32-34. Jaggard, Philadelphia Medical News, 1889, 600. 35-38. Kortright, Brooklyn Medical Journal, 1890, iv, 646. 39. Longaker, Annals of Gynæcology and Pædiatry, 1890, iv, 506. 40, 41. Rihl, *Ibid.*, p. 507. 42. Hirst, *Ibid.*, 43, 44. Price, *Ibid.*, p. 510. 45. Coe, American Journal of Obstetrics, 1891, 152. 46. Bagot, Dublin Journal of Medical Sciences, 1891, 225.

It is interesting to note the results of various forms of treatment. Of 142 cases of all varieties and degrees, in 4 craniotomy was done, with 4 deaths; in 63 the treatment was expectant, with 40 deaths; in 19 version was done, with 8 deaths; in 5 dilatation alone, with 2 deaths; in 18 forceps were used, with 4 deaths; in 7 ergot was given and nothing else done, with 2 deaths; in 12 the membranes were ruptured, with 2 deaths; in 8 the membranes were ruptured and ergot given, with 1 death; in 1 a Porro was done successfully; in 5 the membranes were ruptured and the os dilated, without a death.

These cases may be classified as follows:

(1) Cases occurring during labor, 37 with 21 deaths; in 21 the treatment was expectant, with 16 deaths; in 8 version was done, with 4 deaths; in 6 forceps were used with 1 death; in 2 the membranes were ruptured and dilatation done, with no death.

(2) Cases in which the hæmorrhage preceded the labor, 105 cases, with 42 deaths. In this class I have included perhaps half-a-dozen in which the hæmorrhage was so sudden and severe as to render the case hopeless from the start, and also a few in which there were slight symptoms of hæmorrhage, with labor coming on of itself a few days later. The class is so broad that any attempt at statistics would be misleading. I will only state that 57 per cent. of those treated expectantly, died.

There is, however, a third type of cases, in which the mortality is far greater, namely, nearly 85 per cent. Of this the following would be a picture: A woman in the last months of pregnancy, very likely a few hours after a slight blow or some great emotion, is suddenly seized with sharp, cutting pain in the upper uterine zone. After a short time this pain is replaced by a dull, continuous ache. The attack is very much like an ordinary colic in many ways, and in lack of anything like labor pains or external hæmorrhage, or anything else to call especial attention to the uterus, the woman is treated under that supposition; the faintness and clammy skin being looked on as the natural concomitants of nausea, and not till valuable hours have been wasted does the increasing prostration suggest to the attendant that he has to do with anything more serious than colic. Meanwhile, the uterus has been slowly increasing in size, effectually paralyzing by over-distention any tendency on its part to contract, while the cervix is hard as iron and totally undilated and unyielding, and the patient plainly going to die unless the hæmorrhage is stopped. Here the indication is plain enough. Till the uterus is emptied the patient's life is in extreme danger, but how to empty it is by no means always an easy question. It is no trifling matter to dilate such a cervix, not softened by the previous slow advent of labor. I read of many cases where a couple of hours or so were spent in fruitless attempts at dilatation, and after all the woman died undelivered, or if the dilatation could at last be accomplished the constant and long-continued hæmorrhage had been too great for reaction to take place.

Let us consider the results in those cases in which there were absolutely no labor pains from beginning to end. In one forceps were used successfully, the head having engaged, although no labor pains were felt; in one the membranes were ruptured alone, with fatal result; in seven version was done, with three deaths; in one diltaation was done alone, with fatal result; in one ergot alone was given, with fatal result; in three craniotomy was done, all three mothers dying; in twenty, nothing, or at most stimulation, was done, with twenty deaths.

In a few of these cases death was sudden and immediate. In a few more the state of the woman was thought to be so low that any interference was unjustifiable. It may, perhaps, be justly said that some of the cases in which labor did come on some time after the hæmorrhage, ought to be included with these as treated expectantly. I have, however, tried to include in it only those cases in which the prostration was too profound to render probable, or perhaps possible, the advent of labor. Of course it is impossible, owing to the varying degrees of detail with which cases are reported, to make a list like this very accurate, and all I hoped to do in presenting it was to emphasize the mortality in these cases, and also to bring out that the severer forms of hæmorrhage, if left to themselves, are almost sure to kill the patient.

It was with these somewhat gloomy statistics before him that Dr. Wm. Bagot, late assistant master at the Rotunda, in Dublin, was led to try a new method of treatment, of which the following case is an example. I had the good fortune to be a witness of it nearly from the beginning, and report it by his permission.

The patient, M. M., was a large, healthy, Irishwoman, of somewhat nervous temperament, thirty years old, and the mother of seven children. Last catamenia ceased October 16, 1890. On the evening of May 6th, while dusting under a bed, she struck the side of her abdomen quite severely against it, and felt somewhat lame in consequence that night.

May 9th, 6 A. M., she "felt badly," and sent for a physician, Dr. B. A. Cheney, of New Haven, from whose notes I take much of this history. He found a few spots of blood on her night-dress. The patient was then in perfectly good condition, temperature normal, pulse 96, but felt restless and frightened. Finding a vertex presentation and the cervix undilated and no signs of labor present, he attributed her condition to nervousness and ordered an anodyne. At 7 o'clock was called again, and found that there had been enough external hæmorrhage to soak two or three towels. The patient was comfortable, quieter, and the pulse as before. The vagina was tamponed in the hope of starting up uterine contractions. At 10 A. M., while Dr. Cheney was in the room, the patient suddenly blanched, the pulse ran up to 150, very feeble and intermittent, a gasping, sighing respiration appeared, and, in short, she presented all the symptoms of hæmorrhage. The uterus was more distended than before, but was not manipulated unnecessarily. The cervix was as before, hard and rigid, with complete absence of labor pains. There was no external hæmorrhage now, and pain was conspicuously absent. The membranes were ruptured, clear liq. amnii escaping, without visible effect on the woman's condition. Dr. Bagot was now sent for in consultation. After due consideration he decided that the best chance of saving the mother was to do a Porro as quickly as possible. The child was not considered, it being presumably dead.

The grounds that led him to adopt this radical treatment were somewhat as follows: In the first place he faced a mortality of 85 per cent. in the cases of concealed hæmorrhage without labor pains treated by the ordinary methods. Further, he thought that the condition of the woman, the pulse now being nearly 200, in spite of the most vigorous stimulation, was so desperate that it precluded the idea of subjecting her to the risk of the further hæmorrhage that would probably follow any manipulation of the rigid and undilated cervix, fearing that she would die on his hands while dilatating even enough to extract after craniotomy. Even supposing that she lived through the extraction there remained the danger of post-partum hæmorrhage, and she seemed so bloodless that apparently even the loss of the amount of fluid ordinarily following delivery would be too much for her. By doing a Porro, on the other hand, provided she stood the shock of the operation, not in itself necessarily great, further loss of blood was absolutely prevented. A conservative Cæsarian section was not considered, the time necessary for that operation being out of the question in the patient's condition. As the uterus did not now seem to be increasing in size, nor the condition of the patient growing worse, there were grounds for hoping that the hæmorrhage had ceased for the time, and in the absence of uterine contractions that it would not start up again until the few necessary instruments had been procured and sterilized.

Meanwhile, in the next hour, she was given an ounce of whiskey under the skin. She was then etherized, using a mixture of three parts of ether to one of chloroform. The cleansing of the skin was thorough but very quick, for fear of starting up bleeding, and in less than three minutes after she was thoroughly anæsthetized she had been scrubbed up, the abdomen opened, the broad and round ligaments on each side clamped and divided, and the uterus, with an elastic ligature around its base, effectually preventing further hæmorrhage, had been tipped forward out of the abdomen, the walls of which were at once caught together with a couple of pairs of bullet forceps. On opening the uterus the dead child was extracted, the placenta being found wholly detached and the uterus full of clots and liquid blood. The uterus was then amputated low down, and after catching the uterine arteries with six snaps the elastic ligature was exchanged for a Tait's clamp. Two Peaslee's needles served well as hysterectomy pins in default of better ones. The other details of the operation were as usual, though hurried.

With warmth and plenty of whiskey the patient rallied well, and four days later was carried to the hospital, where she made a good recovery. Any one familiar with the filth and squalor of Dublin tenements will appreciate the unfavorable nature of the surroundings, yet so thorough was the asepsis that her temperature did not rise above 100°.

Four months later the woman was seen, "feeling better than before the operation."

In 1890 Tait recommended Porro's operation as being suitable for certain cases of placenta prævia and as a result rather a storm of criticism descended upon him. While its advisability in placenta prævia may be an open question, it seems in cases like the one reported that the operation is not only justifiable but even the only one promising success.

The St. Louis Medical Era, a new monthly journal of medicine and surgery, appeared for the first time in September, under the editorship of Dr. S. C. Martin.

THE TREATMENT OF WOUNDS FROM THE ASPECT OF GERM INFECTION.[1]

BY CHARLES B. EWING,
Captain and Assistant Surgeon, U. S. A.

We understand by wound infection, the introduction into wounds of specific micro-organisms, causing suppuration. I do not propose to include the forms of wound infection, which may arise from those specific germ diseases, known as tetanus, diphtheria and scarlatina, etc.

In order to arrive at a proper understanding of the treatment of wounds, we are to determine what those micro-organisms are, where they are to be found and the method of their introduction into wounds.

Broadly speaking these pus-producing germs are known as the staphylococcus pyogenes albus and aureus, the streptococcus pyogenes and the staphylococcus epidermis albus (Welchii), a modified form of the albus of Rosenbach, leaving out of consideration all chemical pyogenic substances and sterilized cultures of various micro-organisms, which cause suppuration independently of these microbes. Neither do we consider that third species of staphylococcus pyogenes, the citreus, cereus albus or cereus flavus of Passet, the staphylococcus flavescens of Babes, the micrococcus tenuis of Rosenbach, nor lastly, that producing the green fluorescent and the blue pigments, known as bacillus pyocyaneus of Gessard and the bacillus pyocyaneus (beta) of Ernst, respectively.

The question of the relation of micro-organisms to suppuration is an old but very interesting one, and we are indebted to Grawitz and DeBary, for clearing up the matter. The trite dictum, "no suppuration without micro-organisms," was known by them particularly to be fallacious, inasmuch as germ-free chemical substances were shown to produce suppuration, yet the aphorism as a generalization remains correct.

Admitting then the above, we proceed to a brief mention of: (1) Germs constantly resident within or in close proximity to the wound; (2) Those coming from without.

Under the first heading, we have only one, a coccus, known as the staphylococcus epidermidis albus (Welchii). This organism, though not verified by other observers, is thought by Professor Welch, of Johns Hopkins, to be a permanent inhabitant of the skin in health, and more particularly of the deeper layers of the epidermis, as well as an occupant of abscesses formed around stitches used in closing wounds. While Professor Welch admits the close relationship of this pathogenic entity to the white coccus of Rosenbach, he shows conclusively wherein its genesis is different and should be designated as a separate distinct organism, because "possessing such feeble pyogenic capacity, as is shown by its behavior in wounds as well as by experiments upon rabbits, that the designation staphylococcus pyogenes albus does not seem appropriate." If it had been shown as Professor Welch informs us, that his coccus is a constant inhabitant of the epidermis, it certainly differs from that of Rosenbach, inasmuch as it has never been claimed by observers, that the latter had its habitat in the skin at all.

This new coccus will prove troublesome to surgeons who place "drainage-tubes and other extraneous substances into their wounds," and we must needs pause and consider, when we are informed that such an able exponent of our art as Professor Halstead, of Johns Hopkins, "has abandoned for nearly all wounds, the use of skin stitches, the edges of the wound being brought together with admirable coaptation by subcutaneous sutures." We are certainly greatly indebted to Professor Welch for this very valuable contribution to surgical pathology.

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[1] Remarks before the Association of Military Surgeons of the National Guard, at its St. Louis meeting, 1892.

Coming now to our second group: "Those germs coming from without"; we shall make mere mention of the species heretofore named, the staphylococcus pyogenes albus and aureus, and the streptococcus pyogenes. These cocci are so well known to you that I shall not go into their history, but merely say that they may be introduced into the wound through the air, the instruments and dressings (particularly thread and drainage tubes when used), or the person of the operator, such as his hands, hair or perspiration, etc., leaving out of consideration auto-infection.

In speaking of the treatment of wounds, I shall premise by saying that asepsis is only to be attained through antisepsis, and without the latter we cannot hope for the former. Antisepsis of the field of operation, except in certain regions, is much more easily obtained, than that of the hands, hence I shall direct your attention particularly to this, in doing which I can do no better than to ask your careful scrutiny of the work of Welch, Kelly and others, which when crystallized is about as follows as regards sterilization of the hands:

(1) Scrubbing with sterilized brush, using soft soap and hot water, several minutes; (2) immersion in hot saturated solution, permanganate of potash, three minutes; (3) immersion in hot saturated solution, oxalic acid, three minutes; (4) immersion in hot common salt solution, three minutes; (5) immersion in hot (1 to 1500) solution bichloride of mercury, three minutes.

An aseptic Field of Operation can be obtained in this way: (1) scrub and douche thoroughly, with soft soap and hot water; (2) wash with turpentine; (3) wash with ether; (4) wash with solution of corrosive sublimate (1 to 1500); (5) compress, soaked in above solution and applied over part to be operated on; (6) compress and roller bandage, to hold the above in place.

The ideal dressing, after the incisions have been closed with sterilized silk, is one which seals the wound hermetically and prevents the invasion of pathogenic organisms completely, from without. This consists in applying a saturated solution of powdered iodoform in colodion, where the initial incision is through the integument, and a saturated solution of powdered iodoform in ether, where the integument has been destroyed by disease or accident. The incision is closed, the line of the wound, the skin and sutures are thoroughly dried and the solution applied, according to the conditions above mentioned, with small camel's-hair brush. Evaporation takes place rapidly, and the dressing hardens evenly and firmly, acting as a splint to the part. It is important that not only the line of the wound and sutures be protected with the solution, but that the neighboring parts, for at least an inch, be thickly covered.

The qualities possessed by this dressing are these: it is always satisfactory, simple and easily made. No additional dressings are necessary, except where the solution of iodoform in ether is used, in which case the ordinary dressings are sterilized and applied over the part treated. This latter solution cannot be regarded as the former, in the light of an ideal wound-dressing, as the operations requiring its use are of an entirely different character from those demanding the iodoform-collodion solution.

The iodoform-collodion dressing can be left a week or more, then removed with ether, and the stitches taken out. If, however, the staphylococcus epidermidis should have caused suppuration around the stitches, as indicated by pain, redness, local tenderness and elevated temperature, then the dressing should be at once removed and the discharge of stitch-abscesses encouraged.

On the battle-field, the first dressing must of necessity be dry; consequently wound-infection follows in a great many cases. This dry dressing itself may contain pathogenic organisms, and in that way cause infection.

Germicidal fluids cannot be used unless concentrated and of small bulk, in convenient receptacles for transportation, which is a very difficult problem to solve. Again, the question arises, as to whether it is possible to obtain complete asepsis by the use of a dry dressing. I think we shall be obliged to answer in the negative. Then a fluid of strong antiseptic properties must be chosen, and that should be the very best germicide, as the quantity of fluid must be small as space in an army-chest and transportation are alike very valuable.

What shall it be? The best antiseptics of to-day require that they be used highly diluted; consequently small quantities will hardly subserve the purpose of producing an aseptic condition.

Since writing the above, a communication signed by Dr. Kelly, has appeared in the *American Journal of Obstetrics*, to the effect "that saturated solutions of permanganate of potash and oxalic acid are not germicidal to streptococcus and staphylococcus, aureus or albus, in pure culture upon silk threads, which have been infected for twenty-four hours," and he is "unable to explain the remarkable difference between the experiments made upon the hands and the severer tests, applied in the bacteriological laboratory."

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A SYMBOL FOR PHYSICIANS?

BY F. B. STEPHENSON, M.D.
Surgeon U. S. N., Member of the Asiatic Society of Japan.

In the *Illustrated American* (February 20, 1892), reference is made to various symbols of life's conditions, mysteries and problems in use among the adepts and philosophers of ancient India, Assyria and Egypt. Some of these symbols are analogous if not identical with forms recently discovered in the southwestern part of the State of Ohio (United States of America) — region of "Mound Builders." I have seen one of these tokens, typifying *God in Nature*, employed in a similar manner by the Koreans. This is but one of many written objects showing the mento-moral association with Sanscrit ideas which was formerly a prominent feature in the intellectual life of Chösen, when schools and art were not unknown to what we now call the Hermit Nation. Their national ensign is an illustration of this kind of concise representation of cosmic or helio-geic concepts. There are material and mento-linguistic evidences of intercourse between the people of Chösen and those of Japan and ancient North America.

Logos, the mind, reason, of the All-Father —

AUM and JAH are forms, in which, similarly, the thoughts of the sages of old are epitomized.

Such investigations are in the same direction as the excellent work done by Dr. Sozinskey, published under the title "Medical Symbolism." This concise volume makes one eager for more details, deeper analysis and continued, intelligent, judicious criticism. He brings again to public attention the error of using the *winged* "wand" of Mercury (Hermes) as that of Æsculapius (Asclepias); and mentions other examples of incorrect placing of insignia purporting to be characteristic of the medical profession.

The intimate association of these symbols with both theistic (sacerdotal) and iatric functions, authorizes the belief that the physician's science, his thought and art, are divine in origin (as nature, instinct with life, is divine) — even as in action, his practice should be truly benevolent, free from personal and mercenary motives.

One feature of the injury may be seen in the following linguistic (philologic) relation of ideas. Among the very ancient peoples of the Euphrates valley — source of human civilization — the *word* meaning "serpent" also signified "life." May we not hence surmise that, owing to ignorance, a mistranslation gave rise to the acceptance of this uncanny reptile as the symbol of a most worthy *caritas* — meriting a noble conception? Folklore among the Indians of North America affords an instructive parallel (for example, regarding the fox?).

"Medicus" is from a word in the Mongolian language which meant "one who knows." "Iatros" is from a Chinese word which meant "care-taker" or "one who does." These words have been carried by people migrating.—[Edkins.]

From the published records of the evolution, through manipulations of the half-instructed, of form (and *form* only) in relation to the symbol of medicine, we may feel justified in looking upon the now popularly used "staff and serpents" as something vastly different from the first drawn pictures, which represented the "in-all" "through-all" creative and preservative forces of nature, especially of animate life. Their direct primal antecedents are recognizable by the "enlightened" — too sacred for the undevout gaze of the "profane" *vulgus*.

A form of the cross is, in ancient books, figured on the breast of Buddha. One of the derivatives of this Sanscrit symbol brings to mind the tortuous lines so familiar to the popular mind. It was known as Buddha's *heart-symbol*, with the signification "secret wisdom" which recalls the oath of Hippocrates.

This subject is much too extensive and various for thorough discussion here. These remarks are intended merely as illustrative and suggestive of the possible — hoping for the realization in permanent serviceable help.

With sufficient leisure and opportunity (access to books and other records and traditions), it would be a profitable pleasure to trace out data (in the science and philosophy of Occident and Orient) and design, for the medical profession, a symbol that should be at once universal, properly significant, agreeable to the eye (in color, form and size) and acceptable to a dignified, refined taste and delicate feeling. The insignia of the medical corps now used by the Russian Navy is classic, full of meaning — and yet — ?

The existing variety of symbols adopted by medical bodies (civil, military and naval), writers, publishers, etc., suggest a search for one that will commend itself to every intelligent physician. An emblem of nationality might be added to the cosmopolitan elements for those whose duty requires an exhibition of governmental authority. As an individual, the heart and skill of Iatros recognizes no political distinctions.

Medical Progress.

REPORT ON LARYNGOLOGY AND RHINOLOGY.

BY FRANKLIN H. HOOPER, M.D.

FUNCTION OF THE TONSILS.

Dr. Gulland,[1] from a study of the interesting question relating to the use of the tonsils, draws the following conclusions: (1) The tonsils — faucial, lingual, and pharyngeal — are organs arranged to further the reproduction of leucocytes. (2) This reproduction takes place mainly in the germ centres, by micotic division of pre-existing leucocytes. (3) The young leucocytes, so formed, are partly carried off to the general circulation by lymphatic vessels originating in the tonsil, partly remain in the tonsil as "stationary" cells, and partly wander out into the crypts by perforating the epithelium. (4) They then pass to the surface of the tonsil, and take up foreign bodies, especially micro-organisms, which would otherwise pass the tonsils. (5) In the human subject the lingual and faucial tonsils, and the slight diffuse leucocyte infiltration of the under surface of the velum palate, form a protective ring or zone between the mouth, which abounds in microbes, and the rest of the alimentary tract; while the pharyngeal and tubal tonsils, and the diffuse leucocyte infiltration of the upper surface of the palate, form a protective ring round the upper part of the respiratory tract. (6) There is no reason to regard the tonsils as having any absorbent function in normal circumstances; the reproduction of leucocytes is sufficiently active, as a rule, to keep up a continuous outward stream of these cells, and to prevent the entry of foreign substances into the tonsils. (7) Under certain circumstances — for instance, in general debility — the reproduction of leucocytes may be interfered with, and the outward stream of these cells from the tonsils may be arrested. This arrest, or other circumstances interfering with the activity of the leucocytes, may allow pathogenic organisms from the mouth, etc., to enter the tonsil by the spaces in the epithelium, and these microbes may give rise to a local or general infective process.

PHARYNGO-MYCOSIS.[2]

In a paper read by Henry Bixby Hemenway, M.D., of Evanston, Ill., before the Chicago Medical Society, December 7, 1891, the author states that pharyngomycosis is a very annoying trouble for the general practitioner. It is frequently confused with other affections, especially with follicular pharyngitis.

The etiology is uncertain. Catarrhal inflammations, mouth-breathing, hypertrophied tonsils, and damp, unhealthy surroundings are predisposing causes. It is more common in females than males. Dental caries and unhealthy skin have been mentioned as causes. The form of the bacillus suggests that it is, perhaps, closely related to forms found in stagnant water.

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[1] Edinburgh Medical Journal, November, 1891. New York Medical Record, February 6, 1892.

[2] Medical News, January 9, 1892, p. 38.

It is a chronic affection subject to exacerbations and abatements. Subjective symptoms vary from slight tickling to decided obstruction. There is frequently a hacking cough, perhaps with vomiting. The irritation frequently produces tonsillitis.

Objectively, we see white or yellowish spots on the pharyngeal wall; generally projecting from the crypts if on the tonsils. Removable with difficulty and rapidly reproduced.

Follicular accumulations may *contain* leptothrix filaments, but mycosis is *composed* of filaments. These filaments are clearly seen with an amplification of 600 diameters, especially if stained with methyl-blue.

In the specimens examined by the writer he frequently found leptothrix filaments, but the constant form was not leptothrix. Leptothrix buccalis filaments are from 0.7 to 1 mmm. broad, and the cells measured by the writer were seldom over 3 mmm. long. The bacillus of mycosis (B. fasciculatus, Sadebeck) varied in thickness from 0.4 to 0.56 mmm., generally about 5 mmm. long, but sometimes 16 mmm. in length.

Leptothrix is frequently found on the gums. Mycosis is not found on the gums.

The fungus is slowly destructive of the tissues on which it grows. It is generally more troublesome than dangerous. It may be implanted upon the Schneiderian membrane or in the lungs. Spontaneous cures sometimes occur. No treatment is satisfactory but removal by galvano-cautery. Since the bacilli thrive best in acid media, it is recommended that the negative electrode be used.

MALIGNANT TUMOR OF THE NASO-PHARYNX.

Dr. John Macintyre, of Glasgow, reports in *The Journal of Laryngology and Rhinology*, October, 1891, a case of malignant tumor of the naso-pharynx, which is of interest from a diagnostic point of view, and from the post-mortem examination.

The case, which came under notice in July, 1886, was a man, aged forty-eight, who had been admitted to the Western Infirmary two months previously, under the care of Dr. Finlayson, suffering from severe pain in the head, and with distinct paralysis of the external rectus of the right eye. The patient had been sent to the hospital on the supposition that the disease was syphilitic, but no history of this affection could be found. He had suffered from the disease since December, 1884, and the pain was localized at the top of the nose, but radiated to the right temple and cheek and also to the teeth. Shortly after admission the patient complained of severe basal headache, particularly at the occiput. In February, 1885, a discharge of matter from the right nostril had set in, which continued throughout the disease, and both nostrils apparently became affected shortly after this date. So far as could be ascertained the nasal affection preceded that of the right eye, which was deviated inwards and with complete inability to avert it. Diplopia was distinct, and it was homonymous. Careful examination of the eyes by Dr. Freeland Fergus, revealed no gross lesion, but it might be noted that there was a history of old-standing discharge from the left ear, with great impairment of the hearing. In the right ear the hearing became distinctly affected in April, at a time when the discharge from the ear was very much diminished. The left tympanic membrane had been partly destroyed with the old suppurative process. On the right side the membrane was thick and opaque, but after repeated investigation it was supposed that there was deafness from nervous cause on the right side as well. There was slight deficiency in the power of movement on the right cheek, and slight deviation of the tongue to the right. A small gland could be detected in the right side of the neck over the sterno-mastoid. Examination of the nostrils revealed old-standing rhinitis in the region of the middle and inferior turbinated bones on both sides, with a great deal of inflammatory exudation. In the naso-pharynx a tumor could be detected in the vault, which was somewhat rounded in shape, irregular on the surface, and evidently growing from the base of the skull. The membrane of the naso-pharynx was seen to be thickened and inflamed.

The tumor grew very rapidly, ano by the end of August the whole upper part of the pharynx was filled with the new growth. Shortly after leaving the hospital, the pupil, which previously had been directed inwards, returned to its normal condition, and complete ptosis set in. About the same time the cheek became distinctly paralyzed, and the speech affected. The patient's condition became steadily worse, and for some weeks before death breathing was performed with difficulty. As the tumor extended the pain in the head and neck became more difficult to control, and the discharge proved one of the most distressing symptoms of the case, when paralysis of the pharynx supervened.

The patient died on the 5th of December, 1886, and permission to examine the brain was given on the 7th. The following notes were taken at the time:

On removing the calvarium a quantity of clear serous fluid beneath the pia mater was found, beyond this the upper surface of the cerebrum appeared normal; the base of the brain was also normal, with the exception of a small abrasion of the inferior surface of the tempero-sphenoidal lobe, where it lay in contact with the diseased membranes. In the middle fossa of the skull the membranes were greatly destroyed, and there was a considerable quantity of muco-purulent fluid present. A tumor of the body of the sphenoid bone was next made out, which passed outwards into the great wing for about an inch, forwards to the spenoid fissure, and posteriorly involved the apex of the petrous portion of the temporal bone. On opening the naso-pharynx, this, and the posterior portion of the nasal cavity, were seen to be almost completely destroyed, the parts being reduced to pulpy consistence. After removing a portion of the base of the skull, the ligaments between the atlas, axis, and occipital bone were found to be involved, the deep muscles, namely, rectus capitis posticus and anticus, splenius capitis, longus colli, and the fasciæ over and around these muscles were all infiltrated with what appeared to be a quickly-growing tumor, the destruction being so great that the different parts were recognized with difficulty. The medulla, cerebellum and orbit were apparently normal. Microscopic examination showed the tumor to be sarcomatous in nature, and of the round cell variety.

Dr. Macintyre concludes with the following remarks: "The more important symptoms of the case led those who had it under their care at first to treat it as specific in origin, but a careful examination of the naso-pharynx showed at once the presence of a neoplasm, which left no doubt whatever about the nature of the affection. The situation of the pain, discharge, enlarged glands, and particularly the order in which the different cranial nerves became affected, all pointed to malignant tumor in this region. The early implication of the sixth cranial nerve was a point of very great significance, because of a tumor springing from the base of the sphenoid; the possibility of operation might have been discussed, but the involvement of the sixth cranial nerve, lying as it does close to the body of the bone, on its upper aspect indicated a condition of matters which showed the impossibility of any operative measure. The third, fourth and fifth cranial nerves in this region are arranged in this definite order from above downwards and from within outwards, while the sixth, lying more internal, would therefore be first implicated in a growth from the body of the bone. It is extremely interesting to note, first, the implication of the sixth nerve with paralysis of the external rectus, and afterwards the return of the pupil to its normal position, when the growth had extended outwards sufficiently to involve the third, The cranial nerves became successively implicated on the affected side, and the invasion of the disease from one region to another could be traced by the results which showed this in the areas of distribution."

OBSERVATIONS ON THE OLFACTORY REGION OF THE BLIND DEAF-MUTE, LAURA DEWEY BRIDGMAN.[3]

Dr. Albert C. Getchell, of Worcester, Mass., has made an exhaustive and able study of the nasal organs of this celebrated woman with the following results:

The specimen submitted for examination was a portion of the ethmoid bone, extending from the anterior base of the crista galli to the sphenoid bone, a small part of the sphenoid being included in it. It contained nearly all the perpendicular plate of the ethmoid. At the sphenoidal end the lateral surfaces were devoid of mucous membrane; towards the frontal end the surfaces were quite covered with the remains of membrane in a ragged condition. The right superior turbinated bone presented a smooth surface marked with grooves. Between it and the perpendicular plate was mucous membrane. Little of the left superior turbinated bone remained, and that which did was rough and without grooves. The entire specimen measured from the extreme frontal to the sphenoidal end, 3 cm.; from the apex of the crista to the farthest point on the perpendicular plate, 2.2 cm.; laterally, its greatest measurement was through the horizontal plate of the ethmoid, .5 cm. This line represented the base of two triangles; the apex of one being the tip of the crista, that of the other the farthest point on the perpendicular plate of the ethmoid.

The specimen had been hardened in Müller's fluid, and decalcified in a saturated solution of picric acid, the process being completed in a one per cent. solution of hydrochloric acid. It was imbedded in celloidin, and most of the sections were stained with Delafield's hæmatoxylin and eosine. Four additional stains were used for nerves, namely: Upson's carminic acid, Schæfer's nigrosine, hæmatoxylin and carminic acid, and Pal's hæmatoxylin.

Results of the Microscopic Examination.—The thickness of the mucous membrane entire varied from .16 mm. to .64 mm., and the thickness of the epithelial layer from 48μ to 90μ. Taking .16 mm. as the thickness of the normal mucous membrane, it was found that those areas of the mucous membrane that were of this thickness, were far from normal. The surface of the epithelial layer was covered with thin granular matter, and the surface line was very irregular. The cells took the stain poorly, showing that they were degenerating into mucus. In many places the cell bodies had entirely disappeared, leaving a mere outline of their former structures. The row of round cells had disappeared and its place was taken by a mass of cells, now pushing up into the epithelial layer, now invading the membrana limitans. In the sub-epithelial tissue there was a dense deposit of connective tissue. In no part of the specimens was the epithelium healthy. At some points the mucous membrane was entirely devoid of epithelial cells; at others, there was the row of round cells, now single, now two or three deep. In some places these cells were becoming polygonal in shape; again over them was crowded confused mass of irregular cells breaking away. In some places there were breaks of continuity in the line of epithelial cells, otherwise fairly regular in their size and distribution. There were also places where the surface of the mucous membrane was thrown into elevations. There was generally a large increase of connective tissue, which in some areas, had replaced everything else. In other areas was abundant infiltration of small, round cells. Bowman's glands were very irregularly distributed and varied much in their character. They presented all gradations from a ring of fairly healthy polygonal cells to a confused mass of granular matter. The mucous membrane on the right of the septum was much healthier than that on the left. Its thickness was uniform, though in some places there was an increased deposit of connective tissue. The curve into the vault of the olfactory fissure was uninterrupted and regular throughout this side of the specimen. The epithelial cells, though individually undergoing degeneration, were fairly regular in outline. Bowman's glands were numerous in the frontal part of the specimen, but toward the spheniodal end they had disappeared. Throughout this area were nerves and blood-vessels, with greatly thickened walls. The left side of the specimen presented a very different picture. In the frontal fifth of the olfactory fissure was crowded a mass of connective tissue, in which were nerves, blood-vessels, glands, covered with degenerated epithelium. The perpendicular plate was devoid of mucous membrane, as was also that part of the superior turbinated bone which remained; the greater part of this bone was either in small fragments or had entirely disappeared. The remaining four-fifths of this side of the specimen was occupied by a fibrous tumor, which was, as it were, in a closed cavity, the mucous membrane of the septum having firmly united with that of the superior turbinated bone, giving in the sections the appearance of a ring lined with epithelium enclosing the tumor. The tumor sprang from the septum and projected into the superior meatus. Its length from its frontal to its sphenoidal end, estimated by the number of sections in which it was found, was upwards of 1.5 cm. It was irregularly polygonal in shape, and measured at its frontal end 1.12 mm. in height (that is from the septum to the apex of the tumor) and 1.05 mm. in breadth, while at its sphenoidal end the corresponding measurements were 2.50 mm. and 1.44 mm. Its character changed from the frontal to the sphenoidal end. In the frontal region it was made up of a central column of dense connective tissue, which supported nerves, blood-vessels, Bowman's glands, the whole being covered with a layer of epithelium as healthy as that in any part of the specimen. At the sphenoidal end the central column was divided by a fissure, Bowman's glands had disappeared, and the whole tumor was filled with spaces of irregular shape, many of them full of blood corpuscles. Blood-vessels remained, but there were few nerves and the greater part of the tumor was devoid of epithelium.

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[3] American Journal of Psychology, vol. iv, No. 2, December, 1891.

The Nerves. — There were two varieties of nerves in specimen, a branch of the ophthalmic division of the fifth which passes into the nose through the fissure at the base of the crisia galli, and the olfactory nerves. The branch of the fifth, a medullated nerve, was in the main normal. The axis cylinders stood out sharply throughout the greater part of the sections. In some areas, however, they had lost this distinctness and showed signs of beginning degeneration. But the change was no greater than might be expected in a woman of Laura's age.

The nerves were numerous and were easily distinguished by moderate powers of the microscope (320 diameters). To get some definite idea of the distribution of the nerves in the different parts of the specimen five slides were selected and the nerves on them counted. One of these sections was from the frontal end, one from the sphenoidal, the other three at regular intervals between them. A count was also made of the nerves of the control specimen under similar conditions, with the following results. (The slide numbered one in each case, was from the frontal end.)

	Bridgman.	Control.
First slide,	1 nerve.	4 nerves.
Second slide,	7 "	20 "
Third slide,	28 "	10 "
Fourth slide,	32 "	8 "
Fifth slide,	18 "	15 "
Totals,	86	57

This enumeration is of interest in that it shows the distribution of the nerves in the different parts of the specimens, but it gives no reliable information as to the relative number of nerves in the two specimens. It is a difficult matter, even under favorable conditions, to stain the olfactory nerves so as to show the nerve fibres. In neither of these specimens was it possible to show the olfactory nerves with special stains for nerve tissue. The only stain that brought them out at all was the hæmatoxylin and eosine, which did it by virtue of its differentiating the connective tissue. We shall see that this latter was greatly increased in the Bridgman specimen, and it is evident that because of this many more nerves would be detected than in the healthier specimen.

In the Bridgman slides, the nerves were surrounded by a ring of connective tissue which was very thick. Within this ring was a uniformly granular field broken up into smaller areas, and more or less studded with deeply stained dots. With a one-twelfth oil immersion objective, these dots were seen to be stellate connective tissue corpuscles. The areas alluded to above corresponded to the portions of the nerve bounded by the connective tissue envelope in Boveri's sections. Here, as with his sections, the connective tissue corpuscles were upon and within the sheaths. Rather the connective tissue corpuscles of the sheath were where the sheath should be, that place being represented in our sections by a vacant space. As this apparent shrinking was quite general throughout the specimen, it was attributed to the action of reagents. With this power, the nerve presented a regularly mottled appearance, very similar to a section of a frog's olfactory nerve as figured by Boveri, and representing according to his views the cut ends of the nerve fibres. The nerve in its essential elements, therefore, was normal. The connective tissue elements, however, were largely increased.

Dr. Getchell then gathers together the facts relating to Laura Bridgman's sense of smell and the general condition of her nasal mucous membrane during life, and attempts to find in the condition of this membrane an explanation of her symptoms.

From these notes one gathers that at the age of two, Laura suffered from a severe inflammation of the naso-pharynx, which doubtless extended to her nose: that after her illness she was quite destitute of the sense of smell, entirely so when at the age of eight she entered the Perkins Institution: that at the age of fifteen she could detect with certainty and pleasure moderately pronounced odors: that she had a severe nasal catarrh which lasted her entire life, although it decreased somewhat in severity: furthermore that there was no deformity without or within the nose that could be seen by one not accustomed to examine these parts.

The following is a summary of this highly interesting study, which should be read in full: (1) The ethmoid bone and the mucous membrane covering it had suffered from inflammatory disease, which particularly affected the left side. (2) This disease resulted in an excessive production of connective tissue, and in one area, the left superior meatus, there had been formed a fibrous tumor. The epithelium was generally and considerably diseased. The nerves contained an excess of connective tissue, but were otherwise normal. (3) When two years old, Laura had scarlet fever, which left her anosmic and with severe nasal catarrh. She partially recovered from both these conditions. (4) The anosmia was due to the occlusion of the left olfactory area by the union of the mucous membrane of the septum with that of the superior turbinated body, and also to the action of the inflamed mucous membrane upon the nerves of the right olfactory region. Partial recovery resulted from subsidence of this inflammation.

DISEASE OF THE BRAIN FOLLOWING A SIMPLE NASAL OPERATION.[4]

The *Journal of Laryngology, Rhinology and Otology* gives an abstract of an account of an unfortunate accident described by Wagner in the *Münchener Medicinische Wochenschrift.* The author performed a galvanocauterization of the left turbinated body in a patient twenty years of age, on account of headache. There was no special pain and there was no bleeding. The next day the patient had a severe headache, and on the third day there was hæmorrhage from both nasal cavities. This was treated first with ice water, then by tamponing the anterior and posterior nares. In the evening the patient became feverish, and Cheyne-Stokes respiration appeared. The tampons were removed, but the temperature did not fall, and symptoms of a severe affection of the brain appeared. Seven days later death occurred. A post-mortem examination was not allowed.

The author concludes that the bleeding could not have been the direct consequence of the operation, because it followed some days afterward, and because parts bled which had not been operated on. He believes that thrombosis of a sinus occurred, which disturbed the circulation in the nose. In some other published case operative treatment of the middle turbinated body was followed by meningeal disease.

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[4] New York Medical Journal, March 12, 1892.

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Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

(Continued from No. 15, page 364.)

Sixteenth Annual Meeting, held in Brooklyn, September 20, 21 and 22, 1892, the President, Dr. John Byrne, of Brooklyn, in the chair.

FIRST DAY. — MORNING SESSION (CONTINUED).

Dr. Robert P. Harris, of Philadelphia, read a paper on

THE REMARKABLE RESULTS OF ANTISEPTIC SYMPHYSIOTOMY.

This operation was first crudely performed in 1777, and revived and perfected by Professor Morisani, of Naples, who in 1866 first operated successfully on a living woman. His report in 1886 showed in less experienced hands, a mortality of eight women and five children in 18 operations. Since that report 40 women have been delivered by 13 operators, with death of only *one* women, 35 of the 40 children being saved. In no case was the woman left permanently lame. These figures plainly show that the operation has, by subcutaneous section and rigid antisepsis, been converted into a safe surgical measure, reunion of the pubes being perfect, and are in striking contrast to the results of the first 40 operations (1777 to 1804) showing a mortality of 15 mothers and 28 children; the results of the second 40 being about the same. The importance of pelvimetry was emphasized. The operation is impracticable in a Robert or Nægele pelvis, in coxalgic anchylosis, in cancer of the cervix, or non-dilatable cervix; in obstructions by exostoses, cervical and sacral tumors, and other abnormal growths.

As an opponent to craniotomy, in cases where the size of the pelvis is such as to admit of a safe delivery to the mother, after the fœtal head is perforated, symphysiotomy offers a good alternative.

Dr. Harris contrasted the three incisive methods of delivery in cases of contracted pelvis, — the improved Cæsarean section, with a mortality of $5\frac{5}{9}$ per cent. (at the Dresden Clinic); the Porro-Cæsarean operation, with a mortality of $11\frac{1}{9}$ per cent.; and lastly symphysiotomy, which on account of its low death-rate offered an inviting substitute for craniotomy.

Symphysiotomy had never been performed in America.

The steps of the operation were given as follows:

The following instruments used should be thoroughly sterilized before the operation: a scalpel, Galbiati's probe-pointed, sickle-shaped bistoury, some hæmostatic forceps, a needle-holder and needles, a catheter, ligature silk, gauze and cotton. The woman is placed on her back at the side of the bed, with her knees drawn up and separated. Shave the mons veneris and labia majora and disinfect the supra-pubic region, the vulva, perineum, and vulvo-vaginal canal. Examine the depth, thickness and direction of the symphysis and search out the fissure in its superior edge which marks the point of union of the two pubic bones. Then examine the inferior margin, and the anterior and posterior faces of the bones.

Introduce the female catheter and give it into the hand of an assistant that he may depress the urethra from the pubic region and at the same time carry it to the right side to save it from injury. Make a vertical incision through the skin and fat above the pubes, about two and three-fourths to three inches in length, ending about three-fourths of an inch above the symphysis, cutting the tissue gently and passing in a line toward the left of the clitoris, so as not to injure it. The length of the incision must depend very much on the depth of the fat to be cut through. Detach for a short space the recti muscles from their attachment to the two ossa pubes, introduce the left index finger into the opening and separate the retropubic tissue. Then apply the palmar face of the finger directly against the posterior face of the symphysis, and hook with it the inferior margin of the articulation, while the assistant attends to the catheter as stated. The operator then introduces the Galbiati bistoury and hooks it around the articulation, cutting the interosseus ligaments and cartilage, from within outward, and below upward. When the section has been completed, it will be known by a creaking sensation and a separation of the bones of from one and one-fourth to one and one-half inches.

After this step, cover the wound with gauze dipped in a bichloride solution of 1–4000, and attend to the delivery of the fœtus, having at the same time the separation of the innominatæ antagonized by pressure with the hands of assistants. During the passage of the head ascertain the amount of pubic separation, spray the vagina, and when the placenta is delivered introduce six or eight interrupted silk sutures into the edges of the wound, and dress it with sublimated cotton (1–2000) and bandage the pelvis and lower extremities.

This is substantially the operation as adopted by Caruso, and Professor Morisani, of Naples.

Dr. Wm. T. Lusk, of New York, had a horror of craniotomy, but owing to the greater danger of Cæsarean section, would allow the woman and her friends to choose between the two. A separation of the symphysis of a centimetre and a half was the greatest he had read of, eight centimetres, as stated by Dr. Harris, he thought much too great.

Dr. H. J. Garrigues, of New York, thought Dr. Lusk's estimate was too low. In 1881 he procured a Galbiati knife, intending to do symphysiotomy, but refrained for fear of leaving the woman lame. Craniotomy he considered justifiable under certain conditions, and had performed it three times.

Dr. Edward Reynolds, of Boston, recalled two cases where the lives of the childern were destroyed in attempts to deliver through the natural passages, which he now believed could have been saved by pubic section. He thought symphysiotomy, so successful in European women, should be more successful in American women whose anterior-posterior pelvic diameter was usually greater, and would therefore permit of greater separation of the symphysis.

Dr. H. C. Coe, thought, it was an error to consider the diameters of the pelvis only, without having regard to the size of the fœtal head.

Dr William H. Parish, of Philadelphia, presented a paper on

CŒLIOTOMY AFTER LABOR.

The surgical treatment of abdominal and pelvic lesions, resulting from puerperal septicæmia has received much attention during the past decade. An abscess in the pelvic connective tissue, or within the tube or ovary, or when encysted in the peritoneal cavity, must be evacuated early, usually with the knife. While the necessity for early surgical interference is well recognized by experienced operators, not infrequently the physician fails to appreciate the emergency and the operator is often times called at a time when complications have already arisen which render an operation extremely dangerous. There is still a widespread belief among many of those not engaged in the performance of abdominal operations, that when suppuration occurs after labor that the pus is usually in the pelvic connective tissue, and that it is best to wait for fluctuation or bulging in the vagina before attempting to evacuate. The pelvic connective tissue is undoubtedly not the usual site of suppuration, and such a delay renders the later removal of pus, through the abdominal wall, frought with increased danger. When pus exists within the pelvic cellular tissues, its evacuation is usually effected per vaginam or above Poupart's ligament, external to the peritoneum; but in some cases a median cœliotomy may be indicated, as an aid toward ascertaining the location of the pus when other diagnostic measures point to the existence of suppuration but do not indicate its location.

The author emphasized the fact, which has been indisputably established by modern surgery, of the relative great infrequency, even after labor, of suppuration within the pelvic connective tissue. When this fact is accepted by the profession at large, a closer watch will be kept for the appearance of suppuration at other points, as in the tube or ovary, and the danger of delaying the operation will not happen so frequently. Ovarian cystoma, hydro-hæmato and pyo-salpinx did not render pregnancy impossible. Labor sometimes establishes a localized or general peritonitis; and if the symptoms do not promptly subside, there exists an absolute indication for cœliotomy, removal of the offending mass and irrigation, but in some cases the evidence of infection may be merely transitory, and operation may be safely deferred. The speaker saw such a case in 1889. The operation must be performed, however, after labor if infection occurs.

The author believed that total extirpation, or vaginal hysterectomy is not always necessary in a case of puerperal uterine abscess, and related an illustrative case of irregular uterine abscess after labor in which the abscess was drained, and by two semi-elliptical incisions a wedge-shaped portion of the uterus was removed without reaching the uterine cavity, the patient making a good recovery.

The author related another case, of plastic peritonitis in which the amount of pus encysted was so very large that the medical attendant thought it was ascites. He drew off three gallons of pus, irrigated and drained, and the patient made an excellent recovery.

Diffused suppurative peritonitis rapidly terminates fatally. The pus formed is limited in quantity, is diffused over the peritoneum though most abundant in the pelvic regions, presents the streptococcus in greatest abundance, and is most virulent in character. During the progress of plastic peritonitis, cœliotomy is rarely indicated unless pus is present. Plastic peritonitis may occur without the existence of abscess, when it is usually limited and tends to recovery under proper non-operative treatment.

In the severe cases of diffused septic suppurative peritonitis, cœliotomy is useless and unjustifiable unless performed very early. The author thought there was very little to be hoped for from cœliotomy in these virulent cases, as the rapidity of the spread of the poison was such that it rendered a sufficiently early performance of the operation very infrequent.

Dr. Parish had performed cœliotomy eight times after labor with one death. In every case there was pus in the tube, ovary, or uterine parenchyma, or encysted in the peritoneum. In the fatal case death was from exhaustion and shock, and the very hot weather, the temperature of the room at the time of operation being 98°.

Prior to the performance of cœliotomy for any condition following labor, the genital canal should be rendered as aseptic as possible. The uterus should also be curetted with a dull curette before the operation, and repeated douches used.

SECOND DAY.

Dr. Chas. P. Noble, of Philadelphia, read a paper on

CERTAIN ASPECTS OF GONORRHŒA IN WOMEN.

The frequency of the invasion of the womb, tubes, ovaries and peritoneum, was not appreciated until demonstrated by the daily work of the modern abdominal surgeon. He related the case of a woman free from genital catarrh, who contracted gonorrhœa of the cervix and vulvo-vaginal gland with little or no involvement of vagina, which spread to the tubes and caused a large collection of pus within the peritoneum.

Wertheim had demonstrated that the gonococcus could produce peritonitis in white mice, with a refractory mucous membrane and reasoned it should produce it in the human being whose mucous membrane is susceptible to gonorrhœa. He claimed the gonococcus could penetrate pavement, as well as cylindrical epithelium, and that it could penetrate the connective-tissue and infect the lymphatics. He had demonstrated gonococci in pus from an ovarian abscess. The author had never seen a case of gonorrhœal salpingitis in which a natural cure with functionally active tube resulted.

Where one ovary was diseased and removed, he would remove the sound one, also, in elderly women, for fear of subsequent involvement. Younger women, should decide for themselves, as regards a second operation.

Drs. Palmer, Maur[illegible], Baker, Davis, and Skene discussed the paper. Several of them had seen gonorrhœal salpingitis recover symptomatically, although in subsequent pregnancies, whether the appendages on both sides had been involved could not be stated with certainty.

Dr. Skene doubted whether in involvement of the kidneys in chronic gonorrhœa, the disease was of gonorrhœal origin. He thought the urine either destroyed the gonococcus, or by its outflow prevented it from passing up the ureter.

RETRO-PERITONEAL TUBERCULOSIS, SIMULATING HERNIA.

Dr. Edward P. Davis, of Philadelphia, read the history of a case of this nature. It occurred in a woman who began to suffer from pain in the right inguinal region, following the lifting of a heavy weight. She was kept in bed eleven weeks, during four of which she had metrorrhagia. On recovering, she resumed her work as a domestic, but some time afterward was again seized with severe pain in the right ovarian region. When she was seen by Dr. Davis, she was well nourished; thoracic viscera normal; abdomen moderately distended; a swelling in the right inguinal region, which resembled a hernia; temperature from 100° to 102½°; pulse rather rapid. She gave a good history; her father, however, had died of tuberculosis. It was believed that she had a hernia or tubal disease. The tumor was cut down upon, and the resemblance to a hernia persisted during the section of the sac. It was utterly impossible, however, to reduce the tumor; and as the patient was about to pass into collapse, the abdomen was hastily opened in the median line, and while the finger was trying to return the mass it penetrated an abscess, which contained several ounces of pus. The pelvic peritoneum was thickened and engorged, and in the hypogastric region was commencing peritonitis. Briefly, it became evident that the disease had had its origin behind the peritoneum, and must have been of the nature of tuberculosis. As was usually the case, the pus did not contain the tubercle bacillus. The patient made a good recovery, and has shown no signs of tubercular disease.

Dr. Egbert H. Grandin, of New York, read a paper entitled

ACCOUCHEMENT FORCÉ IN CERTAIN OBSTETRICAL COMPLICATIONS, WITH REMARKS ON THE TREATMENT OF POST-PARTUM HÆMORRHAGE.

Accouchement forcé and tamponade of the uterus had been rendered safe by strict antisepsis. The following case, among others was related:

A multipara, eight months gravid, had hæmorrhage, and her doctor inserted a vaginal tampon. When Dr. Grandin was called, her pulse was rapid and thready, the facies that of the loss of blood. The condition indicated necessity for rapid evacuation of the uterus, primarily in the interest of the fœtus, secondarily those of the mother. He withdrew the gauze from the vagina, inserted the whole hand, found the cervix one-eighth dilated, the margin of the membranes presenting. He separated the margin of the placenta, introduced the finger, thirty minutes being required for dilatation; then bi-polar version was performed, the fœtus extracted, the placenta removed, and the patient thus spared all further loss of blood; the uterus was packed with gauze. Satisfactory recovery.

Other cases cited, where this method was adopted, were types of uræmia, and of disproportion between the size of the pelvis and fœtal head, in all of which the results were satisfactory. There was greater safety in bringing on labor with the sensitive hand, than with instruments.

The method of uterine tamponade was advocated in post-partum hæmorrhage, as gauze introduced into the uterus favored contractility, and prevented it becoming atonic. He used it wherever hot injections failed to cause a response. The possibility of injuring the cervix by accouchement forcé would not prevent him from employing it, and obtaining a living child, in preference to other methods, which were equally risky to the cervix.

Dr. W. H. Parish, of Philadelphia, thought the Society should hesitate, before giving its unqualified approval of accouchement forcé, on account of its great risk to the mother.

Dr. Willis Ford, of Utica, had in three cases of uræmic convulsions, dilated, applied the high forceps, delivered live children, and saved the mothers, although there was some laceration.

Dr. Chas. P. Noble, of Philadelphia, advocated dilatation of the cervix by the Braxton-Hicks method, preliminary to accouchement forcé.

Dr. Von Ramdohr, of New York, had seen two deaths after manual dilatation for quick delivery in eclampsia. The gauze tamponade in post-partum hæmorrhage, he had used in fourteen cases, always controlling the hæmorrhage.

Dr. John Byrne, of Brooklyn, the President, in his annual address, considered the

SURGICAL TREATMENT OF CANCER OF THE UTERUS.

He referred to the prevailing disposition, by many to disregard all means of relief save hysterectomy, which he believed was a dangerous, mutilating and fruitless proceeding. He called attention to the great number of hysterectomies performed, many with such fatal results. He gave in detail the statistics of European and American hysterectomists, and noted the "many examples to be found of the manner "in which the statistics of hysterectomy are" being constantly distorted and misrepresented "to suit the prejudices of individual writers."

Amputation of the cervix in cases of cancer of the uterus, whether high or low, was regarded by the writer as worse than useless without cauterization; and as it was not free from danger, he thought it could be said that there were only two surgical measures to choose between to-day, namely, (1) high amputation, or exsection by the galvano-cautery, not only of all diseased parts, but as much more and beyond the supposed danger-line as could be safely taken away, the same to be followed by thorough dry-roasting of all exposed surfaces; or (2) vaginal hysterectomy, with its more attractive surgical glamour, and ghastly record of lives shortened and even sacrificed on the altar of what was in these days miscalled "progressive gynecology."

In striking contrast to the results of vaginal hysterectomy the following statistics of operations by the galvano-cautery were given:

Four hundred cases, with no deaths from operation. In 40 out of 63 cases of the portio-vaginalis, 23 having stayed away, there was a exemption from recurrence of from two to twenty-two years, being an average to each of over nine years. Of 81 cases involving the entire cervix, 31 were lost sight of, 10 relapsed within two years, 5 had no recurrence for two years, 11 for three years, 6 for four years, 8 for five years, 6 for seven years, 2 for eleven years, 1 for thirteen and 1 for seventeen. He claimed for this method of treatment for uterine cancer, two most important advantages: (1) absolute freedom from danger, immediate or remote; (2) a longer respite from recurrence of the disease than has yet been shown by the most favorable and ingeniously constructed statistics of hysterectomy. The following are the author's conclusions:

(1) The ambiguous manner in which the statistical tables of vaginal hysterectomy have been constructed is so amusing and in some instances so suggestive of

erroneous inferences as to render their compilers open to a charge of *suppressio veri, or suggestio falsi.*

(2) Any operation known to be attended or followed by an average primary mortality of over 14 per cent. in the hands of the most experienced surgeons is a grave and a dangerous one and demands for its justification a large percentage of permanent cures.

(3) The frequency and rapidity with which recurrence takes place after vaginal hysterectomy for cancer, even when the disease has appeared to be limited and circumscribed, prove conclusively that it can lay no just claim to this essential feature.

(4) As the average period of life in cancer of the uterus when not operated upon, is not less than two years, but often more, suffering has not been lessened but aggravated, and life has not been prolonged, but shortened, in the vast majority of cases of those subjected to vaginal hysterectomy.

(5) As in 28 cases of vaginal hysterectomy for cancer of the fundus at the Berlin Clinic, no less than seven died from recurrence within twelve months, the grounds on which some have acceded to this operation, even a limited field, are inconsistent with facts, and are therefore not tenable.

(6) As the operation is in many respects more dangerous than the disease for which it is undertaken, and as the majority of patients afflicted with uterine cancer would live longer without than with it, it is not a safe or useful operation, and as such is unjustifiable.

(7) On several occasions during the past twenty years, and more particularly in a paper read before this Society a few years ago, ample and convincing proof, clinical and statistical, was presented, as to the claim and unique characteristics of the galvano-cautery in the treatment of uterine cancer, and further observation has been more than confirmatory of the opinions then advanced.

(8) Amputation of a cancerous cervix by the cautery-knife is free from danger, a safeguard against all infection — traumatic or septic — and, what is of still greater importance, it is destructive to latent cancer-cell proliferation in tissues far beyond the line of incision; hence much more is promised in the operation than the mere removal of the part or parts more actively involved in the work of destruction.

(9) Any method of operating for which advantages so vital and so far-reaching can be claimed and established, and which thus distinguishes it from all others, renders its adoption on the part of those who undertake to operate for cancer of the uterus, no less than a moral obligation.

(*To be continued.*)

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MASSACHUSETTS MEDICAL SOCIETY.
SECTION IN OBSTETRICS AND GYNECOLOGY.

GEORGE HAVEN, M.D., SECRETARY.

MEETING of February 10, 1892.

DR. MALCOLM STORER read a paper on

THE RADICAL TREATMENT IN CERTAIN CASES OF GRAVE, ACCIDENTAL, CONCEALED HÆMORRHAGE.[1]

DR. S. J. MIXTER: A paper concerning the method and some of the indications for the performance of the so-called "Porro's operation" was, I think, of especial interest when read in Boston by Dr. Storer. We should all remember that this operation was first performed in this city and by the father of the reader of this paper, Dr. H. R. Storer, and that the operation is really "Storer's" and not "Porro's." The bold and thoroughly logical operation of Storer was not again attempted until Porro, seven years later, by performing it with success gave it a new impetus and his name.

The questions relating to the indications for this or other operations where the abdomen and uterus are opened to deliver the child, I leave to the other members of the Society present to-night, though on one or two points I wish later to express what may perhaps be my personal feelings, and which may not be in accord with the teachings of obstetricians to-day. In seven years I have had charge of three women in labor, two of these when no other doctor could be reached, and the third I delivered by the operation under consideration to-night. Therefore, my opinion on obstetrical subjects is of little value. My operation in 1888 was the first successful "Porro" in the United States (that is saving mother and child).[2] I suppose that is the reason of my being invited to speak on this subject to-night.

As the reader has said, the operation can be very quickly and generally easily performed; and there is, or should be, less shock than from the longer operations. There is no danger of hæmorrhage, and the chance of sepsis must be less in most cases. It can be done at a moment's notice, and requires no special instruments. The contents of a small pocket-case, a piece of stout cord that has been boiled a short time, and a steel knitting-needle or two, or a piece of stout wire, would be amply sufficient in an emergency.

I wish now to say what my feeling is in the choice of operations as between "Porro's" and the modern Cæsarian section, or "Sänger's." It is true that where the uterus or ovaries or both are not removed, the woman may again become pregnant, and by going through the same operation have another living child. This is certainly better than repeated abortions or craniotomies; and, in case the woman wishes the more conservative operation, she should have it. If, however, it is left for the surgeon to decide, it being understood that a living child can never be born in the natural manner. my firm conviction is, though I know I am in the minority, that the only square thing to do for the woman is to not only give her the best chance for immediate recovery, but to render a subsequent pregnancy impossible. This may, of course, be done by removing the ovaries and sewing up the uterine wound; but I would rather take the chances of the short and simple "Porro" than the longer operation.

It has been suggested, that, in the case I reported, it was unnecesssry to have removed the uterus, and that it is even possible that the fibroid in the pelvis might have been drawn up by the contractions of the uterus and thus allowed the child to be born in the usual manner. I can only say that under the same circumstances I should do what I did then, as I see no reason for leaving large multiple and adherent fibromata and risking one or both lives. Both mother and child are alive and well to-day; and at the time of the operation there was, as will be seen by reading my report of the case, only one reported case in this country where both had been saved by operation.

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[1] See page 377 of the Journal.

[2] Boston Medical and Surgical Journal, November 8, 1888.

This result is, to my mind, much more to be desired than that in the case of a patient that I heard from some time ago, who had had one Cæsarian operation performed, a contracted pelvis rendering the passage of a living child impossible, and who has since had seven or nine abortions performed. She sent to me to know if I would do a "Porro" in case she should again become pregnant. In these days when so many women are castrated for less cause, I should consider it my duty to the patient at the first operation, to render subsequent pregnancy an impossibility, and should choose between a "Porro" and a Sänger with removal of the ovaries, according to the condition of the patient.

Dr. C. M. Green: I remember that the father of the reader had performed the operation here, but what I had in mind was the more recent operations. Dr. Mixter's operation is the first successful Porro performed in this country, as far as I know. I think it would be well, having listened to the surgical side of the question, to turn to the subject of the paper, and discuss whether or not the operation is justifiable for hæmorrhage.

Dr. Sinclair: I wish to say that the experience of any one man must be very limited upon this subject. It has happened to me twice in the course of my life, but fortunately they were both multipara and recovered without interference, except in the second case where I hastened the labor by my hand, but the number of clots that came from the uterus after the expulsion of the placenta was simply enormous. How the woman could have stood such a loss of blood, I cannot realize. In both cases the child was born dead. In the first case the placenta was separated. In the second case the extravasation of blood was confined to the centre of the placenta, and that one was occasioned by a bump received while riding over a rough road when eight months' pregnant.

Dr. Green: In the second case did you deliver the woman, or did the woman deliver herself?

Dr. Sinclair: I only expedited delivery. The woman delivered herself.

Dr. Edw. Reynolds: I have seen but one of these cases, but that case leads me to speak of a point which I consider essential, made by Dr. Coe, in Washington, which is, that concealed hæmorrhage before labor or during the first stage of labor, with an undilated os, is an entirely different thing from such an occurrence after the os is dilated. Hæmorrhage after the passages are ready for delivery is a simple thing. Concealed hæmorrhage before the os is dilated, and especially before labor-pains are present, is a condition from which a woman has never been saved at any time. It is very important, as leaving us to determine what course to pursue.

This paper opens an entirely new field of thought to me, and one which I think, as the reader says, is new to the world. I confess that I should feel entirely unwilling to discuss the indications for or against abdominal interference at the outset of this idea. It is impossible to form a judgment of any value at first. We should bear this in mind for the reason that no man who sees this accident for the first time will consider it.

I think there is something to be said on the side of Cæsarian section. Again, I think that the statistics which are usually quoted of the two operations are too broadly drawn. I have been led to look up the literature, and also from Dr. Harris's address on the subject. Very few Porro operations have been done primarily, so that the statistics of primary operations are not before us. I think the preponderance of evidence is in favor of Sänger's section. It can be done by removing the ovaries, by tying the tubes. The removal of the ovaries complicates the operation very little. The tying of the tubes has a distinct objection since inflammatory trouble is sure to occur in those tubes. The invagination of the last quarter of the tubes occupies but a few moments, and is, I believe, wholly unobjectionable.

Dr. Green: In regards to the propriety of performing Porro's operation in such a case, I think, as Dr. Reynolds has said, that we should not be led to expressing an opinion without more mature consideration. It has never been my misfortune to have such a case of hæmorrhage; but if I had such a case, I should spend considerable effort in trying to dilate the cervix, before thinking of Porro's operation. I may be unduly confident of our ability to dilate the cervix rapidly, but despite the fact that I have seen many cases requiring dilatation in the seventh, eighth, and ninth months, I have failed to dilate but one cervix.

BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

H. C. BALDWIN, M.D., SECRETARY.

Meeting of March 17, 1892.

Dr. J. A. Jeffries, read a paper on

EYE PARALYSES.[1]

Dr. G. L. Walton spoke of a case of paralysis of the sixth nerve from pressure downwards, in which case there were hemianopsia (right), severe headache, vomiting, word blindness, aphasia of the sixth (left). The patient finally kept the left eye closed on account of diplopia. The patient was operated on. The dura mater was tense, and the brain bulged out on cutting through the membrane. There was no tumor, but diffuse disease of the brain. On removing the pressure, paralysis of the sixth disappeared. At first the speaker thought the paralysis of the sixth was due to syphilis, but it proved to be due to pressure on the long course of the nerve.

Dr. Folsom spoke of a case of paralysis of the sixth, probably of tubercular origin. The patient was a boy, who struck his head while coasting, and was unconscious for a short time. He went to school for two weeks after the accident; then had headache, saw double on a horizontal plane; then had complete paralysis of the left sixth. All the other symptoms have now disappeared except paralysis. Such paralyses are common in syphilis.

Dr. Webber had been interested in cases of epilepsy where there was conjugate deviation of the head and eyes to one side, but he had never seen any autopsies in these cases. He spoke of a man who had had syphilis and could not move his right eye outwards for a few weeks, and then the paralysis shifted to the left eye. With both eyes open, the patient had vertigo, but this has disappeared under treatment. He thought that the third and sixth nerves were shown to have some connection, by autopsies.

Dr. Putnam had seen cases where there was no syphilis and complete paralysis of the sixth, which recovered without syphilitic treatment. Such cases he considered rheumatic.

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[1] See page 373 of the Journal.

Dr. Prince said that ophthalmoplegia externa was considered by the oculists as due to nuclear disease, while neurologists thought that it might be peripheral.

Dr. Walton cited a case of ophthalmoplegia externa which he saw in a case of multiple neuritis, showing it to be of peripheral origin.

Dr. Knapp spoke of a case of rheumatic paralysis, where the patient had diplopia. Could not bear iodide, had had rhematism, recovered completely

In reply to Dr. Webber, Dr. Jeffries said that he thought the connection between the third and sixth nerves had not been satisfactorily shown by autopsies.

In reply to Dr. Folsom, Dr. Jeffries said that he did not know how non-syphilitic transient paralyses were classed, and there were no autopsies in these cases.

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Recent Literature.

Epitome of Mental Diseases. With the Present Methods of Certification of the Insane and the Existing Regulations as to "Single Patients." For Practitioners and Students. By James Shaw, M.D., Qu. Univ., Ireland, etc. New York: E. B. Treat. 1892. pp. 345.

This book is a compendium on insanity, the bulk of which is compiled from the writings of Spitzka, Clouston, Bucknill and Tuke, Bra, Krafft-Ebing and Griesinger, the small amount of original matter it contains contributing nothing new to the subject. The extracts made use of are often brief and fragmentary, and no settled classification of the many given is made use of by the author. These defects can hardly fail to confuse and perplex any reader who is not already quite well read and experienced in the subject. In the chapter on diagnosis the various forms of insanity are differentiated according to the patient's ability to answer questions wholly, in part, or not at all. The result is for the most part a distracting array of diseases for the "student and practitioner" to choose from under each heading. The "Index of Symptoms," which gives the innumerable manifestations of insanity, great and small, in alphabetical order, with the mental disease in which each occurs, is open to the same objection, as well as being incomplete almost to absurdity in some instances; for example, "Temper unequal. — Simple depressive syphilitic insanity." Wildness and intractability. — In epileptic idiocy. The book is also handicapped in usefulness by appearing close upon the heels of Tuke's larger, more complete, and in every way satisfactory dictionary, a work on the same lines. Could the author have given us his own views and experience in a methodical textbook on the subject, the profession would, we are inclined to think, have profited more than by the volume presented.

The Law Concerning Female Inebriates in New York. — The last New York Legislature at the close of the session passed a law giving judges the power to commit women, if confirmed drunkards or addicted to the excessive use of a narcotic drug, to a new private institution erected on the Hudson for the purpose.

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ON THE TREATMENT OF PLACENTA PRÆVIA.

The subject of the treatment of placenta prævia came up before the First International Congress of Gynecology and Obstetrics at the recent meeting in Brussels (September 14 to 17, 1892), and an interesting and suggestive paper was read by Dr. Berry Hart, referee.

He began by cautioning against forcible attempt at delivery before the cervix is well dilated. Every attempt made to introduce the hand through the cervix in order to detach the placenta in totality or to extract the infant, is made at the risk of lacerating or contusing the womb. The extraction of the infant by the cervix, even when it is not necessary to introduce the hand into the uterus, is a procedure which gives but little "chance of life to the child and is not free from danger to the mother; hence a very important indication is to act without violence and precipitation."

To arrest the hæmorrhage, the complete detachment of the placenta is not indispensable.

Since the dilatation of the cervical portion of the uterus is necessary to give passage to the child and since in the first period of this dilatation, hæmorrhage may supervene, the indication is to hasten this period as much as possible by Barnes' dilators: if labor is on the point of commencing, rupture of the membranes may be sufficient to bring on uterine contractions and stop the hæmorrhage. The temporary use of the tampon may be required; the tamponading should be done thoroughly with iodoform gauze. At the critical moment when the total detachment of the placenta is dangerous or impracticable, it may be possible by the introduction of the index finger through the cervix, to separate the portion of the placenta which is adherent to the inferior segment of the uterus. By this procedure, the internal orifice is freed from adhesions which hinders its regular dilatation, and the contraction of this segment of the uterus is facilitated, which favors the arrest of the hæmorrhage. Dr. Hart emphasized the importance of the Barnes' dilators as a safe and ready means for obtaining prompt and thorough dilatation of the cervix. When such dilatation is effected, it is a question between delivery by the forceps, version or embryotomy. When the head presents, the forceps should be used, as this method is much safer for the child and even for the mother than version. What is, in fact, peculiar to the teachings of this writer is his general condemnation of version, which he would reserve for special occasions. "It must," he says, "be admitted that when we have recourse to version in a head presentation, we go completely contrary to the means indicated by nature. I am aware that it is claimed that by this procedure we facilitate dilatation of the cervix by exercising tractions on the legs and body of the infant, and that, on the other hand, the head, or other fœtal part, by its contact with the inferior segment of the uterus, makes salutary pressure on the surface which is the seat of the hæmorrhage. To this I would reply that both these ends are better subserved, first, by the hydrostatic dilator and then by the forceps; of course, version may still be resorted to if the forceps fails. Version demands more force, which does harm to the patient, and diminishes the chances of life to the child."

Dr. Hart claims very gratifying results from this method, having saved more mothers and more children than formerly when he relied on the Braxton-Hicks bi-manual method. Whole hecatombs of children have, he says, been sacrificed to false theories, but placenta prævia, managed on scientific principles, is destined to be increasingly less fatal to infants. His own experience since he has resorted to this method, has enabled him to record 33% of children saved.

We should remember that in most cases which came before the physician's notice, gestation is not at full term, and the uterus is but imperfectly developed. Such uteri do not always dilate readily, and a forced accouchement generally entails contusions and even lacerations of the organ. The child to be extracted is, it is true, very diminutive, but the danger is still none the less real. The advocate of forced accouchement claim that by instant delivery the chances of puerperal infection are lessened, but this may well be doubted, when it is remembered that the most skilful accoucheur finds it difficult to avoid contusions and lacerations, which open the door to contagion. The only way to diminish the danger of such lesions is to avoid all violence in the dilatation of the os and cervix, and in the extraction of the fœtus, two things very difficult to realize when version is resorted to from the very first. This danger can only be reduced to the minimum when the accoucheur effects the dilatation *with gentleness* by Barnes' dilators, and delivers the child by means of the forceps if the head presents.

Such are the principal points presented in this paper which may lead obstetricians to ask whether the methods on which they have relied in this dangerous accident gestation are really the best methods, and whether, *in some cases*, the mode of practice which Dr. Hart has pointed out may not give both mother and child a better chance. Of course, it must be admitted that oftentimes the physician is called to a case where the flowing is terrific and life is almost extinct; there can be no thought of exciting uterine contraction, or even of effecting slow dilatation by means of water-bags; the os is dilated or dilatable; there is but one urgent indication, and that is to deliver as soon as possible, and then if the hæmorrhage continues to endeavor by hot intra-uterine injections to arrest it. In such a case as we have imagined (and it is not a mere fancy picture but is a part of the objective experience of many of the readers of the Journal), the presentation is still high, and forceps delivery impracticable. What better can be done than boldly to insert the hand into the uterus, push to one side the placenta, if it be in the way, find the feet, and perform version? When once version is effected, and body of the child is brought down into the passages, by its pressure on the bleeding vessel it will stop the hæmorrhage, and the accoucheur can then take his time about completing the delivery, It is doubtless well to use the combined external and internal mode of version, when this is possible. This method, as Hicks was the first to show, does not require that the whole hand should be introduced into the womb, in the case of only partially dilated cervix, but only two fingers, the fœtus being so manipulated by one hand over the mother's abdomen as to be brought within the control of the accoucheur's other hand, Lomer[1] endorses the Hicks method with additions of his own, and insists especially on the necessity of the utmost slowness and gentleness in nicking the tractions. Slow delivery prevents contusion and laceration of the cervix and perineum.

In the case of great rigidity of the os and cervix, Lomer favors tamponading as a preparatory measure, which if done thoroughly will effectually control hæmorrhage and give the os time to dilate. It will be seen from the above abstract that Hart also favors the tampon as an occasional expedient, while, as a rule, preferring the hydrostatic dilator.

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THE HUMAN EYE AS AFFECTED BY CIVILIZATION.

In an article on this subject, written for the benefit of the non-medical public, Dr. St. John Roosa[2] refers to the effect of printed books, newspapers, gas, electricity, dark offices, and the many other artificial surroundings of our modern life, with its different and increased demands on the human eye. Examination of Egyptian mummies shows that there has been no change in the anatomical formation of the human ear in 4,000 years, and it is safe to say that the human eye has not changed in any essential of anatomical form during this time.

It may be said of the eye as of the brain, that it is much more likely to be abused in the occupations of a large city than on a farm or in country towns. But if the nineteenth-century civilization has brought dangers to the sight, it has also seen the invention of instruments which enable us to determine and increase its power for work and find out its diseases, and also to decide as to the existence of serious disease elsewhere. when there are few other symptoms that point to it. The diagnosis of Bright's disease by an ophthalmoscopic examination is an example. One of the local mysteries of the eye cleared up by the use of the ophthalmoscope, is that form of poor sight known as night-blindness, the alterations in structure which produce it never having been known before.

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[1] American Journal of Obstetrics, December, 1884.
[2] Cosmopolitan, October, 1892.

Before the invention of the ophthalmoscope by Helmholz it was known that the pupil looked at in a certain way appeared luminous. Strange to say, Professor Helmholz has left this, and now interests himself in other departments of physiology. He said lately, at a congress of ophthalmologists, that he no longer felt familiar enough with certain questions of which he was once easily chief, to discuss them. The ophthalmoscope and ophthalmometer, both invented by Helmholz, have now by a long series of improvements become wonderful instruments of precision. Many eyes are now enabled to do their fair share of work which were formerly condemned to employment not involving the use of the eyes on fine objects. Something positive was known of short-sightedness, requiring the use of glasses, before the invention of the ophthalmoscope.

Although myopia has greatly increased in our time, as a result of our occupations, we have no reliable information as to whether such a condition exists among our barbarous races or did exist among the barbaric races of ancient times.

Human testimony, even that about one's self, as to the power of human vision, is often very unreliable. Patients who think they are very well, sometimes find on consulting an oculist, that they only have a vision of $\frac{20}{70}$ or $\frac{20}{100}$. There is no doubt that myopias exist among ignorant people who have never used their eyes in reading fine type. And yet myopia is generally assumed to be a disease produced by insufficient illumination and excessive use of the eye. It is not true, as is popularly supposed, that a myopic eye is a very strong one, and that it changes in old age so that glasses are not needed, although a short-sighted person can see very small objects better than a person with so-called normal vision, and the eye suffers less after use upon such objects. Myopia has reached its widest development in Germany, although the Teuton is finding his rival in the American, whatever may be the condition in England. Myopia is increasing in the large towns and villages of this country. But civilization corrects its own errors, and modern investigations have fully exposed the causes and dangers as well as the remedy for this affection.

Astigmatism is probably as old as the race, but brought into great prominence by the severe demands on the eyes made by our civilization. In overworked people, whose nervous system is subject to great strain, even a small degree of variation will, if uncorrected, give rise to very disagreeable symptoms These optical defects have generally been discovered and corrected, even among the poorer classes of great cities. But in out-of-the-way districts many persons remain with poor sight, who could be made to see perfectly well with glasses.

In spite of the opinion of some practitioners that epilepsy and chorea and even serious conditions of the brain, as idiocy and dementia, may be caused by a want of equilibrium in the muscles that move the eyeball, the author believes that these ocular deviations do not necessarily cause grave constitutional conditions. The author believes that it is often by no means difficult to trace an ocular headache to its source by some sensation of discomfort or pain in the eye itself.

The discovery of cocaine has been of untold benefit for operations on the eye. What ether and chloroform are to general surgery, cocaine is to ophthalmic surgery. The nineteenth century and its civilization have done nothing to change the anatomical characteristics or to alter the functions of the human eye, but the demands on it have been much increased, and its defects, as old as the race, having been ascertained under these demands, have been remedied. "The last half century has put our knowledge of the optical defects and diseases of the eye, and our means for their relief, on as high a plane as that attained in any of the so-called exact sciences — for example, those of architecture or engineering."

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THE MEDICAL CAREER AND HAPPINESS IN LIFE.

Among the usual introductory addresses at the opening of the British Medical Schools, that of Dr. W. H. Broadbent at Owens College, Manchester, discusses the intellectual interest of the study and practice of medicine, and finds therein the true source of happiness in the pursuit of the medical career. It is the same thought as that followed in a previous editorial (August 11th) on "Medicine as a Liberal Profession."

Dr. Broadbent asks: What are the conditions of happiness in a man's life, and how far are these satisfied by a medical career? To a certain degree these conditions lie in the satisfaction of the ordinary wants, the enjoyment of the simpler comforts and freedom from care for the future of one's self and one's family. In this particular the medical man, though not pre-eminently fortunate, at least enjoys a considerable degree of comfort and security. Another element of happiness is the consciousness and the prospect of advancement in life, and of this the medical man enjoys a large measure. His early life is among the poor, with but little pecuniary renumeration. He is presently brought in contact with all classes of the community; he gains fees and he gains friends, and his friends are not confined to his contemporaries in age, but are of all ages and of both sexes as well as of all classes and pursuits. Then there is the consciousness of doing good, the pleasure of relieving suffering, the satisfaction of saving life, the gratitude (not always vouchsafed) of patients. But these latter are imponderables — too sacred things to be cast in the balance.

What, then, is it which, to those who are mentally and morally fitted for it and who enter it from genuine inclination, makes the medical profession the happiest career a man can choose? For such it really is. To this he answers first and foremost, the opportunity for free and continuous exercise of the intellectual faculties. With the elevation of the race have been developed intellectual appetites. There is a hunger and thirst after knowledge and a passionate desire for achievement, and the pleasure and satisfaction attending the attainment and employment of knowledge are as much higher and more durable than the gratification of the senses as mind is higher than body — as the intellectual operations are superior to sensation.

All the sciences are laid under contribution by medicine. As you master the principles of chemical structure and affinity, as you come to understand the relation between chemical action and the absorption or evolution of energy, thermal, electrical, and nervous, your ideas are enlarged, your imagination is excited, and the intellectual interest is awakened, which is gratified at each further step you take, but never satisfied.

A step further, and the interest of your work increases. Pathology deals with the deviations from normal physiology, and with the results of such deviations on the structures and organs of the body, that is, morbid anatomy. In disease the same processes are at work as in health; there are no new laws, but only new conditions. From symptoms we read backwards to causes which have disturbed the harmony of the economy and onwards to effects which result in the readjustment of the organism to its surroundings or in its ultimate destruction. What we call symptoms are not all simply the indications and effects of morbid processes to be repressed or corrected; they are frequently only stages in the reaction by which the system recovers its balance. The very business of our lives is the solution of intellectual problems of the most interesting character. On the large scale we see the working out of general laws, the causation, genesis, and spread of disease affecting populations, the influence of heredity or climate, of modes of life. We note the vindication of the moral principles of right and wrong, the slow working of God's mill which grinds exceeding small, as there are unrolled before us the effects of self-indulgence and of self-restraint.

And the profession of Medicine not only offers constantly increasing subjects of intellectual interest, it also affords continuous work, a factor which it is impossible to overestimate as an element of happiness.

As a motto for medical students, Dr. Broadbent suggests the exhortation of Professor Huxley in one of his lay sermons: "Learn what is true, in order that you may do what is right."

MEDICAL NOTES.

The Mortality in Hamburg reached the highest point in the week ending September 3d. when there were 4,168 deaths, of which 3,710 were from cholera, making a death-rate of 340.8.

Yellow Fever in Brazil. — The epidemic of yellow fever which for several months has existed at Santos shows no signs of abating. 350 vessels are waiting to discharge their cargos without any immediate prospect of being able to do so.

Women Medical Students. — The faculty of the Columbian University in Washington have withdrawn the privileges which they have previously offered to women in the medical department. The reason assigned is that the presence of women as students kept men away, and they had no desire to become a female seminary, and that the teaching of men and women together is demoralizing to both.

The Disinfection of Dejecta in the hospitals in St. Petersburg is soon to be undertaken by a new method which is strongly recommended by Professor Virchow. This method consists in the erection of huge cauldrons into which the dejecta are immediately emptied and boiled. Examination after boiling in one already erected has shown the condition of absolute sterility, so that there is not the least harm in emptying them into the water-courses.

La Revista Medico-Quirurgica. — A monthly journal under this title appeared in New York for the first time in September. It is written wholly in Spanish and is the authorized Spanish organ of the Pan-American Congress. It is edited by Drs. S. E. Milliken and P. J. Salicrup with a collaboration of several well-known physicians of the United States The authors are Americans who, it is presumed, write their own articles in English and get them translated into Spanish. The titles of the authors are given at length.

Doctors of Dentistry in Germany. — Several American dentists in Germany have been fined by the courts for using the title "Doctor." The only titles of "Doctor" recognized in the Empire are "Doctor of Medicine," "Doctor of Law," "Doctor of Theology" and "Doctor of Philosophy." It has been held by the courts that any one practising as dentist and using the title "Doctor," although he may possess such a diploma as Doctor of Theology, implies that he is a Doctor of Medicine, thus misleading the public. This will prevent those dentists holding the D.D.S. or D.M.D. diplomas calling themselves "Doctor."

Results of a too Speedy Reduction of Hernia. — A story showing one of the disadvantages of a hernia, especially if the victim be also absent-minded, is reported by the *Medical Press.* A well-known German professor who suffered from both of these misfortunes was walking along the Avenue de l'Opéra in Paris when the hernia suddenly came down, causing him much discomfort. Having found by experience that it should be attended to at once he loosened his nether garments and immediately began taxis, but before he had succeeded in reducing his rupture he was seized by two gens d'armes, and taken to the police station, on a charge of indecency. He was, however, finally released by a special order of the prefect of police.

NEW ENGLAND.

The Charles River in the neighborhood of Waltham, Watertown and Newton has been the cause of much complaint for some time. The Boards of Health of the three towns have appointed a committee consisting of one member of each Board to consider the best means of remedying the nuisance.

The Yale Medical School has an entering class of forty, an increase of five over last year. The total number of students in about seventy-five. A new building is soon to be erected for the departments of chemistry and physiology.

Hartford County Medical Association. — The centennial of the organization of this society was celebrated on September 26th. Many speeches were delivered by members and by medical and non-medical guests, followed by a reception and dinner.

A City Medical Practice Ordinance. — Connecticut is one of the half-dozen States which has not as yet passed a law limiting the practise of medicine. The Common Council of Bridgeport appears to have thought that if quacks were to be allowed in the State they would at least try to keep them out of the city, and consequently passed an ordinance to the effect "that no person shall practise medicine or surgery in any of its branches, for pay, in the City of Bridgeport, who is not a person of good, moral character, and who does not possess the rudiments of a medical education, or who for any reason would be likely in such capacity, to endanger public health. Every person who shall practise medicine or surgery in any of its branches in the City of Bridgeport, shall within one month of the time commencing such practice register under oath with the Clerk of the Board of Health, his or her name, with the date and place of graduation, and if not a graduate of a medical college shall be registered as not being a graduate, and the locality where each person has previously been engaged in medical or surgical practice. And all persons so practising at the date of the passage of this act shall cause his or her name to be so registered within one month after the passage of this ordinance. Any person neglecting to comply with this provision shall be punished with a fine of not less than fifty dollars."

NEW YORK.

Mortality for the Week.—The number of deaths reported during the week ending October 15th was 738. This is an increase of 70 over the previous week, and the increased mortality was no doubt due in part at least to the effects of the Columbus Celebration, when the city was so crowded with strangers. The number of deaths during the week ending October 8th was 659, which the lowest mortality recorded for nearly two years, and represents an annual death-rate of only 18.64 per thousand of the estimated population. This remarkable healthfulness of the city was probably due to a considerable extent to the sanitary percautions, public and private, which were taken in view of a possible outbreak of cholera.

A Case of Small-Pox. — A very bad nest of small-pox was discovered in Brooklyn on October 15th. No less than nine well-developed cases were found by the sanitary authorities in a single house on Adelphi Street. There were three families living in the dwelling and members of all of them were affected with the disease. All the patients were promptly removed to the hospital for contagious diseases at Flatbush, and every percaution taken to prevent a further spread of the pest.

Miscellany.

MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

A stated meeting was held at the Medical Library, Boston, on Wednesday, October 5, 1892. The meeting was called to order at 11 a. m., the President, Dr. James C. White, in the chair. Eighty Councillors were present.

The following were appointed delegates to other State Medical Societies:

Vermont.— Dr. J. B. Field, of Lowell; Dr. L. D. Woodbridge, of Williamstown. *New York.*— Dr. F. K. Paddock, of Pittsfield; Dr. F. C. Shattuck, of Boston. *New York State Medical Association.*— Dr. H. P. Walcott, of Cambridge; Dr. G. W. Davis, of Holyoke.

In accordance with the recommendation of the Committee on Membership the following, nominated at the previous meeting, was elected to honorary membership in the Society: George Lincoln Goodale, A.M., M.D., Fisher Professor of Natural History in Harvard University.

The committee to whom was referred at the last meeting a petition for a change in the boundary line between the Norfolk and Suffolk Districts, reported through Dr. Vaughan, and recommended that the following boundary line be substituted for that previously adopted in 1876:

Beginning at Dorchester Bay, opposite the easterly end of Preble Street, the line shall run in a general northwesterly direction through the middle of Preble and Swett Streets to Northampton Street; then by the middle of Northampton Street to Washington Street; then by the middle of Washington Street to Camden Street; then by the middle of Camden and Gainsboro' Streets to Huntington Avenue; then by the middle of Huntington Avenue to the Huntington Avenue entrance of the Back Bay Park; then across the Park westerly to the water-way known as Muddy Brook; then by Muddy Brook to St. Mary's Street; then by the middle of St. Mary's Street to the Charles River.

The recommendation of the committee was adopted.

The committee appointed at the last meeting concerning Fees for the Commitment of the Insane, reported through Dr. Folsom that it is inexpedient to ask for any further legislation in regard to the commitment of the insane. The report of the committee was adopted.

The committee to whom were referred at the last meeting a letter of the Secretary-General of the Pan-American Medical Congress and an accompanying circular of information, reported through Dr. Whittier that it is inexpedient for the Society to take action thereon. It was voted to adopt the recommendation of the committee.

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Correspondence.

[From advance sheets stolen by a detective reporter for the daily press.]

SURGERY IN THE FUTURE.

Address of Professor Paul Pry, Jr., to the Medical Society at the Annual Meeting, June 9, 1998.

Gentlemen: — I propose to bring to your notice to-day a remarkable result of the application of the principles of a scientific physiology to the development of the human race. But first I ask your indulgence for some brief introductory remarks.

You have all read that, in the latter portion of the nineteenth century, at, and following the introduction of antiseptic and aseptic methods, the surgeons of that date exhibited great boldness and no little skill in opening the greater cavities of the body to enable them to treat directly the conditions of the internal organs.

And many here present must have personal recollection of the fact, that, at a later date, my honored sire, noticing that his cures by abdominal section necessitated the reopening of the cavities at frequent intervals, conceived the brilliant idea of closing the wound of the original operation by buttons and buttonholes — thus affording the professional attendant an opportunity at any future date to inspect the condition of the organs without the delay and trouble of parietal section.

It is hard for us to-day to realize the boldness required for devising and executing what is to us an every-day matter. As an instance of his accurate judgment, I point with pride to the fact that no better substitute has been found for the decalcified bone buttons he used in his first case — and if the carbolized cat-gut loops which he then employed have been supplanted by the buttonholes worked by my patent buttonhole machine, such a trifling modified technique should in no way be allowed to detract from the credit due to him for this great advance in surgical science.

Nearly forty per cent. of our population, who can at present walk into their doctor's office, and by simply unbuttoning their bellies can get his advice upon the state of their livers or bowels, attest the immense value of the procedure due to his wise foresight and profound ability.

One remark of this able man not long before his lamentable decease was: "My son, in making a button-up belly I have but restored an original feature of the race. The umbilicus, that persists still upon the human abdomen, is still known to the vulgar as 'belly-button,' and is evidently a survival of the earlier row. Cannot this useful condition be restored by breeding and natural selection?"

Acting upon this hint I have long hoped to be able to follow up the investigation which he suggested.

Early this year, a young couple, about to be married, and who both required the removal of their appendices vermiformes, came to my clinic and I performed laparotomy as usual. The cost of the operations proved a serious obstacle to their projected marriage, and gave me an unexpected opportunity. As the result of my proposals it was agreed between us that they should be married by an antiseptic clergyman and take up their residence in my suite of sterilized glass chambers — both to remain until conception was assured. After that was beyond doubt, the husband was allowed to go out and in under the strictest antiseptic precautions. Every possible care was taken to protect the lady from disturbing influences, and she remained in strict seclusion until confined.

A few days ago I had the pleasure of delivering her of a healthy, well-grown infant — female — which, to my great delight, presented in its anterior median line the artificially induced abdominal condition of the parents. From chin to labia majora a row of buttons and buttonholes extended. There was nothing remarkable about the labor except the fact that the infant was buttoned on to the placenta instead of being connected by a cord as usual. But as I fortunately had my belly-buttoner in my pocket I had but little trouble from this source.

I am now about to present both the parents and child for your inspection; but, ere I do so, I must state one most wonderful instance of the strength of maternal impressions. Carefully as I thought I had secluded the mother from external influences, I made one serious omission. Her meals were served by a thoroughly sterilized page, who wore the usual adornment of his class. To my astonishment and regret, the buttons of the infant, instead of being animal tissue, are of the shiniest brass. I will now, with your permission, introduce my friends, Mr. and Mrs. Grimes, and their infant.

Note 1. — President Paul Pry, Sen., so affectionately spoken of by his eminent son in the above address, died at an advanced age some years since. The cause of death was heart-failure following an operation to replace his cirrhotic liver with one from a healthy pig. Weak as he was, he detected the fatal error of limiting the transfer to a single organ; and, as he died, grunted, "They should have gone the 'whole hog or none.'"

Note 2. — Mr. Grimes, the father of the interesting infant whose genesis is stated above, is a lineal descendant of the Grimes who is the subject of a well-known poem of Albert G. Greene.

C. F. C.

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ANOTHER INVESTIGATION OF CHLOROFORM.

Philadelphia, Oct. 11, 1892.

Mr. Editor: — Having been asked to undertake a research at the expense of the Government of his Highness, the Nyzam of Hyderabad, India, with the object of reconciling, if possible, the conflicting views concerning the action of chloroform, I am anxious to receive from American physicians and surgeons records of any cases in which it was noticed that the heart stopped beating *before* respiration, or respiration stopped *before* the heart.

Notes concerning any such cases will be considered strictly confidential, provided the reporter states his desire that his name shall not be mentioned in the report of the research when it is finished. Otherwise due credit will be given for any information received.

Very truly yours,
H. A. Hare, M.D.
Jefferson Medical College, Philadelphia.

METEOROLOGICAL RECORD,

For the week ending October 8, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 2	30.21	48	57	39	56	44	50	N.W.	N.W.	15	9	C.	C.	
M.. 3	29.94	49	58	40	55	61	58	N.W.	S.W.	3	15	F.	O.	
T.. 4	29.52	60	65	55	78	74	76	W.	N.W.	13	5	O.	O.	.12
W. 5	29.57	48	51	15	100	65	82	N.	N.W.	12	18	R.	O.	1.72
T.. 6	29.77	46	56	38	63	55	60	W.	W.	20	12	C.	C.	
F.. 7	29.83	58	69	47	57	67	62	S.W.	S.W.	12	20	O.	O.	
S.. 8	29.77	64	73	55	84	87	86	S.W.	S.W.	11	8	O.	C.	
☞	29.80	53	61	46	73	61	68			12	12			.267

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 8, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,827,396	659	276	18.00	11.50	8.55	5.10	.90
Chicago	1,250,000	424	186	22.08	6.24	1.20	7.20	8.88
Philadelphia	1,092,168	361	141	18.09	14.58	4.32	9.18	2.70
Brooklyn	955,333	356	154	17.64	9.52	7.28	6.72	1.40
St. Louis	477,873	—	—	—	—	—	—	—
Boston	469,645	180	60	12.32	13.47	3.16	2.80	3.92
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	305,000	114	44	16.48	10.56	6.16	10.56	.88
Cleveland	281,353	89	43	34.72	8.96	7.84	14.96	5.60
Pittsburg	255,000	—	—	—	—	—	—	—
Milwaukee	234,440	—	—	—	—	—	—	—
Washington	230,360	135	42	19.24	11.84	8.88	2.96	4.44
Nashville	87,754	27	8	3.70	18.50	—	—	—
Charleston	56,048	32	15	15.65	15.65	9.39	—	3.13
Portland	40,000	8	4	12 50	—	12.50	—	—
Worcester	92,313	24	10	12.48	12.48	8.32	—	4.16
Lowell	82,455	39	19	10.24	10.24	7.68	—	—
Fall River	82,128	—	—	—	—	—	—	—
Cambridge	74,644	25	11	24.00	4 00	16.00	4.00	4.00
Lynn	60,809	16	3	6.25	31.25	6.25	—	—
Springfield	47,052	17	5	17.64	5.88	—	5.88	11.76
Lawrence	45,910	20	5	25.00	—	5.00	—	5.00
New Bedford	44,947	19	8	26.30	21 04	15 78	—	10.52
Holyoke	40,099	—	—	—	—	—	—	—
Brockton	32,783	9	2	—	—	—	—	—
Salem	31,495	9	2	11.11	11.11	—	—	11.11
Haverhill	30,065	11	4	9.09	27.27	—	9.09	—
Chelsea	29,479	11	4	9.09	18.18	—	—	9.09
Malden	27,252	6	2	—	—	—	—	—
Newton	26,498	9	2	11.11	11.11	11.11	—	—
Taunton	26,464	14	0	7.14	—	—	—	—
Gloucester	26,008	7	2	—	—	—	—	—
Fitchburg	25,444	5	2	20.00	20.00	—	—	20.00
Waltham	20,942	2	1	—	—	—	—	—
Quincy	18,669	4	1	—	25.00	—	—	—
Pittsfield	18,294	4	2	—	25.00	—	—	—
Northampton	15,684	5	1	—	20.00	—	—	—
Everett	14,745	4	3	25.00	25.00	—	—	—
Newburyport	14,031	5	0	40.00	40.00	—	40.00	—
Amesbury	13,561	6	1	—	—	—	—	—

Deaths reported 2,665: under five years of age 1,065; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 484, consumption 294, acute lung diseases 250, diphtheria and croup 165, diarrhœal diseases 155, typhoid fever 89, scarlet fever 23, cerebro-spinal meningitis 17, whooping-cough 17, malarial fever 10, measles 4, erysipelas 3, small-pox 1.

From scarlet fever Chicago 6, New York 4, Philadelphia, Brooklyn and Boston 3 each, Cleveland and Lawrence 2 each. From cerebro-spinal meningitis Chicago 7, New York 5, Philadelphia, Brooklyn, Washington, Lawrence and Taunton 1 each. From whooping cough New York 8, Chicago and Washington 3 each, Philadelphia, Cincinnati and Everett 1 each. From malarial fever Brooklyn 4, New York and Philadelphia 2 each, Nashville and Charleston 1 each. From erysipelas Chicago 2, New York 1. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending October 1st, the death-rate was 16.6. Deaths reported 3,266: acute diseases of the respiratory organs (London) 171, diarrhœa 252, diphtheria 81, measles 61, scarlet fever 57, fever 46, whooping-cough 24, small-pox (Halifax) 2.

The death-rates ranged from 7.4 in Croydon to 23.5 in Blackburn; Birmingham 15.9, Bradford 15.7, Bristol 12.1, Hull 21.9, Leeds 17.8, Leicester 12.7, Liverpool 20.3, London 15.2, Manchester 21.4, Newcastle-on-Tyne 14.6, Nottingham 17.9, Plymouth 15.8, Salford 21.8, Sheffield 20 1, Sunderland 20.8, Swansea 13.0, West Ham 19.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 8, 1892, TO OCTOBER 14, 1892.

Leave of absence for one month is granted Captain Henry P. Birmingham, assistant surgeon, U. S. A.

Leave of absence for fifteen days is granted Major Daniel G. Caldwell, surgeon, U. S. A.

By direction of the acting Secretary of War, Par. 3, S. O. 199, August 24, 1892, A. G. O., is revoked and Captain Louis M. Maus, assistant surgeon, U. S. A., is relieved from duty at Fort Apache, A. T., and will report in person without delay to the commanding officer, Whipple Barracks, Arizona, for duty at that station.

First-Lieut. Isaac P. Ware, assistant surgeon, U. S. A., is relieved from duty at Fort Logan, Col., and will proceed without delay to Fort Supply, Indian Teritory, and report in person to the commanding officer of that post for duty.

Major Robert H. White, surgeon, U. S. A., is relieved from duty at Fort Myer, Virginia, to take effect on the expiration of the leave of absence granted him, and will then proceed to report in person to the commanding officer, Jefferson Barracks, Mo., for duty.

Major Daniel G. Caldwell, surgeon, U. S. A., is relieved from duty at Jefferson Barracks, Mo , and will report in person to the commanding officer, Madison Barracks, N. Y., for duty at that post.

Captain William C. Gorgas, assistant surgeon, U. S. A., is relieved from duty at Fort Barrancas, Florida, and will report in person to the commanding officer, Fort Reno, Oklahoma Territory, for duty at that post, relieving Captain John L. Phillips, assistant surgeon. Captain Phillips on being relieved by Captain Gorgas, will report in person to the commanding officer, Fort Myer, Virginia, for duty at that post.

Captain Henry E. Turrill, assistant surgeon, U. S. A., is relieved from duty at Madison Barracks, N. Y., to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Riley, Kansas, for duty at that post, relieving Major John van R. Hoff, surgeon, U. S. A. Major Hoff, on being relieved by Captain Turrill, will report in person to the commanding officer, Fort Columbus, N. Y., relieving Major Johnson V. D. Middleton, surgeon, U. S. A. Major Middleton, on being relieved by Major Hoff, will report in person to the commanding officer of the Presidio of San Francisco, Cal., for duty at that post.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, October 24, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock p. m.

Dr. A. T. Cabot, "Cholecystotomy."

Dr. F. W. Johnson, "The Alexander-Adams Operation, Shortening the Round Ligaments."

G. G. Sears, M.D., *Secretary.*

Norfolk District Medical Society. — A stated meeting will be held at Amory Hall, 67 Warren Street, Roxbury, Tuesday, October 25th, at 2 p. m.

The examination of candidates will take place November 1st, at the office of Dr. J. C. D. Pigeon, 130 Warren Street, Roxbury.

James C. D. Pigeon, M.D., *Secretary.*

Suffolk District Medical Society. — The stated meeting will be held at 19 Boylston Place, on Saturday, October 29, 1892, at 8 p. m.

Papers: Dr. M. H. Richardson: "Acute Abdominal Symptoms demanding Immediate Operative Interference."

Dr. H. F. Vickery: "Cases of Pneumo-Thorax."

Business: Election of a committee of five to prepare a list of candidates for officers of the Society for 1893–1894.

Report of the committee on social meetings.

Supper after the meeting.

Members are requested to notify the secretary, at 188 Marlborough Street, of any error or change in address.

Notice of the meetings of each section is sent to those only who have joined that section. Any member may join a section by notifying the secretary of that section he wishes to so do. The secretaries of the sections are appointed at this meeting.

Edward N. Whittier, M.D., *President.*

James J. Minot, M.D., *Secretary.*

RECENT DEATHS.

Alexander Keiller, M.D., F.R.C.P , etc., consulting physician of diseases of women at the Royal Infirmary, Edinburgh, died September 26th, aged eighty-one years.

George E. Cole, M.D., died in Sheboygan, Wis., September 26th, aged thirty-two years. After graduating from the Harvard Medical School in 1887, he began practice in Boston, but on account of ill health gave it up two years ago, since which time he has travelled extensively. Dr. Cole was a man of unusual intellect and attainments and of excellent judgment. A great reader and lover of books he was exceedingly well informed on many subjects outside of his profession. With refined tastes he had a keen interest in art, literature and music, as well as in the current events and topics of the time. Without the incentive to work which poverty gives, he yet had a great ambition to do his life's work, and to those who knew him well seemed likely to distinguish himself in some literary pursuit as well as in his chosen profession. His family and friends are deprived of a most loyal and lovable friend and companion.

Original Articles.

EYE-PARALYSES.*

BY JOHN AMORY JEFFRIES, M.D.

((Concluded from No. 16, page 377.)

A FEW cases with autopsy have been reported in which conjugate paralysis of up or down, but not of lateral motion existed [Thomsen,[154] Nieden,[98] Hoppe,[59] Henoch,[54] Gee [42]]. Of these I have collected a few cases and have been unable to procure the records of several others. Some are cases of pure paralysis of up or down motion, others are complicated by other pareses, but nevertheless this form of conjugate paralysis was the leading factor in the case. In all of these a lesion has been found at the level of the nuclei of the third pair, and in all but Thomsen's [154] case the disease has been central. As this case is of extreme interest it is given in detail.

A man, forty-eight years old, slowly developed the following state: Viscera normal, mind feeble; pupils small, right larger than left, a trace of the light reaction in the left, but none in the right. Lids drop in rest, but can be well opened. Both eyes moved to a normal extent to the right, to the left, or down, but always with nystagmus. A marked paralysis on looking up, the eyes turning scarcely above the horizontal plane. Monocular vision the same, except that the right eye is less movable than the left. No changes in the state of the eyes to death one month later. The arms were weak and tremulous, the legs weak and slightly spastic with normal knee-jerks, but ankle clonus. The urine escaped at times, and the gait was unsteady and spastic. Autopsy revealed a moderate amount of chronic meningitis, thickening of the ependyma, a few sclerotic patches in the cord, and a partial degeneration of both the anterior and posterior roots. Also a gumma at the point of exit of the third nerves between the corpora mammillaria and the crura. In the left only a small portion of the crus and substantia nigra were affected, while on the right the growth involved the lower portion of the red nucleus, the median third of the substantia nigra, and less of the crus. The right third nerve was extensively degenerated, the left but slightly. The nuclei of the third nerve were normal.

Thomsen classes the case as one of peripheral paralysis, which to my mind is a mistake. Though the lesion was peripheral to the nuclei, it was still in the brain. The substantia nigra and red nucleus can hardly be called peripheral structures. It seems clear that the lesion involved the nerve fibres destined for the superior and inferior recti.

The only other associated motion of the eyes is that of convergence in near vision. In this motion the eyes both bring their axes to bear on the subject, and owing to its nearness the axes converge. Contraction of the pupil and accommodation are normally associated with it. Commonly the object looked at in near vision is in front of the face, and hence the contraction of the internal recti are approximately symmetrical; but even in running the eye across a page this symmetry is broken. The extent to which lateral near vision can be practiced appears to be very variable. In some cases as soon as the object is passed but a slight distance to either side of the nose, the pupil dilates, vision is poor, and the eyes become parallel, indicating the substitution of conjugate for convergent vision. In other cases the object can be carried so far to one side that one eye looks at the nose and the other is well turned out before the break comes. In all whom I have examined, even with the other eye covered, near vision does not occur when the object is far to one side.

A good many cases of paralysis of near vision have been reported, but unfortunately as yet there are no autopsies. [Cases by Barel,[3] Earles,[25] Parinau,[108, 110] Peters,[112] Stölting,[150] Gräfe,[45] Pilz,[119] De Watteville,[21] and Binsler.[7]] Some of the cases are suggestive of an hysterical state, but the mass of them point to gross disease. A centre of convergence has been assumed to exist in the anterior part of the third nuclei, but as yet nothing definite has been shown. Hensen and Völckers' [55] experiments — which do not tally with others — at the most do not demonstrate a centre: irritation at a point of crossing of fibres would produce the same effect. Thus, if, as suggested above, the fibres governing convergence come down to near the sixth nucleus ascend and cross to their nuclei, stimulation at this crossing would produce convergence. Whatever the mechanism this paralysis is just the obverse of lateral conjugate paralysis. With both eyes open, neither will turn in, but cover one and the other comes in at once, while the covered turns out to a parallel position. The case reported by Binsler [7] may be taken as a typical example. A band-man, previously well, ran to an appointment, and while blowing on the horn, suddenly lost sight of the music and had to stop playing. Careful examination showed that distant vision was good, but near vision poor and accompanied by crossed diplopia. When one eye was covered, the other turned in well for near vision, the covered eye turning out at the same time. The right pupil reacted to light, but did not to accommodation. Sense of cold less distinct on the right side than on the left. No other symptoms, no change in six months.

We have left to consider the great mass of eye paralyses, which simply affect one or more muscles and do not tend to select associated functions. In these cases we are deprived of a most valuable guide in localization, and are obliged to fall back on what other symptoms may be present, and a few isolated points of value. As is now well known, the nuclei of the fourth nerves lie just behind those of the third nerves, and practically form a unit with them. The nerves themselves, however, instead of passing down from the nuclei to the lower surface of the pons, go up and cross above the aqueduct before issuing from the brain. As a result, the crossing gives an occasion for double fourth nerve paralysis, without involvement of the other nerves; which the peripheral course of the nerves does not readily lend itself to. Though no cases of the isolated paralysis of the superior obliques have been reported, there are those of Christ's [17] and others in which this symptom has been used with good success.

There are few other factors of importance in the distribution of the paralysis. Mauthner [81] and others have held that a peripheral paralysis of the nerve trunk was complete or practically evenly distributed among the various muscles supplied by the nerve, while a paralysis due to disease in the base of the brain was commonly incomplete or irregularly distributed. Thus the intrinsic or extrinsic muscles of the eye alone might be affected or some of the muscles of the third and not

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[*] Read before the Boston Medico-Psychological Society, March 17, 1892.

the others; the reason being that while the nerve is compact and small and therefore not easily partly affected, the nuclei of the third nerves are strung along the floor of the aqueduct and the posterior part of the third ventricle in the form of several sub-nuclei. Various efforts have been made to determine the functions of these sub-nuclei, but so far little, if anything, beyond speculative results has been obtained. Anatomy shows that there is a median nucleus common to both third nerves, and that the posterior dorsal nucleus sends fibres across the râphe to the opposite third nerve. As a general axiom Mauthner's position is undoubtedly true; but, as the case of Thomsen already cited [154] and the following show, it is not absolute. Oppenheim [102] has reported two cases of brain tumor which appear properly to belong here. In the one there was paresis of the right third and sixth nerves, and of the left internal rectus from a tumor the size of an apple chiefly in the basal part of the right frontal lobe, but extending some to the left frontal lobe. In the other there was complete paralysis of right internal rectus with a tumor in the right temporal lobe which pressed upon the lower parts of the brain and third nerve. Meyer's [84] cases of multiple neuritis also bear on this point.

Another symptom of value is the variableness of the paralysis. Most true peripheral paralyses tend to run a definite course, and do not change rapidly, indeed from minute to minute, as is not uncommon in central cases. This is naturally explained by the nerves being little more than conductors, acting when isolated from the body, while the centres discharge and generate force. As a result of this it is not rare to see a slight paresis grow during the course of an examination into a paralysis, and new paresis develop. From the same cause the paresis is apt to show itself at night or evening and not in the morning.

But the above characteristics are of use in only a small part of the cases: in the majority we must rely on the general symptoms and etiology for our diagnosis. There are a number of diseases which from their importance require consideration.

In tabes, as has long been known, there is frequently a history of transitory diplopia during the prodromal period. A patient sees double on and off, just for a moment, particularly at night. The time is fixed partly by the causes already referred to, and partly by the fact that lamps afford a close test of the eyes. When the eyes are tested no signs of paralysis are detected. In another group, usually more advanced, a positive paralysis exists, an external rectus is weak, convergence is poor, or they see double in the upper stories of the houses as they pass along the street. These paralyses may in their turn pass off in a few days, give place to others, or remain fixed. The origin of these fugacious paralyses is not known, but their significance when combined with previous syphilitic infection is gravely suggestive of tabes to follow. The more fixed paralyses are apparently due to a mixture of causes, the most common being a thickening of the ependyma and an extension of the process into the nuclei and fibre tracts; another is syphilitic infiltration about the roots of the nerves before they are combined into a compact bundle. Endarteritis and its results do not apparently play an important part in these early paralyses.

The latter and general paralyses of the eye occurring in tabes are usually classed as cases of ophthalmoplegia. These are characterized by their irregular distributions, extent and persistency.

Paralysis of the eye muscles is by no means rare in cases of multiple sclerosis. Uhthoff [157] found seventeen cases in a hundred. These cases are classed as follows: Two of double sixth paralysis, four of single sixth, three of third nerve, all partial; two of lateral conjugate, one of up conjugate, three of convergence, and two of ophthalmoplegia externa. It will be noticed that the paralyses are all limited, do not tend to include the whole of the third nerve, but only affect one or two muscles, or an associated motion. They tend to be more closely limited than in tabes.

Tumors involving the corpora quadrigemina, the pineal or pituitary gland are very apt to cause paralysis in the branches of the third, together with a peculiar form of ataxia and impairment of sight, but there is nothing in the paralysis itself to indicate the nature of the lesion, except perhaps in cases of paralysis of up-and-down motion. The diagnosis of the nature of the lesion must be based on the general symptoms of tumor and the fact that other lesions are rare in this locality. In a summary of 29 cases Christ [17] found paralysis of the third nerve in 22, of the fourth in six, and of the sixth in nine cases.

The so-called cases of ophthalmoplegia externa require notice. In 1879 Hutchinson [64] called attention to a group of cases in which a progressive fairly symmetrical paralysis of the muscles of the eye-balls formed a predominant symptom among a group of scattered bulbar paralyses and general cerebral symptoms. Since then the limits of this group have been extended so as to cover all general eye paralyses apparently of central origin and thus any value which may have attached to the name has been lost. To-day a diagnosis of ophthalmoplegia is about as significant as one of stomach-ache. The twenty odd cases in which there are fairly good autopsy reports, some being monuments of labor, skill and knowledge, show a great variety of processes.

A few groups, however, can be separated out, with a fair degree of accuracy:

First, there are the cases of polio-encephalitis of Wernicke, represented by Gayet's case,[40] Wernicke's [167] three cases, and Thomsen's [155] two cases. In these cases there was but little paralysis except of the eyes, but in all mental disturbance, active delirium or somnolence, a staggering ataxic gait, tremor and the general signs of severe brain disease. At the autopsy a marked injection of the vessels, and numerous miliary hæmorrhages throughout the central gray matter of the third ventricle, aqueduct, and fourth ventricle have been the principal trouble. The process has also in some cases been diffused through the whole of this region. In others, more or less extensive degeneration of the nuclei has also been present.

In Hutchinson's case [64] the process is given as a nuclear degeneration, the same as in muscular atrophy, a pathology with which the symptoms well accorded. Some of the cases of diphtheritic paralysis also appear to partake of the same nature though peripheral trouble is present. These cases are slower than those of Wernicke's group, and lack the high degree of vascular change and acute symptoms, but seem to be allied to them by a certain amount of vascular change and the nuclear degeneration.

A second class is represented by the cases of Dubois,[28] Eisenlohr,[29] and Bristowe,[12] in which careful microscopic examination gave negative results. In character they all differ: the first was a recurrent trouble, the second like a bulbar case, while in the third there were signs of Graves' disease and much suggesting hysteria.

The rest of the cases depend on all sorts of gross lesions as Etter's [31] with myelitis, Sutter's [151] with tumor, Buzzard's [16] with syphilitic endarteritis (?), while the changes occurring in company with tabes, multiple sclerosis, and general paralysis make up the rest.

Dufour [24] has summarized the mass of reported cases of ophthalmoplegia exterior or nuclear palsies, from which the following figures are taken. Males 122, females 41. Before the fifteenth year, 23; in the next fifteen 35; and from thence to the sixty-ninth year 67 cases. Total, 125. Of 183 cases 31 had previous cerebro-spinal disease, 74 syphilis, diphtheria, diabetes, or the like, and 78 were in health.

Disease at the base of the skull often causes more or less paralysis of the eyes, as in tubercular meningitis and the so-called syphilitic meningitis. As a rule in the first any eye paralysis is of late date, and accompanied by affection of other nerves in a way suggesting a disease of the membranes, as well as by general constitutional symptoms. But this is no law, as the following case of Seitz [139] proves. A man of forty years went to bed well and woke up in the morning with a complete paralysis of the right third nerve. He later developed the full signs of tubercular meningitis from which he died. The autopsy showed nothing remarkable to explain the early eye paralysis. Syphilitic disease of the membranes is usually in reality a more or less diffuse gummatous or round cell growth, springing from the dura, and often lying between the dura and the skull. By creeping along the base of the skull and crowding the foraminæ such growths, though of small mass, can produce great mischief. It is equally true in these cases, as in others of syphilitic origin, that fever is conspicuous by its absence, while nocturnal pain and insomnia predominate. Unverricht's case [158] is a type of how a small amount of tumor can produce much mischief. In the other case the disease at the surface of the base is combined with central trouble depending on disease of the vessels or the neuroglia, as in the case carefully studied by Siemerling.[140]

Other tumors in the same region produce the same effects, but tend by pressure to cause paralyses of the body as well as optic neuritis. They also tend to a unilateral distribution, to picked paralysis of the fifth nerve, with neuralgia, as well as to involve the nerves in series as they run along the base of the skull.

There are still but few cases of recurrent paralysis of a third nerve with autopsy reported, (Richter,[120] Weiss,[163] Fiedler [35] two). In all of these, in spite of the various theories advanced, some form of local disease of the nerve has been found as tubercles, fibroma, meningitis. These cases have not been true recurrent paralysis, since there has been a certain amount of paresis between the spells. They are cases of paresis of the third nerve with recurrent exacerbations. The spells are apt to be accompanied or preceded by pain, vomiting, and confusion.

Until lately there has been more or less feeling that the eyes were exempt in cases of multiple neuritis, a position exploded by the cases of Pal,[107] as well as by that of Meyer.[84] The last case is of special interest, as it partook of the character of an ophthalmoplegia. A man forty-two years old, suffering from chronic bronchitis and bronchiectasis developed a paralysis of all the muscles of the eye-balls and the levators of the lids, but with no paralysis of the pupils. Anæsthesia of the cornea, paræsthesia of the back and limbs, and dysphagia soon developed, shortly after which death occurred. A careful microscopic examination failed to show any disease of the brain, but did demonstrate an extensive multiple neuritis. The third, fourth, and and sixth nerves were degenerated, while the facials, hyoglossals, glossopharyngeals and many spinal nerves were partially degenerated.

In disease of the orbit the paralysis may be general, according to accepted doctrine, or localized in certain branches of the third nerve; but our knowledge of the subject is very meagre. The foramina themselves offer opportunity for trouble by the growth of exostoses, while fracture is not a rare cause of trouble. With so-called rheumatic paralyses of the eye muscles, so commonly referred to, I have had little or no experience. Of some fifty or sixty cases of which I have records, there is but one which can fairly be considered as belonging to this group if it exist. This case was seen but once, and was so classed from lack of any indications. It goes without saying that the probabilities of syphilis were great. The only autopsy made in the allied facial trouble (Minkowski [90]) revealed a general degeneration of the whole nerve, and no signs of rheumatism. Had other nerves been affected, the case would have been one of multiple neuritis.

There are a few other factors which require mention from the danger of their being overlooked, as congenital imperfections of motion due to paralysis, as in the cases of conjugate paralysis reported by Græfe [46] and others, to imperfect insertion of the muscles or, to disease in the muscles and tissue of the orbit. Of the latter I have seen one case (following influenza?) in which there was much limitation of motion of the eye-balls, intense pain, deep tenderness, fever, pupils not affected, which recovered in ten days.

Ptosis, though not due to paralysis of a muscle of an eye-ball, is so closely connected with these as to require notice. The lid is raised by two muscles, the levator palpebræ supplied by the third nerve and unstriped fibres supplied by sympathetic fibres. Paralysis of the latter is not so very rare, judging from the slight dropping of the lid during a spell of hemicrania, and in tabetics. A slight congenital drooping of the upper lid is also by no means uncommon. This state is of importance chiefly from the possibility of its being mistaken for a true ptosis. The obverse condition is seen in the failure of the lid to follow the pupil down and the wide palpebral fissure of Graves' disease.

True ptosis is a different affair and is a sign of importance as a danger signal rather than as a factor in diagnosis. It is commonly present in the early stages of hemiplegia from any cause, and has much the same significance as conjugate deviation of the eyes. Some writers have endeavored to localize a special centre for the lid in the temporal region, but have failed to make out a strong case. Barring the cerebral cases, ptosis occurs with paralysis of the third nerve, from almost any cause, and is often the first sign. A patient wakes up with slight drooping of one lid, and in the course of a few hours to months the other parts supplied by the third nerve are involved. Either the nerve to the lid is more exposed to disease, or owing to its position and constant work defects in the muscle are more easily recognized. However this may be, a picked paralysis of one muscle supplied by the third nerve is very rare and quite surely will be followed by others. The danger is that the physician may overlook or slight the paralysis and thus receive a disagreeable surprise.

No reference has been made to treatment, since, with so many different processes involved it would open up a wide field. The process causing the paralysis is the object to be aimed at, not the paralysis. My own feeling is that where the cause is not apparent, an eye paralysis is very apt to be of syphilitic origin, and as such to suggest antisyphilitic treatment. There is little pathological evidence at hand, but this view seems in accord with the growing sentiment of those who have paid most attention to the subject. Unfortunately it does not follow that because an eye paralysis has a syphilitic basis, treatment will do any good.

To sum up:

(1) All cases of lateral conjugate paralysis are of central origin.

(2) When the paralysis is on the same side as other paralyses the lesion is on the opposite side of the brain. Such paralyses as a rule are transitory and follow almost any sudden lesion, and often only show themselves as a prevailing position of the eye, and not as a true paralysis or even paresis.

(3) When the paralysis is crossed with the paralyses below, the lesion is in the pons-medulla region.

The above three are equally true of spasms.

(4) A gradual development of conjugate paralysis clearly points to the region of the sixth nucleus of the same side as affected.

(5) Paralysis of up or down motions or both motions indicate disease in the region of the corpora quadrigemina, but may be due to disease in the third nerves proper, at the point of exit.

(6) Reasoning from analogy, paralysis of convergence points to disease in the central gray below the aqueduct, but as yet autopsies are lacking.

(7) Picked paralysis of parts of a third nerve strongly suggests central disease, but is not proof of it.

(8) A majority of the cases of eye paralysis occur in the syphilitic.

(9) A paralysis which changes rapidly, quickly showing fatigue, is probably central in origin.

(10) Transitory paralysis in the syphilitic is strongly suggestive of future tabes.

(11) An eye paralysis, however simple it may seem, is always a just cause for suspicion of trouble to come, and demands a prompt and thorough examination of the patient.

(12) There is no evidence that there is any form of connection between the sixth nucleus and the third, except in the cerebrum.

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A STUDY OF FLAT-FOOT, WITH SPECIAL ATTENTION TO THE DEVELOPMENT OF THE ARCH OF THE FOOT.[1]

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I. THE NORMAL FOOT.

Anatomy. — According to “Quain's Anatomy,” the mechanism of the human foot shows a system of three arches, “capable of being flattened somewhat by pressure from above, thus securing elasticity.” Two of these arches run longitudinally, and one transversely. The outer arch is formed by the os calcis articulating with the cuboid and the two outer metatarsals. As calculated by Lorenz, “the highest point of this arch is at least two centimetres from the ground in a good ligamentous preparation. It is six centimetres to the hinder bearing of the os calcis, and to the corresponding base of the head of the fifth metatarsal, eight centimetres; thus giving the arch a total length of fourteen and two-tenths centimetres. The hinder point of the outer arch [the calcaneo cuboid articulation] thus lies somewhat behind its middle.”[2] (Fig. 1.)

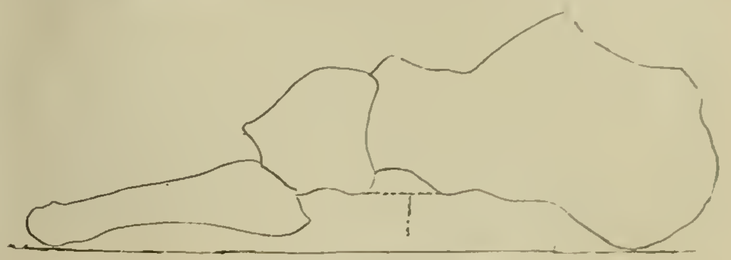

FIG. 1. (After Lorenz.)

The internal arch starts together with the external from a common base, the tuberosity of the os calcis, and is made up of the astragalus, scaphoid, three cuneiforms, and the three inner metatarsal bones. This arch, while it has much the same span as the outer, is considerably higher.

The third, or transverse arch, has hardly any existence till the middle of the tarsus is reached. It is made up of the scaphoid, three cuneiform and cuboid bones from the tarsus, and the five metatarsals.

Although all the ligaments of the foot by binding the several bones together help to maintain its arched character, certain are more directly concerned in it. The outer arch owes much of its stability to the strong inferior calcaneo cuboid ligament. This consists of two distinct layers:

(1) The so-called “long plantar ligament,” which is superficial; (2) The short plantar ligament, scarcely an inch long and lying close to the bone.

The inner arch is fastened together principally by the inferior calcaneo scaphoid ligament. The scaphoid bone and the os calcis being separated by the head of the astragalus, this ligament not only has to bind together two bones, but also to resist the direct downward pressure of the head of the astragalus which rests upon it. It arises from the sustentaculum tali of the os calcis, and is attached to the under part of the scaphoid bone. The transverse arch is maintained by the plantar ligaments.

Of the muscles, four are, from the peculiar arrangement of their tendons, of maximum importance in the maintenance of the arches of the foot. The tendon of the peronæus brevis muscle, having passed under the external malleolus, continues forward to be inserted into the base of the fifth metartarsal bone, thus spanning almost the entire external arch. The peronæus longus, keeping in company with the brevis in its course under the malleolus, passing over the external surface of the os calcis “winds around the outer border of the foot to enter the groove on the lower surface of the cuboid.”[3] From this it crosses the sole obliquely to its principal insertion on the posterior part of the first metatarsal bone. The outer and middle arches are both strengthened and bound together by this long tendon.

On the inner side of the foot there is first, the tendon of the tibialis posticus, which, after passing behind the external malleolus, runs forward to be inserted into the scaphoid bone; in its course resting directly against the inferior calcaneo scaphoid ligament, which in its turn bears against the head of the astragalus.

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[1] Being a thesis presented for graduation in the Harvard Medical School.

[2] Lorenz, p. 35.

[3] Quain, p. 252.

The tendon of the flexor longus hallucis likewise turns around the internal malleolus. From this it passes in a groove under the sustentaculum tali of the os calcis, and runs forward in the sole of the foot to its insertion in the terminal phalanges of the great toe.

Thus the arched character of the normal foot depends upon a grouping of small bones, which, with the exception of the three cuneiforms, show no special evidence in their structure of their being intended to form an arch held together by many strong ligaments, and thoroughly reinforced by the tendons of four of the muscles of the leg.

II. THE PATHOLOGICAL FOOT.

Frequency.— In the affection known in English as flat-foot, the arched character of the normal foot is, to a greater or less extent, lost by a partial dislocation of its bones. Hoffa, in the *Münchner Polyklinik*, has collected the following interesting statistics upon its frequency:[4]

Of the 17,619 surgical affections, 338, which equals .49 per cent., were flat-foot; of the 1,444 deformities, 338, which equals 23.41 per cent., were flat foot. Out of 235 cases he found 10, or 4.5 per cent., were congenital, and 225, or 95.7 per cent., acquired. Of the 225 acquired cases

11=4.9% were traumatic;
7=3.1% were paralytic;
7=3.1% were rachitic;
200=88.9% were static.

Thus it will be seen that it is the static form of acquired flat-foot that has by far the greatest surgical importance. This is the form that is commonly understood by the term "flat-foot," and over which so much difference of opinion, both as to cause and treatment, has found its way into literature. The other forms are easily recognized and have caused much less discussion.

Causation. — Unfortunately, at the very start, before leaving the domain of physiology, the first difference of opinion is reached. All are agreed that the foot normally presents two longitudinal arches; but as soon as we ask which of the two is normally the more heavily loaded, we find that authorities are not agreed. In 1883 Dr. Adolph Lorenz published a most elaborate monograph on flat-foot. In it he distinctly states his view of this subject as follows:[5] "The foot owes its arched character wholly to the outer foot arch, that is to say, to the exceptional union of the os calcis and cuboid with the metatarsals. The bones of this arch are wedge-shaped, (and) so put together as to allow very little motion." He goes on to say that the inner arch is composed of more bones less firmly held together; "the whole arch, therefore, aims at greater mobility with less firmness." and that the weight of the body does not come directly upon this arch. The subsequent German orthopædic writers, of whom Schreiber and Hoffa have published the best known works, have contented themselves with quoting Lorenz.

In direct opposition to this view is the statement made in "Quain's Anatomy," in the latest edition of which we read:[6] "The arch may be considered as double in front, with a common support behind. The internal division of the arch is that which bears the greater part of the weight of the body, and is most raised from the ground, etc."

As this question of the normal weight-bearing arch comes out still more prominently in the consideration of the pathology and treatment of flat-foot, its further consideration will be left until speaking of those subjects.

As upon almost all surgical diseases, there have been many and quite widely different opinions as to the cause of this affection, and yet a growing similarity. Stromeyer was one of the earliest writers, and he arrived at the conclusion that the first etiological factors in its production were atony of the planter aponeurosis and weakness of the muscles, especially those in the sole of the foot and the tibialis posticus in the leg.[7] But upon dissection the aponeurosis has been found thickened rather than thinned. Hüter[8] regarded it as a developmental deformity, an abnormal growth of the joint: but this is obviously incapable of explaining the cases that arise later in life; nor do we find the changes similar to his description upon dissection of the feet.

Reisman considers it as primarily an insufficiency of the plantar flexors caused by over-exertion, followed by a contracture of the extensors, and subsequently of the pronators.[9]

Henke, who next to Lorenz has probably given the most attention to this subject, says that it starts as a fatigue of the muscles of the calf and the tibialis posticus, for he believes the arched character of the foot depends first upon them. When they cease to do their work the strain falls upon the ligaments of the foot, which, when unaided, are unable to resist it. As a result of the joint changes the foot is pronated and flexed at the talo-crural joint, and, finally, the forepart of the foot is bent backwards to compensate for the flexion. He, therefore, designates the affection as "pes flexus pronatus reflexus."

Against this theory the only objection that has been urged is that it does not take sufficiently into account the part played by the muscles, bands and ligaments of the foot itself, and lays too much work upon comparatively feeble muscles. With this modification the theory is accepted by Lorenz and his followers. To use Lorenz's own words,[10] "Valgus acquisitus is that deformity of the foot which is caused by pressure, and consists of a sinking of the external portion of the arch of the foot, together with a sliding off of the internal from the external arch of the foot." This pressure to which Lorenz refers is that of the weight of the body, usually from standing; on this most authors agree. Thus to quote from some of the latest: Schreiber[11] says, "There can be no doubt that the etiological cause of pes valgus adolescentuim is abnormally frequent and long-continued pressure, and especially constant standing." Hoffa[12] says, "There is thus no doubt that steady loading of the foot brings flat-foot into being."

In America the same opinion prevails. Bradford and Lovett, in their "Orthopedic Surgery," say,

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[4] Lehr: Buch. Orth. Chir., p. 679.
[5] Lorenz, p. 35.
[6] Quain's Tenth Edition, vol. ii, p. 138.
[7] Beitrage zur operativen orthopädik, p. 99.
[8] Virchow's archiv., xxv, Bd. p. 572.
[9] Langenbeck's archiv., ii, iii, p. 722, 1869.
[10] Lorenz, p 137.
[11] General Orthopedics, Wood's Trans., p. 292.
[12] Loc. cit., 686.

"There can be now no question that the deformity results from the superincumbent weight falling upon an ankle and foot unable to sustain it. It is the result of a disproportion between the body weight and the apparatus for sustaining it."[13]

Of all the modern English writirs, Whitman of New York has done by far the most careful work on this subject, and published in the last few years a series of articles which take up minutely this subject of etiology. Having enumerated the causes already set forth, such as general weakness from diseases of all kinds; general fatigue from long standing; dancing; running and the like, he lays special stress upon "attitude," especially the "attitude of rest," which had already been noticed at length by Lane.[14] He shows how the position of strength and action is with the toes well adducted; for that brings all the muscles into play to support the arch of the foot, and moreover, at every step the weight of the body has to be raised over the great toe. The least muscular support, on the other hand, is given to the arch when the feet are spread and the toes turned outwards. This position tends not only to relax the muscles and bring the strain directly upon the ligaments; but by increasing the pronation brings the weight still farther over towards the inner border of the foot, and aids a natural predisposition towards a tipping over of the os calcis and slipping off inwards of the astragalus; in short, the breaking down of the internal arch. This it is that Lane calls the "attitude of rest."

This brings us back again to the question of which arch gives way first, and the answer seems clear. It is the internal arch. The weight of the body is normally transmitted through the astragalus upon the os calcis at a point internal to its base. This will, therefore, tend constantly to roll over, and, as it were, to tip the astragalus off its back in a direction inwards and forwards. This tendency is as constantly counteracted by ligamentous and muscular action. But when the muscles are tired and so having hard work to give the arch the necessary support, if the toes are turned out to try and relieve them, that is, if the "attitude of rest" is assumed, then the weight is transferred still farther towards the inner border, the strain is increased, while, at the same time, the resistance is lessened, and a flat-foot is the result.

This seems clear if we assume that it is the inner arch that gives way, and not the outer; for by pronating the foot and abducting the toes we throw all the weight off the outer arch, which would consequently have no reason for breaking down so long as we assume this "attitude of rest"; and yet this has been shown to be a great predisposing cause. Moreover, the outer arch is very strongly girded by ligaments, and its span so fully filled up by the soft tissues, that it practically rests upon the ground when the weight is thrown upon the foot. Certainly it depends the least upon muscular exertion for its maintenance; then why should it break down when the muscles are tired, or when they are placed at a disadvantage by the position of the foot?

Strangely, Hoffa, while following Lorenz as to the primary failure of the external arch, nevertheless quotes the English authors in regard to this matter of attitude as a predisposing factor, and then reprints their cut of a man in this position. These two things would seem to be contradictory.

Anatomy. — If we turn to the pathological anatomy we find that the muscles of the leg are atrophied on the flexor side, while the extensors, and especially the pronators, are in a state of contraction. The plantar ligaments have been found to be not only longer but also much thicker than usual, especially the calcaneo-scaphoid. The dorsal ligaments are found in a state of fatty degeneration.

Of the bones, the tibia is usually unaltered. The tip of the external malleolus of the fibula may be rounded off, or even flattened out from pressure against the os calcis. Of all the tarsal bones the astragalus suffers the greatest changes. A large amount of plantar flexion at the inter-malleolar joint is quite a constant feature of the severe grades of flat-foot. To give this the astragalus is rotated so far forwards that only the posterior part of its trochlea surface lies in contact with the tibia. The fore portion soon loses its cartilaginous covering, thus diminishing the height of the bone considerably.

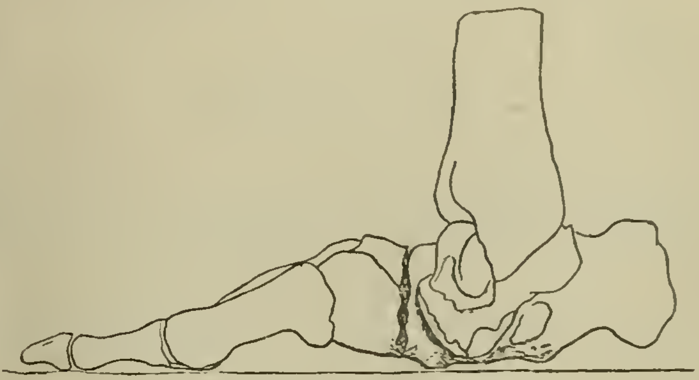

Fig. 2. (After Lorenz.)

The head of the astragalus projects sharply inwards and downwards (Fig. 2); the scaphoid is in its turn thrust so far upwards that in severe cases it may lie like a bridge upon the neck of the astragalus. It is also rotated in such a way that its tuberosity becomes its under surface. The head of the astragalus in its abnormal position rests primarily upon the inferior calcaneo-scaphoid ligament, and only articulates with the scaphoid at its upper inner angle. Corresponding to this the ligamentous facettes upon its head become altered, a low ridge divides the head into two ovals, of which the one articulating with the ligament increases with the degree of deformity at the expense of the one articulating with the scaphoid bone.

During this process a low degree of periosteal inflammation is often excited, which results in the throwing out of a wall upon the upper surface of the head of the astragalus, which increases the size of the facette for articulation with the scaphoid, and tends to prevent any further displacement.

The changes in the os calcis relate only to its surface. It falls over inwards, and brings the external malleolus to bear against its upper outer surface. This contact develops a joint surface there, and may lead to the formation of a bony overgrowth. With the advent of flat-foot the sustentaculum tali begins to disappear, and in high grades of the deformity it may be reduced to a mere knob.

The same changes take place in the facettes for articulation with the cuboid as came on the head of the astragalus for the scaphoid, and the same bony wall is seen in advanced cases. The cuboid suffers merely a change of position. It is partially dislocated upwards and at the same time inclined forward; so that it is no longer in contact with the os calcis along the whole of the joint-surface.

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[13] p. 728.

[14] Guy's Hospital Reports, vol. xxix, p. 256.

In cases of any degree of severity there is in addition to the changes in the tarsal bones, a "contracture in adduction" of the metatarsals, which gives the foot a most characteristic zigzag line on its inner aspect (Fig. 3).

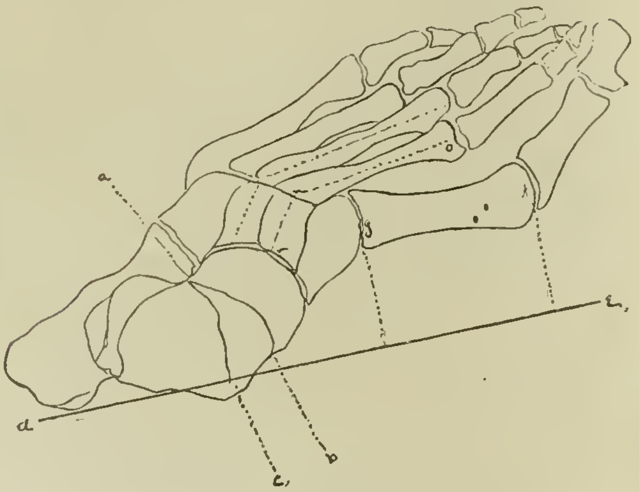

Fig. 3. (After Lorenz.)

Symptomatology. The earliest symptoms of developing flat-foot are usually an undefined sense of fatigue upon long standing, which gradually increases to the degree of pain. At first this pain is dull and general in character, and only felt when weight is being supported by the feet; but soon it becomes sharp and localized in certain definite spots, which will be found sensitive to pressure.

Locality of Pain. (1) The first of these will be found over the head of the astragalus on the inner margin of the foot, and corresponds to the over-stretched calcaneo-scaphoid ligament. (2) Usually second in order of appearance, but occasionally first, is localized pain (seldom sensitiveness to pressure), through the heel, just under and behind the malleolis, which as time goes on may radiate up the leg, often as far as the knee and sometimes even to the hip. It seems probable that this is due to a stretching of the lateral ligaments that pass between the tops of the malleoli and the surfaces of the os calcis; and also to the abnormal strain upon the tendons of the leg muscles that run in this situation, and play such an important part in maintaining the normal arch. (3) Next comes pain at the calcaneo-cuboid joint, due to stretching of that ligament. (4) And, finally, more diffused pain all along the dorsal aspect of the tarso-metatarsal articulation.

If the foot is dipped in water and the patient allowed to stand upon a dry sheet of paper, an exact tracing of the sole is easily obtained. Normally the outer margin is nearly straight, while the inner shows a sharp curve with the convexity outwards (Fig. 4, *a* and *b*).

Occasionally the outer arch may be so high that it also does not rest upon the ground (Fig. 5, *a*). As the arch in flat-foot becomes more and more broken down, this tracing is found to change. The internal line becomes gradually straight, until finally when the arch has completely given way this line is convexed inwards, and shows a marked bulging where the head of the astragalus actually rests upon the ground (Fig. 6, *a*).

When looked at from behind the normal axis of the foot is seen to be parallel to that of the leg. As flat-foot advances the foot assumes more and more the position of pronation; that is, the axis of the leg if prolonged falls to the inner side of the axis of the foot, the sole is turned outwards, and in high grades the outer border of the foot is even entirely raised from the ground.[15] This being the case, it is hard to see how the outer arch can have first "broken down" under weight; for if that were the case the foot would have certainly continued in the direction of the original thrust, and assumed a position of supination with an outward curve of its external border.

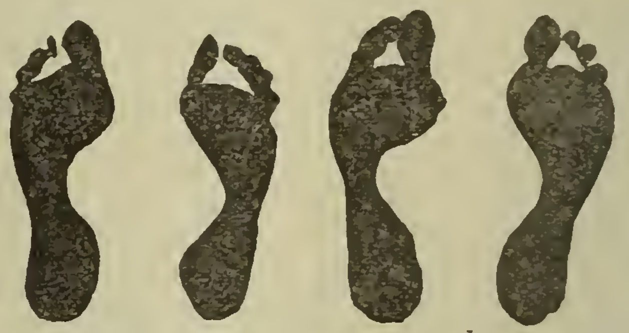

Fig. 4. *a*, Male, fifteen years, suffered from flat-foot and pains, relieved by plate. *b*, Female, nineteen years, ditto.

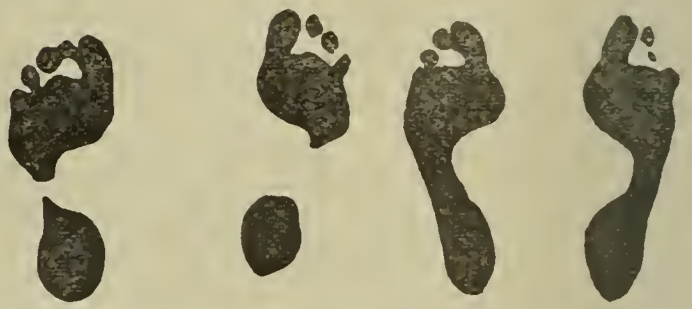

Fig. 5. *a*, Male, fourteen years, non-deforming club-foot. *b*, Female, fourteen years, suffered from flat-foot pains; completely relieved by plate.

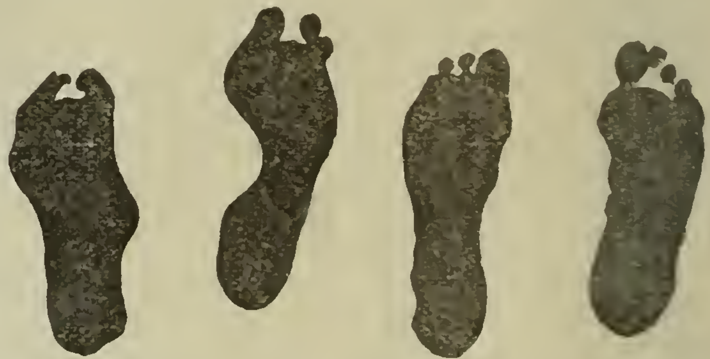

Fig. 6. *a*, Male, seventy years, left foot shows arch entirely lost; severe pain. *b*, Female, twenty years, feet painful; relieved by plates.

In the pronated foot the external malleolus appears to have been lost. On the inner side the malleolus stands out very prominently; in front of it may be seen a still more pronounced bulging corresponding to the head of the astragalus, and often a third caused by the scaphoid bone.

Flat-feet are prone to sweat profusely, to have enlarged veins, and are uniformly cold. They have lost all their normal spring, they feel heavy and cloddy; consequently, the patient shuffles along awkwardly with the toes turned out, hardly lifting the feet from the ground. Particular discomfort is felt on first using the feet after a period of rest, as on getting up in the morning; and Whitman speaks of patients who were unwilling to sit down in his office from dread of the increased pain when they again stood up.[16]

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[15] Hoffa, loc. cit., p. 692.

One peculiarity among the symptoms of the flat-foot needs especial emphasis. It is that the *amount of pain stands in no direct relation to the amount of deformity.* Many patients whose feet show no deviation from the normal type nevertheless suffer acute pain. This pain is not only in the areas already spoken of as characteristic of flat-foot; but it is entirely relieved by flat-foot treatment. Figs. 4, *a* and *b*, Fig. 5, *b*, show three such feet treated by the writer at the Massachusetts General Hospital last fall.

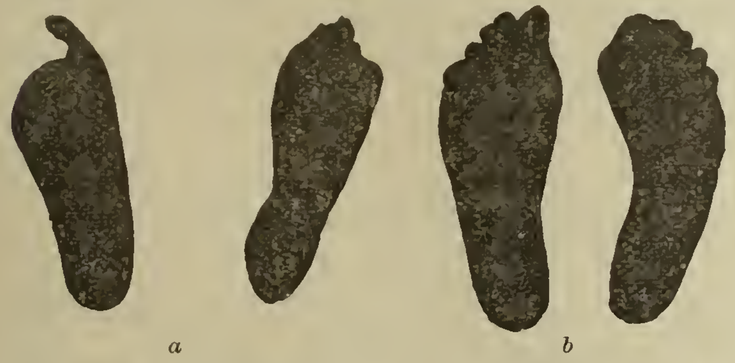

Fig. 7. *a*, Male, twenty-one years; pain very slight. *b*, Male, twenty years; feet painless.

Again, many feet that have partly or wholly lost their arched character are entirely free from pain (Fig. 7, *a* and *b*). This fact of painless flat-foot has led the Germans to make a separate class for them, calling it "Platte Fuss,"[17] and regarding it as a failure of development or persistence of the infantile condition; and also as a racial peculiarity, instancing the negro and the Jew.

(To be continued.)

Clinical Department.

ANOTHER CASE OF CHRONIC NEURITIS FOLLOWING INFLUENZA.

BY JAMES J. PUTNAM, M.D.

Since my paper which appeared in the Journal of October 13th was written, I have seen an important case of incoördination following influenza, which closely resembles in some respects, the two already noted. In other words, it is a case of incoördination of all four extremities, with impairment of sensibility and other symptoms pointing to chronic neuritis, which, in this case is probably associated with myelitis.

The patient is a man in middle life and of previously excellent health, who was attacked in January, 1890, during the height of the epidemic, with a severe and typical influenza. He never recovered his strength, and after the subsidence of the early symptoms he began to suffer from a severe epigastric pain of the character of the "girdle sensation," which followed him for a year. He dragged himself about and tried to work, but the weakness of the legs gradually passed over into the condition that now exists, namely, one of incoördination so great that he can walk but a few steps alone. There has not been much paræsthesia, but a high degree of impairment of sensibility is now present in the feet and legs, passing gradually away toward the upper part of the thigh. The knee-jerk is absent. The hands are somewhat ataxic, though he considers them practically well. There is a slight lack of control over the bladder. There has been at no time other symptoms characteristic of locomotor ataxia, such as pains or pupillary changes, and it is important to note that the disease has of late shown some tendency toward improvement.

Although these symptoms would point strongly to an involvement of the spinal cord, yet there are facts which render it possible to believe that even such long-standing, chronic and progressive affections as this may be related pathologically to disease of the peripheral nerves alone.

SOME MODIFICATIONS OF THIERSCH'S METHOD OF SKIN-GRAFTING.

BY FRANCIS S. WATSON, M.D.,
Assistant Visiting Surgeon, Boston City Hospital.

Having, in a varied experience with Thiersch's method of skin-grafting, obtained uniformly successful results, while modifying, as it seems to me, advantageously, some of the details of the operation, I am led to ask the favor of a short space in the Journal, in which to refer to them, in the hope that the operation may thereby be made simpler for those who are beginning to practice it.

Assuming that Thiersch's rules are familiar to the reader, I only wish to mention the following modifications as adopted by me:

(1) The substitution of a four per cent. boracic acid solution for the sterilized salt solution, both during the operation and in the subsequent dressings, if wet dressings be used.

(2) Instead of the frequently repeated moistenings of the grafted surface and the dressings, it is sufficient to wet the gauze dressing once in twenty-four or forty-eight hours with the boracic acid solution; the gauze dressing being covered over outside by a rubber or gutta-percha tissue.

(3) If the dressing remains odorless it need not be removed until at the end of from four to six days after its first application.

(4) Perfectly successful immediate results may be obtained under the use of *dry* sterilized dressings — healing taking place under one dressing. (This plan I have not tried, however, sufficiently often to be able to say, from personal observation, if the good results are as invariable as under the wet dressings, or if the skin of the newly healed surface is as sound ultimately.)

(5) It is unnecessarry to curette the surface to be grafted, *provided it be covered by healthy, fresh, red, flat* granulation tissue. This omission saves the time which is required to still the bleeding which follows curetting.

(6) Where, under a reverse condition of the exposed surface, curetting *has* been done, the application of an Esmarch bandage and tourniquet, when possible, and the leaving of the latter in place for from one-half an hour to an hour, after the operation has been completed (as proposed by Dr. McBurney), is of decided advantage.

(7) It is not necessary to the success of the operation that the whole of the exposed surface should be covered with grafts at one time. The patient may be in too exhausted a condition to allow of the prolonged

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[16] New York Medical Journal, February 27, 1892.
[17] Lorenz, p. 54,

etherization necessary to cover an extensive area; if so, there need be no anxiety as to the result if but a portion only of the surface be grafted at one time.

I have not used the devices of Dr. McBurney or Dr. Mixter for stretching the skin from which the grafts are to be taken, but they are highly spoken of by those who have done so. In default of these, the use of rough gloves, which have been sterilized as proposed by Dr. Dunham, of New York, in a recent number of the *Post Graduate*, recommends itself as being admirable for this purpose, and like all other means for saving time in the operation their use is very desirable, as allowing of the more rapid cutting of large grafts.

In other respects than those mentioned, the directions of Thiersch have been followed in my cases. As examples of the results in which some or all of the modifications that have been enumerated were put in use, the following cases are cited:

(1). A female adult, whose arm was bound firmly to her side by a tough cicatrix extending from the axilla to the elbow, the result of a burn some time previous. The cicatrix was divided and excised and the arm placed at right angles to the body. This exposed a very large surface, which was represented by the inner surface of the upper arm, the axilla, and the side below it to a point corresponding to the elbow when held to the side. In about ten days this surface was covered with healthy, red, flat granulations. The side and about one-half of the axilla only were grafted at one sitting. The surface to be grafted was not refreshed in any way. Boracic acid solution was used at the time of the operation, and sterilized gauze wet with boracic acid solution was used for the subsequent dressings. Strips of sterilized thin rubber tissue covered the grafts. The dressing was first changed on the fourth day. The dressings were moistened but once daily with boracic acid solution. At the end of two weeks that part of the surface grafted was entirely covered over and healed; subsequently the remaining parts were grafted successfully by my colleague Dr. Burrell.

(2) An anæmic boy, the larger part of whose leg from knee to ankle had been denuded of skin by an accident. This surface was covered by unhealthy, redundant granulations. The surface was thoroughly curetted, an Esmarch bandage and tourniquet applied to the limb, and the whole surface was grafted at one time. Boracic acid solution was used at the time of the operation, the grafted surface was made as dry as possible at the end of the operation, covered with rubber strips, and a dry dressing of sterilized gauze was applied, and removed for the first time at the end of three days. At that time the operation seemed to have wholly failed; scarcely a trace of the grafts could be seen. Dry dressing was reapplied. At the end of three days more the surface was well covered by the grafts, which had then come to view, and in three weeks the healing was complete.

(3) A healthy adult, who had, a few days previous to entering the hospital, ruptured his urethra during coitus while drunk. Urinary infiltration ensued, and gangrene of the entire skin of the penis and scrotum resulted. In due time these parts presented a healthy, granulating surface, which was grafted. The surfaces were not refreshed. Boracic acid solution was used at the operation, and wet boracic acid dressings subsequently. The dressings were in this case renewed daily, owing to their becoming displaced. In ten days the most perfect result was obtained.

These cases are selected as representing some of the more difficult conditions for the application of this method, and as demonstrating the entire success that followed the use of the modifications described. I should have said that the reason for the substitution of the boracic acid for the sterilized salt solution was, that, no matter how thoroughly all the steps had been taken to make the operation an aseptic one, nevertheless in some instances if the dressings were wet with the salt solution and not changed for two or three days, they became foul; whereas when boracic acid solution was used they remained perfectly sweet for five or six days, and so the necessity of the frequent change of dressing was avoided.

Reports of Societies.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, October 17, 1892, the President, S. B. W. McLeod, M.D., in the chair.

Dr. Charles A. Leale read a paper on

CHOLERA: ITS PROPAGATION AND TREATMENT.

He believed it had been conclusively demonstrated that Asiatic cholera never originates spontaneously, but that the disease, by means of its specific germs was always conveyed from certain portions of Hindostan, where it is constantly present. As to its origin there, nothing was as yet known. It was a fact, however, that even in Hindostan epidemics not infrequently came to a sudden cessation, notwithstanding the fact that apparently the same conditions prevailed as when the disease was at its height. As to the cases where outbreaks of cholera had been reported on ships in mid-ocean which had not been to any infected port, he thought the explanation was probably to be found in wind storms which had passed over infected regions and carried the germs to a great distance.

A certain tolerance of the disease was often acquired, and in his own case it was only after two months of the most constant and pronounced exposure to it in a former epidemic that he was seized with a slight attack of cholera. This was promptly cured by appropriate treatment instituted as soon as the symptoms presented themselves, and he expressed the opinion that if the disease could always be treated early in the premonitory stage, nearly all the patients could be saved. It was important, however, that cholera patients should be kept under careful observation for at least three days after the cessation of the trouble. Dr. Leale was strongly opposed to the transfusion of blood or injection of other liquids into the veins, as being dangerous to life under the existing conditions, and even under the most favorable circumstances offering less chance of success than certain other methods. He also disapproved of hypodermic injections, and believed that the best results could be obtained from the administration of hot animal broths by means of the stomach or rectal tube. It was well known that one of the greatest dangers in cholera was from the low temperature of the body, and this method of treatment had a powerful effect in counteracting this. He had seen instances where a patient was in a state of profound collapse for three days, and yet ultimately recovered. For the relief of the cramps in the limbs which were so frequent a symptom, he thought that alternate circular compression, made by the attendant, was the most serviceable treatment.

Dr. J. Lewis Smith read a paper on

CHOLERIFORM DISEASES IN INFANTS AND YOUNG CHILDREN.

It was principally devoted to the consideration of ordinary cholera infantum. While not contagious, this disease, he said, was in many instances of microbic origin, although the bacteria met with in it are entirely different from the spirillum of Asiatic cholera. From the symptoms alone, he thought it would be very difficult to distinguish between cholera infantum and the latter; and when cholera was prevalent in a community cases were to be expected in young children as well as adults. In cholera infantum, however, the essential nature of which was an acute inflammation of the stomach and intestines, there was, as a rule, a high grade of temperature, and this might serve as a point of diagnosis between this and Asiatic cholera, where the temperature was apt to be abnormally low. Of course, the detection of the specific bacillus would settle the matter.

Dr. Edward K. Dunham, who was employed by the Board of Health to conduct the researches at the Carnegie Laboratory, made some remarks on

BACTERIOLOGICAL DIAGNOSIS IN THE CASES WHICH HAVE LATELY OCCURRED IN NEW YORK.

He said that in only two instances had it been possible to demonstrate the presence of the Koch spirillum before gelatine cultures had been made. He exhibited tubes containing these cultures at various stages, and showed under the microscope numerous colonies of the bacilli. He also gave demonstrations of the same from micro-photographs upon a large screen. Incidentally, he remarked that when the bacilli were cultivated at a low temperature they were, as a rule, long and markedly curved; while, when there was a high temperature they were found to be shorter and straighter.

Dr. John Godfrey, of the United States Marine-Hospital Service, read a paper on

THE PROBABLE ADVANTAGES OF QUARANTINE AND THE PROPER METHOD OF CONDUCTING IT.

At the last Congress of Demography he said that distinguished English scientists stated that they had no patience with those who believe in the efficacy of quarantine, and that it was better to trust to sanitation to protect the community from infectious diseases. For himself, he believed in the positive advantages of quarantine. It was an advantage to convince any one of its utility, and it was another advantage to have people unanimous as to how quarantine should be conducted. Quarantine had a twofold object: *first*, to destroy the cause of disease, and, *second*, to exclude whatever introduces it, whether animate or inanimate. It was better, he thought, that the commerce and trade of all the world should suffer, than that one human life should be sacrificed for it. As regards cholera, we had at present a good deal of positive information; but the case was very different as regards some other diseases, and notably yellow fever. Hitherto, its cause had eluded all the skill of the bacteriologist. If the cholera spirillum thrived in filth and preyed upon those in the most abject conditions of life, the germ of yellow fever, whatever it might be, revelled in robust and well oxygenated bodies. When we did not know anything about a disease, the best thing we could do was to exclude it. All quarantines were of advantage only when they attempted to make a compromise between expediency and exclusion. The question was, how to protect the community and yet not stop the wheels of commerce. When we could do this we would have an ideal quarantine, but we had not reached this point as yet.

As to the proper method of conducting quarantine, he thought that any quarantine station should be not only a barrier against disease, but should have a thoroughly equipped laboratory. The chief officer should be a man selected on account of his scientific attainments, and not given this position as the creature of a political pool. Civil service rules should be in use, and tenure of office dependent on competency. The chief officer should hold the post as long as he conducted it in a proper manner. and should be able to train up those who were to succeed him.

Dr. William Pepper, of Philadelphia, made an address on

THE PAN-AMERICAN MEDICAL CONGRESS AND ITS INFLUENCE ON SANITATION AND QUARANTINE.

He said that the Pan-American Congress was in affiliation with the American Medical Association, in which body it had its origin, and he hoped that this Congress would receive the united support of the profession of the whole country. He felt that it was of greatly more importance that the congress should be held here and be a success than that an International Medical Congress should meet here and be successful. From an International Congress nothing could be looked for but a certain amount of scientific work. which could be accomplished elsewhere as well as here. But the Pan-American Congress would bring us into close reciprocal relations with the other countries of the western hemisphere, would advance the cause of medical education on this continent, and would no doubt result in attracting large numbers of students to the great medical schools of the United States. There were thus great material advantages to be derived from such a gathering, and it was a matter of congratulation that the project was entirely free from any clique and from all partisan feeling. It was a broad, a national, and a thoroughly representative one. The various committees had already done a great deal of good work, and it was indeed most fortunate that this congress was to be held here and at this time.

As to the matters of sanitation and quarantine, much was to be expected. There was a section not only on general hygiene, but one on marine hygiene and quarantine; so that these subjects would be most carefully considered. There was an intense, uniform public sentiment in whatever measures of quarantine could be shown to be of service to the common health, and such measures were sure of public support. This congress would have the support of public opinion, and would undoubtedly have great weight with the authorities. While the English spoke with indifference of the matter of quarantine, they had no conception of the vast hordes of people that were continually flocking to our shores, to spread all over our immense territory. With such a wide territory we could not hope to deal with individual cases as they could in a small and thickly populated country like England. Here infectious diseases spread in a thousand directions, when once introduced. As an offset, the distance of America gave them time to develop during the ocean voyage; so that we could intercept them if we had the authority and facilities to do so. Properly conducted laboratories, as Dr. Godfrey had advised, were essential in connection with quarantine stations, so that the public could have absolute confidence. Commerce was increasing all the time, and it was important that it should be interfered with as little as was consistent with the public health. The creation of a proper public sentiment on matters relating to the dealing with disease was an important function of this congress, and he would urge upon this representative body the importance of making it a thoroughly representative success.

Dr. George M. Sternberg, U. S. A., said that at the International Sanitary Congress held in Rome in 1885 all matters relating to cholera were thoroughly discussed. The medical officers of England, many of whom had had extensive experience in India, claimed that cholera passed of its own free will across the ocean, nobody knew how; but he had assured them that when it came to this country it came first to the seaports, by means of ships, and from thence spread through the country. It was true that the old-fashioned method of quarantine, by which the passengers on an infected vessel were kept confined for a long time, was a relic of barbarism; but the medical men of all countries except Great Britain were unanimous in recommending a method of quarantine which was distinctly formulated in the conclusions adopted at that congress. Its main features were as follows:

(1) Agents at the point of departure of vessels to inspect and disinfect.

(2) Sanitation on ship-board. Isolation of the sick. Every ship to be provided with an intelligent physician not in the pay of the company.

(3) If these measures were carried out, there would be very little detention at the port of destination. If the ship were found to be infected, the well passengers were to be removed at once, and the sick, if possible, sent to suitable hospitals. The clothing was to be disinfected, and then, after not more than five days from the appearance of the last case, the vessel was to be released from quarantine. This was the kind of quarantine which we should have here; observation, inspection, disinfection, and isolation of the sick.

Personally he had long been an advocate of a national quarantine system. It was not right, he thought, that the fate of the whole country should be in the hands of any one State. The quarantine officers should be responsible to the general government; and the expenses of quarantine should be paid by the Nation. The people who were protected, should be willing to pay for the cost of protection.

Dr. A. L. Gihon, U. S. N., said that in his experience of nearly forty years he did not remember any instance of contact with infectious disease where it had not been possible to prevent a spread of the disease on ship-board. Exclusion and isolation were the means employed in the navy, and he thought that this was all that could be done in any quarantine. In conclusion, he referred to the work of the Pan-American Congress and of the approaching meeting of the American Public Health Association in the City of Mexico as a preparation for it.

AMERICAN GYNECOLOGICAL SOCIETY.

(Continued from No. 16, page 388.)

Sixteenth Annual Meeting, held in Brooklyn, September 20, 21 and 22, 1892, the President, Dr. John Byrne, of Brooklyn, in the chair.

SECOND DAY (CONTINUED).

VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS.

Dr. H. J. Boldt, of New York, in a paper on this subject, devoted special attention to certain points in the operation, and to certain reasons why he preferred total extirpation to any form of partial removal. Regarding the method of operating, he expressed a preference for ligatures when it was possible to use them, but said that in certain cases he had found it desirable, if not absolutely necessary, to use clamps; and, so far as his own statistics went, it would appear that the one method was as safe as the other. As to the form of suture, he had persistently used catgut for several years, and with Dr. A. P. Dudley, had been the only consistent advocate of this material.

He considered silk ligatures in this operation a nuisance; it prolonged convalescence and could not be rendered more nearly antiseptic than catgut, while with care, the latter could be tied quite securely. He impressed the necessity for keeping well outside of the diseased tissue. One or two years ago he held the view, which was yet entertained by some, that it was advisable to operate even though one could not remove all infiltrated tissue, but further experience had led him to abandon this practice. The patients did not live so long as if the operation had not been performed, their suffering was greater, there remained some discharge and some hæmorrhage which might be profuse; in short, the patients were worse than if total extirpation had not been done. It should not be forgotten, however, that an apparent malignant infiltration causing immobility of the uterus might in reality be due to a previous simple inflammatory exudate. In that event he would not hesitate to remove the entire uterus, although it might be immobile. In this country, even in large cities, not more than fifteen per cent. of all cases of cancer of the uterus that reached the surgeon were suitable for total extirpation of the uterus. It was to be hoped that general practitioners would learn to recognize the disease earlier.

Regarding operations for partial ablation in cancer of the uterus, he quoted a number of cases in current literature, in which it was found that a nidus of disease in the cervix, and only apparent pathological condition before extirpation, was separated from disease in the body of the organ by an isthmus of healthy tissue. Because of the impossibility of saying before one had the entire uterus in his hand that the body of the organ is not involved, as well as the portio, he thought he would do hysterectomy in all cases where the extent of the disease did not contraindicate it. It was true the President had advanced some very weighty arguments in favor of the electro-cautery, but the author was not yet convinced.

Dr. Wm. M. Polk, and Joseph E. Janvrin, of New York, agreed in the main with Dr. Boldt. Dr. Janvrin, thought the operation justifiable where the cervix, portio, or endometrium were involved, and in some cases where the vagina alone was implicated.

In electing the operation, the same principles should govern as in cancer in other parts of the body.

Dr. J. M. Baldy, of Philadelphia, had discarded the use of the clamp for catgut. He would return the stump and completely close the vaginal opening.

Dr. H. C. Coe, of New York, in the last two years had not lost a case from vaginal hysterectomy. He would not do complete hysterectomy for commencing epithelioma of the cervix.

Dr. W. Gill Wylie, of New York, attributed his good results in 31 cases, to rendering the uterus thoroughly aseptic, before the operation, by curetting and douching.

Dr. W. H. Baker, of Boston, suggested a thorough searing of the parts with the galvano-cautery after the operation.

Dr. J. Reeves Jackson, of Chicago, would not remove the entire uterus for carcinoma.

Dr. B. F. Baer, of Philadelphia, read a paper on

SUPRA-VAGINAL HYSTERECTOMY, WITH SUB-PERITONEAL TREATMENT OF STUMP WITHOUT LIGATURE, IN OPERATIONS FOR UTERINE FIBRO-MYOMATA.

He said it was his object in bringing this paper before the Society to call attention to a new management of the cervix in supra-vaginal hysterectomy. If the method should prove as successful in the hands of others as it did in his own, it would grow in favor, for he had had nine consecutive cases, all of which recovered. Since writing this, however, he had had a tenth case, which resulted fatally; but for this result, as he went on to show, the method of operating could not at all be held responsible.

A part of the paper was devoted to the consideration of reasons which had led different operators to abandon abdominal fixation of the stump and for resorting to various modes of procedure.

Dr. Baer's operation resembled more nearly that of Dr. Goffe and Dr. Dudley than any other; yet he said there was the greatest difference between them, and he hoped the two would not be mixed.

He operated preferably with the patient in the Trendelenburg posture. The first step after opening the abdomen was to throw a silk ligature around the broad ligament on one side, after which the tumor, etc., were to an extent separated from the uterus. The same step was taken on the opposite side. The knife was then run lightly around the uterus an inch or two above the peritoneal reflection of the bladder in front and a little lower behind; the peritoneum was stripped down by the handle of the scalpel to make flaps. The next step was to ligate the uterine arteries close to the cervix. The organ was then amputated at the cervix, leaving none of the supra-vaginal portion. When the cervix was dropped, it receded deeply into the pelvis and was covered over by the peritoneal flaps, which usually were not sutured together. Not a single ligature or suture was put into the the cervix, which was an important feature in Dr. Baer's operation, as thereby all occasions for sloughing, which had sometimes followed from a constricting ligature or suture in the other operation, was avoided. In his cases there had been no hæmorrhage, no sloughing, practically no rise in temperature, and no outward result whatever; he did not cauterize the cervical canal. Death in his tenth case took place in thirty-six hours after the operation, and had been due to the action of the anæsthetic, aggravated by a large goitre.

Dr. Wm. M. Polk, of New York, read a paper on

SUPRA-VAGINAL HYSTERECTOMY FOR UTERINE FIBROIDS; REPORT OF FOURTEEN CASES.

Operators had ranged themselves into schools according as they favored intra- or extra-peritoneal methods of treating the stump. The mere fact that two methods held the field was presumptive evidence that neither was perfect. Dr. Polk had performed total abdominal hysterectomy 21 times; 17 for fibroma, four for procidentia. Of the former, two died. As an operation, total extirpation of the uterus for fibroid disease presented no special conditions except in the matter of controlling the vessels. Those that were situated on the upper portion of the uterus were secured in the same manner as in other varieties of hysterectomy. The same was true of securing the round ligament and broad ligament. The point of digression was reached at the cervix, where one had to deal with the vessels supplying the lower segment of the uterus. Speaking of the arrangement of the arteries which were likely to give trouble, they were those belonging to the vagina and to the posterior wall of the bladder, and the reason why they gave so much annoyance at times was because of their anastomosis with the vessels above. Looking down from above and bearing along the uterine artery from the point at which it left the pelvic wall to go to the uterus one found the following branches: The para-vesical, supplying the para-vesical space; the anterior vaginal supplying the upper anterior portion of the vagina and sending abundant branches to the posterior aspect of the bladder; the lateral vaginal, supplying the whole side of the vagina and communicating by anastomosis with branches coming from the annular; the annular with its branches, its main trunk continuing along the side of the uterus and a large branch descending to the vagina. These vessels were all given off between the uterus and the point at which the main trunk crossed the ureter, so that a ligature placed outside the ureter would control all of them. He was not prepared to maintain, however, that ligation outside of the point of origin of all the branches was necessary. A ligature placed around the vessel just outside the utero-vaginal junction would certainly control all inside the anterior vaginal. This would leave bleeding points upon the stump dependent upon the return currents derived from the arteries and lateral vaginal. These leak so slowly that ample time was given to seize and ligate them. Regarding the management of the stump, Stimpson, he said, simply dropped it to its natural position in the pelvis, passing through it a drainage-tube. Others had advocated closing it by stitching the peritoneal surfaces together, and still others, notably Dr. Krug, turned in the peritoneum and drained the vagina from below with gauze.

The seventeen cases related, represented all the variations which had been suggested for the management of the stump, and so far as results were concerned he could not say that one had proved to be better than another, yet the operation which left the most natural surface behind and which most amply provided for drainage was the one which he had adopted.

The usual incision was made in the linea alba, extending it well down to the symphysis. The ovarian vessels were then tied in position, the first ligation being made if practical outside the ovary. A ligature or forceps was then applied about the same vessel well up against the uterus to provide against the return flow. The upper part of the broad ligament and round ligament were next tied; next the ovarian vessels were divided between the ligatures, and the uterus was cut free from the round ligament and broad ligament well down to the base, and lifted from its bed. If the tumor was large and unwieldy, a rubber ligature was thrown around as low down as possible and the structure above cut away; if it were of reasonable dimensions he proceeded at once to ligate the uterine vessel on each side, then cut the uterus away from the vagina. He then introduced four long catgut sutures, passing one through the anterior vaginal wall, thence to the edge of the peritoneum deflected from the bladder; another through the posterior wall and the cut edge of the peritoneum dissected from the back surface; one upon each side, placed so as just to bring the peritoneum together at the sides of the stump of the vagina, passing thence through the lateral vaginal wall. These sutures were each tied in position and then tied together in a knot which was thrust into the vagina, seized with a forceps, and drawn well downward, thus turning in the peritoneal surfaces. The vagina was then washed out and packed with gauze, the packing resting against the inverted peritoneum in the majority of cases, but in some where there had been such handling of tissues it might be extended between the folds. In this latter class of cases a glass drainage-tube was introduced to the bottom of Douglas's cul-de-sac from above. The abdomen was then closed; the drainage-tube was removed in twelve to twenty-four hours; the gauze on the third day.

In procidentia, he did not drop the stump, but attached it to the abdominal walls to avoid the possibility of prolapse.

Dr. Boldt thought fixing the pedicle in the abdominal wound justifiable where time was an important element; otherwise Dr. Polk's method was nearly ideal.

Dr. Baldy, still preferred the old extra-peritoneal treatment of the stump. He had had 25 cases with two deaths, not due to the operation.

Dr. Baer, said the important point in his operation was, that the cervical stump was not constricted, contained no sutures and no cause was given for suppuration.

THIRD DAY.

CAN WE PREVENT SECONDARY HÆMORRHAGE AFTER OVARIOTOMY?

Dr. H. T. Hanks, of New York, discussed this subject in a brief paper. That it was worthy of consideration was evident from the fact that even to-day good surgeons occasionally had hæmorrhage after ovariotomy. He had himself had two cases, in one the patient died, and in the other he was able to save her life, by reopening the abdomen and securing the point of hæmorrhage. It was necessary also to resort to transfusion. Three years earlier he had seen two cases in the practice of a friend, in one of which he himself reopened the abdomen, transfixed the pedicle, employed a saline solution and saved the patient's life. He had known of no fewer than ten deaths from this accident within the last five years. Could then rules be formulated for its prevention? This question was especially worthy of consideration by the younger members, who might have judged from their work that there was but one way of fastening the pedicle. The same procedure should not be practised where the pedicle was wide and flat, as where small and round.

Where the tumor was large, after ligating the large artery and tying it as tightly as possible, quilt the broad pedicle in and out so that under no circumstances could the silk slip. In smaller pedicles, discover the artery if possible before transfixing and pass a transfixing needle to one side of it and tie thoroughly. In other words, in small pedicles be sure not to split the artery, or pedicle, by too much traction in tightening the ligature. In removal of the diseased tubes and ovaries, if diseased and embedded in old adhesions, there would be only small arteries to deal with and almost any well tied ligature would hold. He advocated no special ligature, either silk or catgut would do, but should be quite aseptic. If catgut were employed, make the first part of the knot with one turn, the second part with two turns.

Dr. A. P. Dudley, of New York, said in his experience this accident was due to traction on the ligature on one side, while operating on the tumor on the opposite side. Before attempting to ligate he always broke up adhesions on both sides and freed both appendages, and the uterus.

Dr. Wm. H. Wathen, of Louisville, thought the kind of suture unimportant if it was strong enough, and was tied well.

Dr. H. P. Carlson, of Baltimore, always mummified the stump with Monsel's solution of iron.

Dr. Baldy, of Philadelphia, had his assistant, holding up on the pedicle, slacken up just before he tied the knot. Before closing the abdomen he always went back to the first side to see that all was right.

(To be continued.)

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NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, April 18, 1892, the President, S. B. W. McLeod, in the chair.

Dr. J. Hilgard Tyndale made an address on

CHRONIC ADHESIVE PLEURISY, INFLAMMATORY AND TUBERCULAR.

All hindrances to respiration, he said, might be classed under two heads: (1) Mechanical Obstruction; (2) Tubercular Invasion. The first included all abnormal conditions in the nose, pharynx, larynx, etc. Every person had some basis or tendency, whether congenital or acquired. These bases might be classed under three heads: (1) Tuberculous. This included scrofulous and cheesy conditions and was characterized by a tendency to distinctive metabolism. (2) The rheumatic, fibroid, characterized by constructive metabolism. (3) The neurotic, which might exist also in connection with either of the preceding. There was undoubtedly individuals who have originally a neutral basis, but in whom a basis is acquired in various ways. Two maxims should be borne in mind: (1) In persons having an acquired basis pathological products are more easily disposed of than in those in whom an inherent basis exists. (2) In all three bases the individual is subject to inflammatory and infectious disease. There were three sources of danger: (1) external influences, such as cold, (2) tuberculous infection, and (3) intercurrent indigestion.

As regards chronic disease of the pleura we had, in the first place, inflammatory remnants of acute pleurisy In subacute cases these might be in small patches, known as linear adhesions, and they are found situated along the anterior border of the lung or the diaphragm. These formed one mechanical hindrance to respiration. Other hindrances were found in the upper air-passages. and the latter contributed in some measure to impairing respiration by not permitting full oxygenation. In the second place, we had broad adhesions, and the most important of these was then situated in the subaxillary region. About eighty per cent. of such adhesions were in this location. These likewise were mechanical to respiration by interfering with proper expansion of the lung. Even small adhesions, especially when they were diaphragmatic, might cause stagnation in the apex. Broad adhesions which interfered with the motion of the diaphragm caused not only stagnation but a strangulation of a portion of the lung. The effect of either (depending on the amount of surface covered), might be to paralyze the lung and prevent proper oxygenation of the blood for such a length of time that the nutrition became impaired. Acute adhesions, although small, were liable to lead to others and it might be only after a considerable portion of the lung had become affected that the patient began to realize that he was at all sick. Very much depended on the location of the adhesions.

In the production of chronic disease we had internal and external causes, and it was necessary to consider the individual from his anatomical build and physiological capabilities. Had he physiological sufficiency of breathing in proportion to his general size? Anatomical and physiological insufficiency were external causes. Internally we had peri-bronchitis and all the forms of pleurisy. More and more territory became involved until there was not enough left for proper oxygenation of the blood.

Secondly, we had tubercular infiltration. The cause was the tubercle bacillus, and a pleuritic invasion lasting any length of time was always on a tubercular basis, with its tendency to destructive metabolism. The tubercular tendency was acquired on top of anatomical and physiological insufficiency and compression of the lung. In France it was now the accepted opinion that all chronic pleurisy was tubercular. He did not believe it was so in this country. Frequently it was the result simply of inflammation. Tuberculosis was apt to intervene, however, since stagnation in the apex of the lung and strangulation below presented a favorable field for the tubercle bacillus.

In the diagnosis of chronic pleurisy, Dr. Tyndale said, that more sins were committed than in the diagnosis of any other condition in medicine. Mistakes were often made because no friction sounds were heard and as a rule we did not have these at all in chronic pleurisy. There was nothing to guide one except certain changes in respiration and the presence of so-called râles which were merely catarrhal accompaniments. Time and time again he had known bronchial respiration to be attributed to cavities which did not exist. General râles sometimes were heard all over the chest which drowned all other sounds. In examining the chest he thought much more accurate results could be obtained by the use of the stethoscope than without its aid.

In the treatment the usual method was to employ internal remedies, but in all chronic pleurisies the adhesions were apt to be so dense that they could not be got rid of in this way. He did not pretend to say that all the adhesions could be removed in any way as yet known, though he hoped that at some future time this might perhaps be accomplished by surgical measures. All that he thought or expected to do was to remove enough of the more recent adhesions to reclaim sufficient territory in the lung to satisfactorily oxygenate the blood. Three methods of the treatment had been employed, namely: (1) internal medication, (2) locally hypodermic medication, and (3) surgical interference. The object in all cases, whether inflammatory or tubercular, was to do away with adhesions. In the tubercular form of disease it was impossible to cause resolution, and what was a resolvent for the inflammatory affections was an encapsulation for the tubercular. For inflammatory adhesions the most approved remedies were the iodides and mercury. Syrup of the iodide of iron was highly considered, and of late the German authorities had spoken with enthusiasm of the good effect of salicylate of sodium. Personally he believed that it was utterly useless except in cases where there was a rheumatic basis. In the tubercular form of the disease the most esteemed agents were arsenic and the hypophosphites. The latter sometimes did good, (how he did not clearly understand,) and arsenic was undoubtedly of great value in causing encapsulation.

When in chronic pleurisy the pathological changes did not after a time yield to internal medications it was advisable that the hypodermic method should be resorted to, and the agent which he had found most serviceable for this purpose was the iodine solution recommended by Dr. Shurley, of Detroit. It had in his hands yielded better results than any other that he had used. The dose employed was fifteen drops, and it never caused fever nor irritation. Sometimes it set up a new process, resulting in increased friction sounds and bronchitis, but this soon diminished. In certain cases he employed Koch's tuberculin also, and he said that he wished to say a word in defence of the latter. Used carefully, discriminatingly, and alternately with iodine injections, it would assist a great deal in clearing up the whole affected area. Cow's lymph, as employed by him, would also do the same thing.

In regard to surgical interference, he said he had found to his great disappointment that after adhesions are removed by this means there was still embarrassment to respiration; so that this method of treatment could not up to the present time be regarded as successful.

Sometimes, both in inflammatory and tubercular cases, internal remedies would not agree with the patient. Intercurrent indigestion made itself felt, and in any chronic condition of the lung this was of very great detriment to the patients. If, therefore, internal medication disagreed, nothing should be given, in addition to the hypodermic treatment, except general tonics for blood and fat making. As a fat producer there was nothing so good as cod-liver oil, which should be given in small doses at first and perseveringly kept up. For improving the condition of the blood the various forms of iron were to be used to the limit of the patient's capacity to digest them. If such tonics did not agree, the vegetable bitters and pepsin, pancreatin and other digestives used in their stead, in addition to the hypodermic injections. Gentian or quassia, and, to improve intestinal digestion, inspissated ox-gall had always served him well.

Finally, as an adjunct to the other treatment, mechanical treatment was called for. Massage of the parts was an excellent thing, and voluntary respiration was an invaluable aid. Dr. Leaming had recommended the continual inflating of the lungs by deep respiration, but he had found that it was impossible to get patients to keep this up, and he, therefore, directed that every fifteen minutes five deep inspirations should be taken. For the production of involuntary respiration he had found the pneumatic cabinet, devised by Dr. Williams, of Brooklyn, admirable; but the expense connected with it was an objection.

Dr. Paul Gibier said that, as Dr. Tyndale had stated, the majority of French physicians considered almost all chronic pleurisies tubercular. In certain cases that he had seen in Paris it was objected that the affection was not tubercular because the presence of bacilli could not be proved during life. After death, however, it was clearly shown that there was tuberculosis. At the Paris hospitals he had seen a great many autopsies on persons who had died from all sorts of causes, and he had found that slight pleuritic adhesions were extremely common. It was also very common to find evidences of tubercular processes (which might have entirely healed) in the lung, and it seemed probable that these adhesions were the result of tuberculosis. When adhesions were thick and extensive he did not think it would do to invoke the surgeon's aid. In regard to Koch's lymph, he had at first been very enthusiastic in his anticipations of brilliant results from its use; but when he found that tuberculous guinea-pigs who were inoculated with it, instead of getting better, as a rule, grew worse and died, he found his enthusiasm greatly diminished. He believed that the treatment by tuberculin and also by cantharidin, instead of causing incapsulation, tended rather to the spreading of the bacilli in the blood.

Dr. C. A. Leale said that in regard to surgical treatment he had come to the conclusion that it would be impossible to break up these chronic adhesions for the reason that they are so firm and so intimately associated with the parenchymatous tissue of the lung, that any attempt to do so would cause injury to the latter. In order to accomplish anything it would be necessary to introduce the hand, which would require a large opening, and all students of anatomy would at once recognize the great risk attending such a procedure. Inflation of the lung might be secured in children by means of whistles and other toys to blow on, and in older persons by wind instruments such as the cornet. He thought it was a mistake to use iodine injections, as experience had shown that this agent was exceedingly irritating to all serous cavities, and would, he thought, tend to increase the inflammation.

Dr. J. Blake did not understand why the term adhesive pleurisy should be used, and went on to say that he did not think Dr. Tyndale had sufficiently dwelt upon the frequency with which adhesions occurred at the base of the lung. The books constantly referred to tubercles at the apex, but he had found tubercles as frequently at the base as at the apex, and particularly in the right lung. Adhesions also occurred along the spinal column. He did not agree with Dr. Tyndale as to the advantage of using the stethoscope, and believed that a skilled examiner could auscultate more satisfactorily with the ear alone. In his opinion, tuberculosis was to be regarded, with very few exceptions, as secondary to chronic pleurisy, which tended to reduce vitality and result in cachexy. Pleuritic adhesions were an important factor, as they interfered so much with the normal movements of the lung. In 1885, Dr. Dixon had called attention to what he termed "bilious pleurisy." It was a mistake to give it such a name, and he believed that it was the same as what Dr. Tyndale called adhesive pleurisy.

As regards treatment, **Dr. White** spoke of bichloride of mercury and gold preparations, and said that he thought more highly of the latter, for the reason that while they produced the same effect on the diseased process they had a tonic, and not a depressing influence upon the system. He agreed with Dr. Tyndale as to the superiority of the hypodermic method. Administered in this way remedies acted more promptly, and, moreover, they did not undergo chemical changes as was the case in certain drugs when taken by the mouth. Iron was seldom well borne in these cases, and the only two preparations of it which he had found of much service were the arsenite and the hypophosphite. In the early stages he did not think any form of iron was desirable. He said he was very sorry to hear Dr. Tyndale resurrect Koch's lymph. We did not even yet know what it was precisely, and it might cause great danger to patients.

Dr. J. G. Truax referred to two autopsies which he had made within the last two days as bearing on some of the points under discussion. The first one showed the utter futility of attempting to remove old and extensive adhesions by surgical procedures. In this instance they were so firm that it was quite impossible to separate them from the surfaces to which they were attached without lacerating the lung substance, the diaphragm and the pericardium. The second case was one of general tuberculosis, and while tubercles were formed upon the pericardium, there were no pleuritic adhesions. In the treatment of adhesions he said that he relied almost entirely upon gymnastics to expand the lung.

Dr. Tyndale, in closing the discussion, said that he used the term adhesive pleurisy only as a convenient designation. He was glad to have heard the views expressed in regard to surgical treatment, as he had desired more information on the subject. As to iodine, he had used it only in the subaxillary region, and the preparation employed had not been attended by any unpleasant results. He agreed with Dr. White as to the importance of diaphragmatic pleurisy, and he considered it the most dangerous of all. He should have mentioned chloride of gold, as he had used it, and he believed it stimulated absorption. Two of his cases got well under it. In regard to the tubercular origin of pleurisy in France it was the opinion of Dr. R. C. M. Page that the character of the climate, combining equability with moisture had a good deal to do with this. In defence of Koch's tuberculin he said that one great difficulty was that in many cases false diagnosis led to false treatment. Another was that the doses usually given were entirely too large and were repeated at too short intervals, so that more or less violent reaction was caused. Personally, he never attempted any but the smallest doses.

American Orthopedic Association. — At the recent meeting of this Association held in the City of New York, September 20, 21 and 22, 1892, the following officers were elected to serve for the ensuing year: President, Dr. A. J. Steele, of St. Louis; Vice-Presidents, Dr. Samuel Ketch, New York, and Dr. Arthur J. Gillette, St. Paul; Treasurer, Dr. A. B. Judson, New York; Secretary, Dr. John Ridlon, 34 Washington Street, Chicago.

Recent Literature.

Colotomy; Inguinal, Lumbar and Transverse, for Cancer or Stricture, with Ulceration of the Large Intestine. By Herbert W. Allingham, F.R.C.S., Surgeon to the Great Northern Hospital; Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum; Surgical Registrar to St. George's Hospital. London: Baillière, Tindall & Cox. 1892.

Mr. Allingham's name has become identified with the operation of colotomy, and this monograph of one hundred and ninety-nine pages is an exposition of his ideas resulting from his personal experience. He has not gone into the history of the operation, nor does he refer at great length to the work of other authors, but desires to state the advantages and the disadvantages of the different forms of colotomy; namely, left lumbar, right lumbar, left inguinal, right inguinal and transverse. He believes that the operation of colotomy should be performed "as soon as it is found that the patient is beginning to suffer from incessant diarrhœa, from profuse bleeding, or from great pain which cannot be remedied by medicine."

The book is illustrated by a number of cuts, and by the detailed accounts of a number of cases. It is an excellent exposition of the subject, and can be read with benefit by surgeons. An index to the book would be of value. The printing and binding of the work is excellent.

The *Mütter Lectures on Surgical Pathology.* Delivered before the College of Physicians of Philadelphia, 1890–91. By Roswell Park, A.M., M.D., Professor of Surgery, Medical Department, University of Buffalo; Surgeon to the Buffalo General Hospital; Fellow of the German Congress of Surgeons; etc. Reprinted from the *Annals of Surgery*, Vols. XIII, XIV and XV. St. Louis: J. H. Chambers & Co.

The establishment of the Mütter Lectures has enabled the profession to receive the benefit of a triennial course of lectures from authorities on given subjects. These ten lectures were published in the *Annals of Surgery*, and now appear in book form. They by no means cover the whole field of surgical pathology, but, as the author states, deal with selected topics. They are interesting and valuable, not alone for the surgical work which appears from time to time in the body of the work, but also from the contribution which the literature of surgical pathology has made. These lectures make a book which can be read with interest and profit by surgeons. Dealing as they do with advanced ground, much of which must necessarily be tentative, the author has succeeded in introducing a judicial spirit in the presentation of surgico-bacteriological facts.

Modern Materia Medica. For pharmacists, medical men and students. By H. Helling, F.C.S. Third enlarged edition. New York: Lehn & Fink. London: The British and Colonial Druggist. 1892.

In this small volume on modern materia medica the writer arranges the drugs in alphabetical order and under each one considers briefly the preparation, properties and medicinal uses of these new and chiefly synthetical remedies. Between acetanilide and urethane the list includes aristol, bromoform, chloralamide, diuretin, naphthol and its derivatives, piperazine, sulphonal, etc. Such synthetical remedies as are not considered to have sufficient importance to be included in the main portion of the work, together with such substances as are not purely synthetical, are described more concisely in an appendix. Here one finds agaricin, various salts of bismuth, such as the salicylate, comutine, filicic acid, hæmoglobin, helleborein, spermine, strophanthin, tuberculin and wrightine. At the end of the volume are tables of the doses, the solubility and the melting and boiling points of new remedies. This work seems to be intended primarily for pharmacists, but for such of the medical profession as wish to glean quickly a little knowledge of the stream of new remedies which flows so abundantly, or a few useful suggestions about some one remedy, this book is probably the best they can own.

A Manual of Organic Materia Medica. Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms, for the Use of Students, Druggists, Pharmacists and Physicians. By John M. Maisch, Ph.M., Phar.D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Fifth edition, with two hundred and seventy illustrations. Philadelphia: Lea Brothers & Co. 1892.

This excellent and well-known work has been so much appreciated that it has reached a fifth edition although the fourth appeared about a year and a half ago only. The drugs are described tersely and well, and the text is abundantly illustrated by good cuts. The classification is the same as that followed in other editions; the pharmacopœal drugs are distinguished from the unofficinal ones by means of large type, except in some instances of the latter class where the importance of the drug justified special emphasis.

In this edition the author has given the proper accent for the systematic names of plants and animals; this will be a convenience to many readers.

Hygienic Requirements of School Furniture. By G. A. Bobrick, Civil Engineer. New York: Exchange Printing Co. 1892.

The author, in a pamphlet of fifty pages, well illustrated by wood-cuts, has presented the outs of the present methods of school-seating, and has suggested the use of an adjustable seat and desk.

This pamphlet would gain a larger audience had the author added a bibliography including all references mentioned in the text. That it is written by a man not versed in medical science is evident from the quotations from various authors. The pamphlet is suggestive, popularly written, and by any one interested in the seating of public schools should be read.

The fallacy in using the scale suggested at the end of the pamphlet seems to be that the sitting and standing heights do not always bear the same relation to each other in individuals of similar heights. C. L. S.

Beri-Beri. — The ship *H. B. Cann*, 170 days out from Iloilo, put into Hampton Roads last week with a large number of cases of beri-beri among the crew. Two had died during the voyage, and eight were removed to the hospital at Norfolk.

Pan-American Congress. — Dr. J. Collins Warren, of the Harvard Medical School, has accepted the Executive Presidency of the Section in Medical Pedagogics of the Pan-American Medical Congress.

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THE GASTRIC DISORDERS OF PHTHISIS, PATHOGENY AND TREATMENT OF VOMITING.

All physicians of much experience in the treatment of phthisis have remarked the frequency of cases in which nausea and vomiting, anorexia and indigestion are prominent symptoms. Such gastric disorders, besides being very intractable in themselves, seriously interfere with all effectual treatment of the disease. Although the physician always welcomes a return of appetite and normal digestion in his consumptive patients, and bases much hope on such return, confessedly the cases of pulmonary tuberculosis are few where vigorous appetite and digestion attend the disease from its inception. So certain is it that tuberculosis is dependent on failure of nutrition, and that lessened nutrition and impaired digestion go hand in hand — that the retention or recovery of a normal appetite with ability to digest and assimilate an abundance of nutriment is always an agreeable surprise.

The dyspeptic disorders of phthisis (which are as common in the country as in the city, despite Jaccoud's statement to the contrary) may be referred to functional disturbances or to organic lesions (acute or chronic gastritis, ulceration, atrophy). Functional dyspepsia may be of the ordinary atonic kind, or it may be febrile, with diminution or suppression of gastric juice. The more acute the disease, the more certain the patient is to have loss of appetite and indigestion from febrile causes.

Jaccoud[1] regards the anorexia and dyspepsia of phthisis as due in the great majority of cases to catarrh of the stomach, while Bouchard declares that he has met with dilatation of the stomach in seventy-five to eighty per cent. of all his phthisical patients.

Wilson Fox has tabulated the various diseases in the course of which chronic gastritis occurs, with the result that he finds it associated with phthisis with remarkable frequency (that is, in nearly half the tubercular cases examined). In sixteen cases out of thirty-one, tubercular disease of the lungs was present and he attributes these figures to the fact that all diseases which obstruct the venous circulation are liable to induce a chronic catarrhal condition of the stomach.[2]

Atrophy of the gastric glands is often an accompaniment of the final periods of phthisis, being secondary to prolonged gastric irritation and inflammation. Ulceration of the stomach, tubercular and non-tubercular, is rare as a coincident affection in pulmonary phthisis.

Vomiting is the most common, the most persistent and the most formidable of the symptoms of the gastric disorders of phthisis, its gravity being principally due to the fact that it prevents alimentation. This symptom has long engaged the attention of pathologists, and the very complexity of its causation has invested it with interest. Varda, who has written an able treatise on the subject,[3] enumerates some twenty-five causes, and insists on the generally reflex nature of the phenomenon. Habershon, in the *American Journal of Medical Sciences*, October, 1892, gives by far the best classification which we have seen. He describes the forms of vomiting in phthisical patients under the following heads:

(1) Peripheral, or sympathetic vomiting. (*a*) Irritation of the peripheral terminations of the pulmonary branches of the vagus. (*b*) Irritation of the pharyngeal and laryngeal mucous membrane, including the epiglottis. (*c*) Interference with the trunk of the vagus by enlarged bronchial glands (tracheo-bronchial adenopathy).

(2) Vomiting due to the violence of the cough (so-called mechanical vomiting).

(3) Gastric vomiting proper (irritation of gastric branches of the vagus).

(4) Central irritation (tubercular meningitis).

This writer gives some good hints as to the treatment of all these forms. Food of a bland and easily digested kind should be ordered; all condiments, vinegar, acid drinks, and concentrated alcoholic beverages should be discarded. When vomiting is frequent or severe, it is hopeless to attempt to treat the patient unless rest in a recumbent posture is insisted upon. In such cases, also, liquid nourishment is advisable. The sympathetic vomiting from irritation of the pulmonary branches of the vagus, though most intractable and difficult to deal with, will nevertheless sometimes subside as soon as the patient is kept in bed and put on a liquid diet. Medicinal treatment alone, without these precautions, will invariably fail. To allay any irritability of the stomach which may be present, bismuth with bicarbonate of soda and some sedative as opium or morphia, hydrocyanic acid or bromide of potassium, should be given internally. Soda water is a valuable sedative, and is suitable either alone or with milk.

In the large class of cases described under the name of *mechanical vomiting*, there is frequently an irritability of the throat or stomach present. In the throat affection, soothing and slightly astringent gargles will do much to lessen the irritability; for instance, a sedative gargle of bromide of potassium and borax with opium. For ulceration of the fauces, a powder of iodoform, borax and morphia dusted or blown upon the ulcerated surface once or twice daily.

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[1] Curabilité et traitment de la phthisie pulmonaire, Paris, 1881, p. 250.

[2] Diseases of the Stomach, Am. Ed., p. 150.

[3] Thèse de Paris, 1876.

Exhausting efforts of coughing frequently attend the expulsion of sputum; here alkalies and iodide of potassium with the ordinary expectorants aid the expulsion of the secretion. Opiates are to be given in small doses when the amount of secretion is small, and there is an undue irritability of the bronchi.

Where internal remedies fail, recourse may be had to inhalations. For moist inhaling, a sedative alkaline inhalation, like the *vapor coninæ* of the Ph. Br., is to be preferred or better still, a mixture of the *succus conii* with ammonia (ten drops of the liquor ammoniæ to the pint of hot water). When the cough is violent at night or in the early morning, the dry inhalations are of more service. Drops of the liquid remedy are placed upon the sponge or cotton wool in the ordinary oro-nasal respirator. Menthol or thymol dissolved in alcohol or spirit of choloform may be used alone or in combination with compound tincture of benzoin and eucalyptus. A favorite prescription is the following:

℞	Ol. eucalypti	ʒ ii.
	Tinct. benzoin co.	ʒ iii.
	Thymol or menthol	ʒ i.
	Spirit. chloroform	q. s. ad. ℥ i.

M. Ft. inhalatio.

Ten drops at a time to be used on cotton-wool in an oro-nasal respirator.

By far the most obstinate cases are those in which there is excessive irritability of the stomach. Vomiting follows shortly after eating. Recourse may here be had to liquor potassæ (five to ten minims for a dose) with columbo and a few minims of deodorized laudanum. The well-known combination of creasote and opium is often of great benefit. Finally, if all other remedies fail to control vomiting, the physician may resort to hypodermic morphia, one-sixth to one-fourth of a grain being injected in the epigastric region, the patient being kept in bed.

In all cases of vomiting with the cough, the patient should be recommended not to exert himself after a meal, but to lie down from half an hour to an hour, while in extreme cases he should be confined to his bed.

For the relief of the severe forms of ulceration of the epiglottis or larynx which cause both cough and vomiting from the difficulty and pain in deglutition, a cocaïne spray, applied before a meal, will often render a patient able to take and retain food.

In the dyspeptic disorders and vomiting due to gastric catarrh, it may be sufficient to say that absolute rest, suitable and unirritating forms of nourishment, fluid diet, if necessary, and alkaline sedative remedies are the well-known principles on which such cases should be treated.

The comma bacillus appears to be approaching toward a full stop.

CHARAKA-SAMHITA.

The medical literature of ancient and mediæval India is extensively voluminous. Besides a large number of comprehensive treatises there are also several abridgments. It appears that in ancient times all professors of medicine considered it incumbent upon themselves to write text-books for their students, or at least to make an abridgment of somebody's else treatise. The oldest of these treatises and the most famous of them is "Charaka-Samhita," which appeared at least as early as the ninth or tenth century, and perhaps very much earlier. The translation of the "Charaka" into English has been undertaken by an eminent scholar, Abinash Chandra Kaviratna, of Calcutta, who is himself a practitioner of the Hindu system of medicine. The introduction of this work states that Bharadwāja obtained the sacred "Science of Life" from Indra the chief of the celestials, who had acquired it from Prajapati, a son of Brahman. Bharadwāja gave it to another wise man named Punarvasu, a descendant of Atri, the sage, by whom it was taught to six disciples. The name "Charaka" arose from the fact that a man of that name edited and corrected the treatise written by one of the pupils of the great son of Atri. The treatise discourses at length on disease and its causes, and also instructs the world how to avoid different diseases. All through the work there is a curious mixture of poetry and materia medica, of mediæval physiology and good common-sense. Many parts of the book are still regarded in India as high authority in medical matters, and it is the foundation of a system which is professed and practised by a very large number of persons.

Many of the prescriptions have *time* as one of the principal ingredients, as for instance, in acute fever, fomentations, time, gruel of barley and decoction of bitters is the proper prescription. The amount of time is not given with the same accuracy as the other ingredients, and is probably intended to be followed by the ancient representative of *q. s.*

The work is in the form of lessons, each lesson being devoted nominally to a different subject, although often rambling off from the title. It begins on longevity, since that was the original object for which Bharadwāja sought the goddess Indra.

Medical abuses similar to those existing to-day must also have been in existence some centuries ago, for we find that the illustrious son of Atri tells his disciples that "the unknown drug is like poison, or weapon, or fire or thunder, while a well-known drug is like nectar. Drugs unknown by name, appearance and properties, or misapplied even if known, produce mischief. Well applied, a virulent poison may become an excellent medicine, while a medicine misapplied becomes a virulent poison. A thunderbolt falling upon the head may leave a hope of life, but a medicine prescribed by an ignorant person will not leave a patient a hope of life. It is better to drink the poison of a snake or the solution of copper, or swallow red hot balls of iron, than assume the garb of a learned man and take food and drink and money from one afflicted with diseases and soliciting relief."

The translation of this vast work into English will bring it before many who previously had heard of it, but were unable to judge of its merits. The book is of great importance both to Sanskrit scholars and to medical men who take an interest in the historical development of medicine, and we hope to lay before our readers, as the translation progresses, any points of special interest which it may contain.

MEDICAL NOTES.

A Suit in Consequence of the Fire Island Purchase, has been entered in the circuit court on Long Island, brought by William H. Yoang as proprietor and the Board of Health of Islip against Governor Flower and Health Officer Jenkins. It is reported that the grand jury will be asked to indict Dr. Jenkins. The Islip Board of Health claims that the State had no right to acquire Fire Island, as a law exempted Fire Island from being used in any part as a quarantine station. The claim is also made that Governor Flower and Dr. Jenkins violated the law and that the governor sent troops to guard his own personal property, as Fire Island could not be purchased by the State without a special act of Legislature.

Some Disadvantages of the Metric System. — Although the metric system in prescription-writing offers certain advantages over the system at present in use, there are certain disadvantages occasionally made evident by mistakes in copying prescriptions. We have recently noticed a prescription which has been in a large number of medical journals of the world in which the principal ingredient, by two different positions of the decimal point, has been made to vary in amount from .05 and 0.5 to 5., thus making the largest dose one hundred times that of the smallest. That this was either a clerical or typographical error was shown by the identity of the rest of the prescription. Again, in a recent excellent article upon the treatment of cholera in a contemporary, by a similar error the strength of the salt solution for intravenous injection, as recommended by Cantani, was ten times too great.

NEW ENGLAND.

The Massachusetts Association of Boards of Health met during the week in Lynn. Several matters connected with sanitation were discussed, especially on the disposition of garbage.

The McLean Asylum for the Insane which has for over seventy years been in Somerville, is soon to be removed to Waverley. The construction of the new buildings has already begun. A memorial building has recently been offered by Mr. George P. Upham in memory of his son George P. Upham, Jr., who died a little over a year ago. The building has been designed by Mr. William Y. Peters. It is colonial in character. The dimensions of the whole are about eighty-five by one hundred feet. The interior contains nine suites, each consisting of a sitting-room, bedroom, bath-room and closets, two private halls, reception rooms, a dining-room, a billiard room and a Turkish bath for patients; and, provision for nurses and attendants, as well as for heating, cooking and all domestic service.

Cholera as a Reformer. — In a recent bulletin of the Connecticut State Board of Health, the secretary thus sums up the benefits which cholera has conferred upon mankind: "The most notable movement in matters concerning public hygiene which has happened for many years, is the simultaneous effort during the last month or two, in almost every town and city and village, to be clean. The great apostle of hygiene in this reformation is the Cholera — Cholera is a practical preacher, and demonstrates its doctrines by its works. Wherever it finds a people disregarding the lessons it has taught before, it wastes no time with argument, — it simply kills them. Europe and America both have had repeated teachings of this sort, and are wise in making the lessons practical. It is to be hoped they will not be too tardy or too negligent in obeying the behests of this uncompromising, arbitrary and pitiless instructor in nature's laws of health. Cholera has been very aptly called the great sanitary inspector of nature. When gregarious man too openly defies the laws of health, and wantonly falls into beastly habits of filthiness, the Cholera starts on its inspecting tour and inculcates the laws of healthy living, with a decision and emphasis that is best measured by the graves it fills. Cholera is the author of modern sanitation, and notwithstanding the destructive energy with which it acts, it has been a benefactor of the human race, having saved more lives by the reforms it has produced, than it has destroyed."

NEW YORK.

St. Luke's Hospital. — The annual meeting of the Board of Trustees of St. Luke's Hospital was held on St. Luke's Day, October 18th. Dr. Frederick Barnard, who has been Assistant Superintendent for the past twenty-three years, tendered his resignation on account of ill health. Dr. L. Bolton Bangs resigned his position as attending surgeon, and he and Dr. Frank H. Markoe were appointed consulting surgeons. The principal topic of discussion at the meeting was the building of the new hospital, although it was stated that the present site has not yet been sold. It was announced that the daughter of a former Trustee has offered her country estate, valued as nearly $100,000, as a home for convalescent patients from the hospital, on condition that a fund be provided for the permanent maintenance of the home. The estate consists of thirty acres situated not far from the new site of St. Luke's. The house is finely located, overlooking the Hudson, and is capable of accommodating forty or fifty inmates. It is estimated that about $200,000 will be required to maintain the convalescent home, and as the Trustees do not feel at liberty to take this sum from the present endowment resources of the hospital, they will make an effort to secure the amount by voluntary contributions. Such a home will be a very useful and satisfactory addition to the hospital, as the crowded condition of the wards often renders it necessary to discharge patients a considerable time before they are physically fit to return to their usual avocations.

Expenses of the Health Department.—The Board of Estimate and Apportionment has fixed the appropriation for the expenses of the Health Department for the year 1893 at $432,036. This is only $7,800 less than the amount asked for by the President of the Board of Health.

The First Immigrants direct from Europe to be landed at the immigrant station at Ellis Island since the President's cholera proclamation, were taken from the steamer *Dubbledam*, of the Netherslands line, on October 16th. There were 300 passengers, who sailed from Rotterdam, where they had been under observation for five weeks and where their baggage had been subjected to disinfection by steam.

The City's Refuse. — A committee appointed some time ago by the Mayor to suggest a method of getting rid of the city's refuse which will be free from the disadvantages attending the present system of dumping it in the ocean, has just made its report. This alludes to various plans of cremation or of desiccation which have been proposed, but the committee is not convinced that these are at present practical, although it is believed that ultimately such a disposition of this material must be sought. The solution of the immediate problem which they propose is based upon the fact that garbage is not harmful where deposited under salt water and kept there. The city has authority to enlarge the area of Riker's Island by filling up the surrounding shallow water, protecting the outer border by a crib, or otherwise. For the purpose of this filling no separation of the various material, collected by the Street-Cleaning Department would be necessary, and it is estimated that the work would require the total collections of the department for several years. The surface of Riker's Island could thus be increased by 394 additional acres, and the committee asserts that by disposing of the refuse in this manner $180,000 per annum could be saved to the city.

Foot-Ball Accident. — A Spanish lad, eighteen years of age, who was a student at Eastman College, Poughkeepsie, recently died of concussion of the brain resulting from an injury received in playing foot-ball. While running for the ball, his head came in contact with great violence with that of another player.

Foreign Body in the Brain. — A man recently died in the hospital at Newark, N. J. who had had a knife-blade protruding into the substance of his brain since boyhood. His death was produced by entirely other causes, and at the autopsy it was found that the blade extended nearly an inch beyond the dura mater, while its broken extremity was on a level with the external surface of the cranium.

Miscellany.

THE TREATMENT OF MYXŒDEMA.

The *Lancet* reports a case of myxœdema now under treatment by the use of fresh thyroid glands as food. The patient is a woman aged forty, who for nearly three years has been under treatment for myxœdema. In every respect it is an extremely typical case: persistently subnormal temperature, general swelling of the integuments, dryness of skin, partial baldness, clumsiness of movement, slowness and thickness of speech, etc. The patient was admitted to the Royal Free Hospital in July, under the care of Dr. Hector Mackenzie, for the third time, in order to be treated by hypodermic injections of thyroid juice. In consequence of the difficulty experienced in obtaining the latter Dr. Mackenzie was induced to try the effect of feeding the patient on fresh thyroid glands. The result has been a very striking improvement. The myxœdematous swelling has entirely disappeared, the temperature has become steadily normal, the skin moist and the speech natural. The patient says she feels as well as ever she did in her life. The change in her appearance is such that the existence of the disease would probably not suggest itself to any one seeing her now for the first time. At first the thyroids of two sheep were given every day finely minced. This was probably more than was advisable, because a remarkable acceleration of the pulse ensued, which lasted until the thyroids were discontinued for a time. In view of the recent observations on the advantage of the thyroid juice when given in the form of injections this method, if responding favorably to further observations, would seem to constitute a distinct advance. It can be easily carried out and is free from risk, which cannot be said of the subcutaneous mode of treatment.

POISONING IN INDIA.

Since the abolition of Thuggee in India by the British government the principal native means of homicide is by poisoning. The Thugs were a remarkable brotherhood of murderers and robbers which existed from the time of the first Mahomedan dynasties up to about 1860. They were of all castes of Hindus as well as Mahomedans, united in the worship of the Goddess Kali, a very sanguinary deity. Their mode of killing was by strangulation. They travelled in bands disguised as merchants or pilgrims and had a very complete organization. In nine years, more than two thousand of them were arrested and either hanged or transported. Scarcely any part of the peninsula was free from them. Since their suppression, poisoning has become more frequent, and this is now only slowly diminishing. It is still pursued systematically as a trade, both for the purposes of robbery and also to get rid of objectionable people. It is not by any means confined to professional murderers, but is a very common crime among the population at large. The police authorities are fighting it with vigilance and perseverance, and the good result of their work has already become evident. Among the poisons a common one is the datura, of which the seeds are commonly used, often powdered to mix with food, or a distilled essence. It is often used for drugging with no intention of destroying life. The two poisons most commonly used are opium and arsenic, the former being the favorite for infanticide and suicide. The statistics for ten years in Bombay give cases of poisoning by arsenic 507, opium 151, datura 74, copper 50, pounded glass 31, out of a total of 947 cases. During the same period the number of cattle poisoned was 743, the great majority by arsenious oxide. The number of cases a year in India of intentional poisoning is very large, but poisoning by snake-bite, mostly accidental, is much larger, the lowest estimate from the latter being over 20,000 a year.

SINS AGAINST SANITATION AT ROUEN AND HAMBURG.

The Paris correspondent of the *Lancet* sums up an extended account of the insanitary condition of Rouen as follows:

"To sum up, at Rouen only one house out of five — 3,000 out of 15,000 houses — has a supply of wholesome drinking-water; only one cesspool out of three cesspools has any pretence to be water-tight; more than 10,000 cesspools allow their foul liquid contents to escape in the subsoil; out of 162 kilometres of streets only 42 kilometres of streets have sewers. Many of the streets are devoid of sunlight. The sewers — the surface drainage — poison the confined atmosphere. What wonder that the infant mortality is the highest in France and that the general mortality reaches the alarming figure of 35.32 per 1,000 of the population. What wonder that typhoid fever is endemic, that diarrhœa has assumed an epidemical intensity, and that cholera has found in Rouen ready victims. May the mischief go no further, and may the warning be taken in time. Good water is available, good drainage is possible; both should be at once secured."

The Hamburg correspondent makes the following statement in regard to the new water-supply and other matters at that city:

"The authorities are discussing the question of a new water-supply for the town. It has now been determined to continue to employ for drinking-purposes the water of the Elbe, which contains all the sewage of Magdeburg, a city of 160,000 inhabitants, instead of going some forty miles to the north-east to the splendid Holstein lakes. No doubt economy is the reason, a quality for which Hamburg is celebrated. The newspapers are full of the treatment awarded to some medical candidates from the German universities who came here to take charge of the sick. They were told they would receive 20*s.* a day, but the moment the epidemic began to decline and it was considered desirable to diminish their number they were tendered 3*s.* 4*d.* a day — the pay of a day laborer — and when this was indignantly declined they were dismissed peremptorily with nothing. The Hamburg authorities have had to pay the common working men who removed the sick, etc., 15*s.* a day. This action has not tended to increase the sympathy felt for the town in the rest of Germany."

ZYMOTIC DISEASES.

In his recent introductory address at Owens College, Manchester, Dr. Broadbent, in speaking of the term "zymotic disease," said that when he was a student the word had already obtained a footing in medical terminology, but under protest from many distinguished men who distrusted theory of all kinds. It was pointed out that the analogy between the action of yeast on a solution of sugar and the course of a fever was but weak at best, and was open to the objection that the successive stages of incubation, invasion and decline might represent not the life and work and organism in the system, but the stages of the reaction of the system. Especially were we warned against basing treatment upon such uncertain grounds. Now we know that the parallel holds good down to the smallest particular, just as the yeast grows and multiplies with extraordinary rapidity, splitting up the sugar into carbonic acid and alcohol till its further progress is arrested by the alcohol which is a product of its own activity, so the bacteria multiply at the expense of the fluids of the body, form ptomaines which, like alcohol, act as poisons to the nervous system, and which, again, like alcohol, bring the action of the microbes to an end.

Our methods of protection against fevers are now entirely derived from definite knowledge of the life-history of the bacteria or microbes by which they are caused, and our treatment will be more and more determined by such knowledge. We are shown, also, how the defensive processes may be reinforced or impaired. It is well known that drunkards fall ready victims to fever, erysipelas, and septic diseases generally, and the general deterioration of the tissues produced by alcoholic excess has been accepted as a sufficient explanation. But this, while true, is not the whole truth. A bacteria culture of a given kind and degree of virulence is injected under the skin of a rabbit, local inflammation, and perhaps abscess follows, but the animal does not fall a victim to the poison. In another rabbit, or in the same at another time, an injection of the same kind is made, but simultaneously a dose of chloral is injected into some remote part of the body; the local reaction is imperfect, general infection rapidly takes place, and the creature very soon dies. Chloral paralyzes the leucocytes, so that when bacteria are introduced into the subcutaneous tissue, they take no notice of them, but remain perfectly passive, and leave the way open into the lymphatic spaces. Alcohol in excess has a similar action on the leucocytes, and this, as well as the deteriorating influence on the tissues of chronic alcoholism, predisposes to septic infection. A single debauch, therefore, may open the door to fever or erysipelas. Protective inoculations against various diseases have been discovered, and much valuable work is now being done in different parts of the world.

PERSONAL RECOLLECTIONS OF DELIRIUM.

In a paper on "Sleep, Dreams, and Delirium," Dr. Joseph Coats points out certain differences between dreams and delirium.[1] In dreaming the activity of the nervous centres, occurring during sleep, produces little or no impression upon the consciousness, but delirium occurring when a person is awake often produces a marked retention of activity in the centres of consciousness. The consciousness may be so dulled that the phenomenon may approach dreaming, but this he believes to be exceptional. In delirium, what passes through the mind may be retained there and believed to have actually occurred, in dreaming, this practically does not happen. The author quotes his own experience when attacked with delirium, and gives at length a letter recently received from Dr. W. T. Gairdner, describing an account of his experience in the delirium of typhus fever.

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[1] Glasgow Medical Journal, October 8th.

While still a medical student Dr. Gairdner had a severe attack of typhus fever, being for some time delirious, then comatose. At the time, he was about to write a graduation thesis on the subject of "Death," and this subject was very prominent during the delirium. Although fully aware that he was soon likely to die, it did not alarm him at all. He remembers a feeling of unrest, dissatisfaction and apparent anxiety about something that had got to be done and could not. A little later he became convinced that he was dead, but this fact did not in the least distress or horrify him, he had, on the contrary, a curiosity to witness his own autopsy, and he retains a most vivid impression of standing by his own post-mortem examination in the theatre of the hospital with much interest in the question whether ulceration of Peyer's patches would be found in the intestines or not. He also retained during his convalescence a vivid impression of having seen his remains recently buried. After the coma which followed this delirium had passed, a delirium of a more quiet form came on in which the sense of distressing unrest had entirely disappeared. The last impression left upon his mind before recovering normal consciousness was a vision of the resurrection. As convalescence progressed it seemed to him that he had acquired a new faculty, that of dreaming at will. He could for some time together give way to these visions in perfect comfort and with ecstatic feelings of enjoyment. The strictly intellectual power was being rapidly recovered in the very midst of these voluntary visions, so that he could either shut his eyes and dream or open them and think as he pleased. The thesis which he had begun to think over but had not written before his sickness, arranged itself in his mind during his convalescence and was subsequently written out upon the plan which he had devised and completed in moments alternating with his visions of Elysium. He concludes by saying that this thesis could not have been very bad after all since it won him a gold medal.

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THERAPEUTIC NOTES.

The Treatment of Diarrhœa by Dermatol. — Colasanti, as a result of extensive investigations, has determined that dermatol is a valuable agent in the treatment of diarrhœas of different origin, especially that due to tuberculosis.[1] It is administered in capsules or suspended in mucilage in doses of from two to seven grains. From one-half to one and one-half drachms may be given in twenty-four hours. If colicky pains are present, opium may be combined with it. In rebellious cases it sometimes takes three to four days before results are noted. The author has observed no bad results.

The Treatment of Epilepsy by Antirabic Injection.— Following the report that the preventive inoculation for hydrophobia in the Pasteur Institute was found to stop epileptic attacks, De Giovanni[2] tried this method in a case of epilepsy of five years standing with immediate good results. The attacks ceased entirely, and great amelioration in mental symptoms was obtained.

Mallein.[3] — Shortly after the introduction of tuberculin as a diagnostic agent for tuberculosis in cattle, Kalling prepared an extract of the bacillus Mallei. the specific microbe of glanders, with a view to using it as a diagnostic agent for this disease. The experimenter himself, by a unlucky accident became infected and died. Later, Preusse was able to make practical use of this method during an outbreak of glanders in certain large stables. In case the animal is sound, little or no disturbances follows the injection. If, however, it is infected, there is a marked rise of temperature. These experiments have been verified by several observers.

A New Local Anæsthetic. — It is reported in the Institute of Medicine in Mexico an alkaloid producing local anæsthesia has been discovered in the plant commonly known as "blood weeper."

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[1] Medical Press, September 28th.

[2] Rif. Med., July 12, 1892.

[3] British Medical Journal, September 24th.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 14, 1892, TO OCTOBER 20, 1892.

The leave of absence granted First-Lieut. Samuel R. Dunlop, assistant surgeon, is extended one month.

Lieut.-Col. Charles R. Greenleaf, deputy surgeon-general, is appointed member of a board of officers, to meet at Helena, Montana, on the 1st day of November, 1892, or as soon thereafter as practicable, for the purpose of selecting a site for a military post at that place, as provided for under an Act of Congress, approved, May 12, 1892, entitled "An Act to establish a military post at or near the city of Helena, in Lewis or Clarke County, in the State of Montana."

First-Lieut. Allen M. Smith, assistant surgeon, U. S. A., is relieved from further duty at Fort Yellowstone, Wy., and will proceed to Fort Custer, Montana, and report to the commanding officer of that post for temporary duty.

Leave of absence for one month, to take effect upon his relief from duty at Fort Columbus, N. Y., is granted Major Johnson V. D. Middleton, surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 22, 1892.

L. W. Spratling, assistant surgeon, ordered to Receiving-ship "St. Louis."

Lewis Morris, assistant surgeon, from Receiving-ship "St. Louis" and to the U. S. S. "Monocacy."

George Rothganger, assistant surgeon, from the U. S. S. "Monocacy" and ordered to proceed home.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE THREE WEEKS ENDING OCTOBER 15, 1892.

Purviance, George, surgeon. Granted leave of absence for seven days. October 12, 1892.

Banks, C. E., passed assistant surgeon. To rejoin station at Portland, Me October 14, 1892.

Devan, S. C, passed assistant surgeon. Ordered to Washington, D. C., for special duty. September 29, 1892.

Kalloch, P. C., passed assistant surgeon. To rejoin station at Boston, Mass. October 14, 1892.

Wasdin, Eugene, passed assistant surgeon. To rejoin station at Charleston, S. C. October 3, 1892.

McIntosh, W. P., passed assistant surgeon. To proceed to Buffalo, N. Y., for temporary duty. September 25, 1892. To proceed to Ellis Island for temporary duty. September 30, 1892. To report in person to the supervising surgeon-general. October 8, 1892. To rejoin station at New Orleans, La. October 10, 1892.

Pettus, W. J., passed assistant surgeon. To proceed to New York, N. Y., for temporary duty. September 25, 1892.

Magruder, G. M., passed assistant surgeon. To proceed to Tacoma, Wash., for special duty. October 7, 1892.

Cobb, J. O., passed assistant surgeon. To rejoin station at Detroit, Mich. October 7, 1892.

Stoner, J. B., passed assistant surgeon. To rejoin station at Pittsburgh, Pa. October 3, 1892. Granted leave of absence for seven days. October 4, 1892.

Rosenau, M. J., assistant surgeon. Relieved from duty at Cape Charles Quarantine. October 11, 1892. Granted leave of absence for thirty days. October 13, 1892.

Cofer, L. E., assistant surgeon. Granted leave of absence for three months on account of sickness. October 15, 1892.

Gardner, C. H., assistant surgeon. To report to the medical officer in command, San Francisco, Cal., for duty. October 12, 1892.

FIFTH INTERNATIONAL CONGRESS OF OTOLOGY.

A Prize for a New Instrument.

Baron Leon von Lenval, of Nice, has offered a prize of three thousand francs for the best instrument for improving the hearing power of those partially deaf.

It is to be constructed on the principle of the microphone and to be convenient to carry.

Instruments which are to compete for the prize, should be sent before the 31st day of December, 1892, to Professor Politzer, President of the jury in Vienna. Only finished instruments will be allowed in competition. They must be complete in mechanical construction.

The publication of the decision of the jury, and the giving of the prize, will take place at the Fifth International Congress of Otology, in September, 1893.

The members of the jury are: Dr. Politzer, Vienna; Dr. Gellé, Paris; Dr. Pritchard, London; Dr. St. John Roosa, New York; Dr. Grazzi, Florence.

SOCIETY NOTICE.

The Surgical Section of the Suffolk District of the Massachusetts Medical Society. – This Section will hold its first meeting Wednesday, November 2, 1892, at 8 o'clock in the Medical Library, 19 Boylston Place.

The following communications will be read:

"Forcible Straightening for Angular Contraction of the Knee," Joel E. Goldthwaite, M.D.

"Total Extirpation of the Uterus; Improved Method of Treating the Stump," C. P. Strong, M.D.

"Remarks on Nephrolithotomy; Report of a Case," Paul Thorndike, M.D.

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

RECENT DEATH.

Elijah C. Kinney, M.D., of Norwich, Conn., died October 19th, aged sixty-three years. He graduated from the New York Medical College in 1858, and has been President of the State and other medical societies.

BOOKS AND PAMPHLETS RECEIVED.

Bulletin of the Association of American Medical Colleges. 1892.

Nineteenth Annual Report of the Board of Health of the City of New Haven, 1891.

Characteristics. By S. Weir Mitchell, M.D., LL.D. (Harvard). New York: The Century Co 1892.

Charaka-Samhita. Translated into English. Published by Avinash Chandra Kaviratna. Calcutta. 1892.

Modern Materia-Medica. By H. Helbing, F.C.S. Third enlarged edition. New York: Lehn & Fink. 1892.

Transactions of the Washington Obstetrical and Gynecological Society. Volume iii. June, 1889, to May, 1890.

Thirty-seventh Annual Report upon the Births, Marriages and Deaths in the City of Providence, for the Year 1891.

Proceedings of the United States Naval Institute. Vol. xviii. Published quarterly by the Institute. Annapolis, Md.

Ninth Annual Report of the Superintendent of Health of the City of Providence, for the Year ending December 31, 1891.

Golden Rules of Surgical Practice for the Use of Dressers. By E. Hurry Fenwick, F.R C.S. Third edition. Bristol: John Wright & Co. 1892.

Medical Microscopy. By Frank J. Wethered, M.D., Member of the Royal College of Physicians, etc. Philadelphia: P. Blakiston, Son & Co. 1892.

Treatment of Fractures of the Lower End of the Humerus and the Base of the Radius. By John B. Roberts, A.M , M.D., Philadelphia. Reprint. 1892.

The Mastoid Operation, including its History, Anatomy and Pathology. By Samuel Ellsworth Allen, M.D. Cincinnati: Robert Clarke & Co. 1892.

Anæsthetics, Their Uses and Administration. By Dudley Wilmot Buxton, M.D., B.S. Second edition. Philadelphia: P. Blakiston, Son & Co. 1892.

An Epidemic Skin Disease. By Thomas D. Savill, M.D., Medical Superintendent of the Paddington Infirmary. London: H. K. Lewis. Reprint. 1892.

Congenital Obliteration of the Bile-Ducts. By John Thomson, M.D., F.R.C.P., lecturer on diseases of children, Edinburgh, etc. Edinburgh: Oliver & Boyd. 1892.

A History of Epidemic Cholera as it appeared at the Baltimore City and County Alms-house in the summer of 1849. By Th. H. Buckler. Baltimore. 1851.

Recent Progress in Diseases of the Brain and Nervous System. Two Cases of Conservative Surgery. By F. Robert Zeit, M.D., of Medford, Wis. Reprints. 1892.

On the Value of a New Coca Base: Benzoyl, Tropeïn (Tropacocaine), as a Local Anæsthetic. By Arthur P. Chadbourne, M.D., Boston, Mass , U. S. A. Reprint. 1892.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. xiii. Sialagogues-Sutugin. Washington: Government Printing Office. 1892.

Memoranda on Poisons. By Thomas Hawkes Tanner, M.D., F.L.S. Seventh American Edition. Revised by John J. Reese, M.D. Philadelphia: P. Blakiston, Son & Co. 1892.

A Manual of Physics, being an Introduction to the Study of Physical Science. By William Peddie, D.Sc., F.R.S.E., of Edinburgh. New York: G. P. Putnam's Sons. 1892.

A Manual of Medical Jurisprudence and Toxicology. By Henry C. Chapman, M.D., Professor in the Jefferson Medical College, Philadelphia. Philadelphia: W. B. Saunders. 1892.

Tuberculosis of Bones and Joints. By N. Senn, M.D., Ph.D., Professor of Practice of Surgery in Rush Medical College, etc. Illustrated. Philadelphia: The F. A. Davis Co., Publishers. 1892.

Die chirurgische Behandlung der chronischen Eiterungen im Becken. Zur Behandlung der chronischen Beckeneiterungen: Die Resektion des Uterus. Von Dr. Theodor Landau. Reprints. 1892.

Atlas of Clinical Medicine. By Byron Bramwell, M.D., assistant physician to the Edinburgh Royal Infirmary. Vol. ii. Part 1. Edinburgh: T. & A. Constable at the University Press. 1892.

The Physiological Importance of the Proximate Principles and their Practical Utility in the Food-Stuffs and in the Nutritive Processes of the System. By William Henry Porter, M.D., New York. Reprint. 1892.

The Ready-Reference Hand-book of Diseases of the Skin. By George Thomas Jackson, M.D , chief of clinic and instructor in Dermatology, College of Physicians and Surgeons, etc. Philadelphia: Lea Brothers & Co. 1892.

Diseases of the Kidneys and Bladder. A Text-book for Students of Medicine. By W. F. McNutt, M.D., M.R C.S., L.R.C.P., Professor of the Principles and Practice of Medicine, University of California, etc. Philadelphia: J. B. Lippincott Co. 1892.

A Manual of Medical Jurisprudence. By Alfred Swaine Taylor, M.D., F.R.S. Revised and edited by Thomas Stevenson, M.D. Eleventh American from the twelfth English edition. By Clark Bell, Esq. Philadelphia: Lea Brothers & Co. 1892.

Ueber Tropacocaïn, ein Benzoyl-Pseudo-Tropeïn, eine neue Coca-Base und dessen Werth als locales Anæstheticum. Von Dr. med. Arthur P. Chadbourne, aus Boston, Mass , U. S. A. Sonderabdruck aus "Therapeutische Monatshefte," 1892, September.

Geographical Pathology: an Inquiry into the Geographical Distribution of Infective and Climatic Diseases. By Andrew Davidson, M.D., F.R.C.P., Ed , professor of chemistry, Royal College, Mauritius. South-Eastern Asia, Indian Archipelago, Australia and Polynesia, Africa, America, Europe, Northern and Western Asia, India, Ceylon, Burma. New York: D. Appleton & Co. 1892.

Original Articles.

SURGICAL METHODS FOLLOWED IN PRIVATE PRACTICE DURING THE YEAR 1891; WITH A RESUME OF RESULTS IN ONE HUNDRED AND FOURTEEN CASES OPERATED UPON.

BY M. H. RICHARDSON, M.D., AND J. G. MUMFORD, M.D.

The following cases are consecutive ones occurring in private practice during the past year. Few of these present points of unusual or remarkable interest; but the series as a whole is instructive in that it shows how the so-called misfortunes of surgery may be avoided with reasonable care in operative detail.

That there is in the list no case of septicæmia is not any cause for congratulation; but the avoidance of a single case of suppurative fever, with one exception, is gratifying, and a few remarks on the methods by which this immunity was attained may be not uninteresting. The results as a whole seem to show that with reasonably clean surroundings and personal cleanliness on the part of the surgeon, private operative work compares favorably with that of our hospitals where the most elaborate attention is given to every point of aseptic detail.

No novel or unusual method was pursued, as the following sketch will show, and the experience of other operators was many times confirmed; that with proper care before and during the operation the patient and his wound may subsequently be left pretty much to themselves, — with nature and the nurse as their only guardians. However, a constant general supervision was not neglected during convalescence. A card of directions was given to the nurse or attending physician a few days previous to the operation.

(1) Light diet for twenty-four hours preceding operation.

(2) Shave parts the day before operation and apply a soap poultice over night.

(3) The morning of operation wash thoroughly with ether and apply bichloride poultice (1–1000).

(4) Move the bowels with cathartic and enema.

(5) Have bladder emptied immediately before operation.

(6) Tincture of digitalis (fifteen drops) three hours before operation, and repeat immediately before etherization; at the same time give a suppository of morphia and belladonna (one-quarter grain each).

(7) Secure a good sleep the previous night; if necessary, by the use of bromide or sulphonal.

The apparatus provided by the nurse was not elaborate. Plenty of basins, boiled water (hot and cold), steamed towels and sheets and a clean table were called for; but in many a case even these were luxuries not to be found, and recourse was had to the old and unpleasant wet corrosive wrappings to protect the field and bedding. It has been shown that steaming in the Arnold apparatus for one-half hour will thoroughly sterilize towels, sheets and the ordinary materials used in dry dressings. If an Arnold sterilizer is not at hand, a suitable apparatus may be improvised from a common clothes-boiler, a double deck being made with bricks and a plank to raise the dressings above the level of the water, which is poured into the bottom of the boiler.

After many elaborations in the method of preparing the field for operation the old soap poultice was returned to, and has given perfect satisfaction. It is kept in place for about twelve hours, and the bichloride is applied for the few morning hours, only, previous to the operation. Under this treatment of the skin and proper care of needles and sutures, stitch abscesses have become obsolete. It has happened occasionally that an ambitious or ill-instructed nurse has removed the corrosive poultice before bringing the patient to the operating table. Fortunately, this annoying occurrence has so far been followed by no bad results.

The practice of exhibiting digitalis before operation is familiar enough, but is not commonly followed. Its action is incalculably superior to that of alcoholic stimulants; its effects are more abiding and its use more logical. If given three or four hours before etherization and repeated immediately before operation it will usually carry the patient through the day and well beyond the danger of primary shock before its effect is lost. It is well to supplement this stimulant with a warm salt-water enema of half a pint to a pint before the patient recovers from ether, especially if he is not in robust health, if the operation has been protracted or the loss of blood excessive. This enema should be given very slowly by means of a funnel and injected rather high through a rectal tube or soft rubber catheter.

The preparation and care of instruments, especially when a surgeon operates frequently outside of the hospital, has been an elaborate and tedious process. The simplicity of the methods used in this series of cases will recommend itself. Steam sterilization, when the instruments were not used at once, was early abandoned; as in nearly all cases the instruments were rusted beyond reclaim. Even when they are to be used immediately, cutting instruments are dulled in this process. The familiar "Aladdin Oven" was substituted, and its dry heat applied at a temperature of 150° C. for an hour. At first the instruments were wrapped in cotton and placed in boxes, but it was found that the evaporation of the moisture in the cotton injured them as much as did the condensed steam of the Arnold apparatus. A series of carefully made nickel-plated boxes was therefore devised, in which the different instruments were placed without other wrappings. These boxes were fitted with deep covers, so that in emergency they may be used as instrument trays. So far as all instruments except knives are concerned this method has given perfect satisfaction, but no method of sterilization by heat has yet been found which will not injure a finely tempered blade. The knives are simply washed in scalding water and wiped with a sponge wrung out of peroxide of hydrogen immediately before being used. Blades so treated have experimentally been found absolutely sterile. The edge is thus held perfectly. During operation the instruments are laid in a pan of sterilized water; when soiled, they are quickly washed in a convenient basin of water and replaced in the pan. After being used, they are carefully scalded, brushed, wiped and laid away in the cases ready for the next sterilization.

The varieties of stitches used and their application have been several; but no one variety has been found applicable to all cases. A properly sterilized stitch of almost any kind performs its function satisfactorily if it keeps the parts in accurate apposition. Pure silver, Chinese silk and catgut have been variously employed, and have their special advantages and disadvantages. Of them all, silver is being constantly given a wider application. It has the advantage of being sterilized with great ease and thoroughness; it firmly and securely coapts the edges of the wound; fewer points are required than when silk is used in taking interrupted stitches. Silver may be passed deeply so as to approximate the deeper portions of the wound and hold them firmly together without unduly constricting the more superficial parts, as does silk. This last is an especial advantage of silver wire which is too often overlooked — though so long approved in denuding operations on the perinæum — by its use, too, rows of deeply buried stitches may be omitted. The sole disadvantage of silver wire is that its removal is often painful. When this manœuvre is properly performed, however, the patient need experience little or no sensation. A good method is to cut all the stitches close to the skin before attempting their removal, and then quickly and firmly to pick them out, one after another. With a little practice this may be done so rapidly that the patient is conscious only of a single slight stinging sensation, which immediately passes away. The edges of the wound are not in the least torn, and the general effect of the line of union is a most satisfactory one. The ordinary silvered copper sold in the shops is much less pliable, subject to become kinked and therefore more easily broken than solid silver wire, which, if used with discretion is comparatively inexpensive.

The silver stitches, ready threaded, may be sterilized in the dry oven along with the instruments. The individual needles, threaded, are conveniently kept in small cotton-stoppered test tubes.

For all round use and convenience there is nothing superior to silk, and of this the braided Chinese is by far the best. The advantages of silk are its convenience for ligaturing and burying, as well as superficially stitching, its delicacy for very fine work, its painlessness in extraction, and its cheapness. It has, however, three disadvantages; when threaded and sterilized, which, of course, can only be by moist heat or by immersion in an antiseptic solution, it can be kept only at the expense of rusting the needle; it is very apt to score deeply the skin when drawn at all tightly, as it must be at times; and it offers, by its meshes, an excellent avenue for the advance of micro-organisms.

A simple, efficient and extremely convenient method of preparing and carrying threaded needles ready for immediate use is to place the individual sutures in small paper envelopes. These are collected into packets and individually labelled. Every variety of needle may, in this way, be kept always at hand and conveniently attainable during the operation. Needles so packed are best sterilized by steam, and may be kept for many hours without rusting. This seems to be due to some virtue in the paper. Culture experiments have shown that these sutures are made sterile after fifteen minutes' exposure to the steam.

For several weeks catgut stitches were employed, and with varying satisfaction. The non-buried gut unless very fine has no advantage over the silk, as it must be removed before it can possibly be absorbed. The buried gut is very useful in approximating the deeper parts of flaps, but too coarse to be of use in taking delicate buried stitches near the surface. For the purpose of suturing, therefore, it has been abandoned, save in exceptional cases. As a material for ligatures, however, it is almost invariably used, and with invariably good results. Catgut has the disadvantage of becoming extremely slippery when blood soaked, and difficult on that account to tie, but when once secured its very swelling before it becomes dissolved secures the vessel more firmly. The method of its sterilization is not unfamiliar, but certainly is little used. It is entirely satisfactory: the gut is wound upon glass reels, each reel secured in a small glass jar filled with alcohol, up to but not covering the gut and then placed in the Arnold sterilizer. The moist heat thoroughly sterilizes the gut, as shown by laboratory experiment, in about one hour; while the fumes from the alcohol rising about it prevent its becoming swollen and sodden, which has hitherto been the objection to its sterilization by the steam method. It is kept in a solution of biniodide of mercury and alcohol, 1–4000.

In regard to buried stitches; they are most useful in their proper place and in well-selected cases, but the experience of the past year makes one feel that their almost universal application is not wise and that this extremely valuable method is capable of being placed in the unfortunate category of fads. Deeply buried silk for the purpose of approximating the lower layers of flaps answers its purpose admirably, and is eventually absorbed. Silk buried immediately beneath the superficial layers of the skin is very slowly absorbed and often leaves a painful cicatrix for many weeks. The former statement applies also to deeply placed catgut, but when nearer the surface it also is very slowly absorbed and in several instances the line of incision, which early seemed fine and firm, has widened, and a keloid-like development of cicatricial tissue has appeared which in one case required a secondary operation for the cosmetic effect. The value of the buried stitch, from the aseptic point of view, is fully appreciated, and in emergency cases where doubt exists as to the proper cleanliness of the skin it is used, as well as about the face and neck when unsightly scars are to be avoided; but experience has shown that under all ordinary conditions the superficial silk or silver points answer their purpose most admirably.

The old-fashioned sea sponges, wet and dry, have been long abandoned, and even the admirable wool sponge is now little used even in the abdominal cavity. The dry method of treating wounds has been used almost entirely during the past two years and its advantages again and again demonstrated. The first requisite of a sponge is to clean the wound's surface; this the dry material does to perfection, but it does more, — when left a few minutes in contact with the cut surface its action is that of a most admirable hæmostatic. By its pressure arteries of considerable size are controlled. A third distinct advantage of the dry method is that the tissues are literally left dry after its application, that no antiseptic lotion remains in the wound to act as subsequent irritant or cause tissue necrosis, and that by the very absence of any moisture other than the natural secretions of the wound the cut surfaces, when brought into apposition agglutinate most readily.

The best material for dry sponging is butter cloth or cheese cloth, sterilized by steam. This is placed in large glass jars covered with absorbent cotton and tightly screwed up. Gauze so prepared will remain indefinitely sterile. By the use of this dry gauze hæmorrhages of almost any extent may be controlled and it has been found of especial value in checking pelvic hæmorrhage after the removal of adherent abdominal tumors. Strips of gauze from one two yards in length are prepared and rapidly packed down into the pelvis when a case of persistent oozing is encountered — the intestines being meanwhile properly held back. When the pelvis has been so filled with packing for a few minutes the gauze may be gradually removed and the bleeding points secured and clamped. By this use of a single long strip of gauze all anxiety about the count of sponges may be avoided, also; while the application of such a tampon is infinitely easier than the older methods.

This manner of packing is applied to all wounds for a few minutes before sewing up, and in many cases the gauze is kept in place until all the stitches are taken. The usual subsequent oozing is thereby very greatly diminished.

Drainage has by no means been abandoned, and in the routine work of a surgeon operating under every variety of condition as regards place, surroundings and conveniences the employment of this procedure must continue to be an article of faith. This refers especially to the after-treatment of large wounds, such as those resulting from breast amputations, when a primary union is looked for.

It is urged by many surgeons that in all such operations the wound can be left completely dry, so that drainage is superfluous and that the slight exudate of blood and serum essential to adhesion is quickly organized. Experience has shown that this is by no means always the case; that, though the wound be entirely aseptic, blood-clot is not always either organized or absorbed, but remains often for weeks as a foreign body which must eventually be evacuated or may, even when covered in by an apparently firm cicatrix of primary union, become septic and cause the greatest annoyance. Moreover, a dry state of the tissues at the end of a long and exhausting operation is one of the greatest snares which the inexperienced operator has to encounter. There is no such thing as tying all bleeding points, *in situ*. Every appearance of bleeding may be checked while the parts are exposed to the air and the heart's action is feeble, but when the wound is closed, the patient warm in bed and an improved circulation established there is almost invariably fresh bleeding, which the greatest care cannot avoid. For the removal of this fresh accumulation a few hours of drainage are essential. This proceeding carries off superfluous discharge; it relieves strain on the stitches and consequent pain and distress, it favors thus indirectly the quick adhesion of cut surfaces, and all the indirect advantages arising therefrom; last, but not least, it can do no harm when properly applied and leaves the surgeon with an enviable sense of security.

The drain should be large enough to accomplish easily the desired purpose; should be most advantageously placed at the lowest angle of the wound and should be removed at the end of twenty-four hours, as a rule.

The variety of drains is great, but the material of which they are made is really of small importance. A large strand of gauze does very well, soft rubber tubing if not left in too long, the various specially manufactured tubes of hard rubber, platinum and similar materials. Perhaps the most useful and easily obtained of all is the quill of a pen or a large tooth-pick with holes punched out; a device suggested by Dr. H. H. A. Beach. Wounds of small extent may not call for drainage; but when it is employed, strands of horsehair, catgut or silk-worm gut often answer admirably.

There has been nothing novel in the character of the dressings employed.

Where primary union is looked for, the incision and stitches — if superficial — are painted thoroughly with an ethereal solution of iodoform combined with an equal amount of compound tincture of benzoin, a mixture long in use at the Massachusetts General Hospital under the name of *antiseptic varnish;* over this is placed the familiar cotton and collodion dressing. to act somewhat as does the so-called *protective*, but having the advantage that slight excretions are not confined. Over all is applied a large cotton dressing of the usual character. The *protective* of rubber or gutta-percha tissue has not found favor nor given satisfaction in the cases in which it has been used. Clean, perfectly aseptic and perfectly dry cases have not been injured, but slight tendencies to over-secretion have been stimulated and blood or other exudates being penned in, have absolutely annulled any advantage which theoretically should have been gained from the supporting action of the protective. Light plaster bandaging over all dressings, has been occasionally employed with the most gratifying results and the old surgical principle of absolute immobilization has been adhered to most strictly. Special methods followed will be noted in connection with the individual cases.

The personal cleanliness of the operator and assistant has naturally been a subject of constant study, but the conclusions arrived at have not been especially elaborate. As regards the costume, nothing is better then a clean boiled sheet strapped about the person, and reaching from the neck to the ankles. The routine adopted at the Johns Hopkins Hospital, but little modified, has been followed in cleansing the hands and arms: first, the thorough scrubbing with soap, water and nail brush; second, five minutes in a saturated solution of permanganate of potash; third, washing in a saturated solution of oxalic acid; fourth, five minutes in peroxide of hydrogen; next, five minutes in bichloride, 1–1000; and finally, a rinsing in cold sterilized water. This process is easy and sufficient. In the course of the operation the hands are washed in cold water as occasion demands, but so far as is practicable are kept out of the wound which is *touched only by instruments and sponges.*

Contrary to the practice of many operators but one assistant is employed in addition to etherizer. Superfluous scources of contagion are thus easily avoided, and it is found that with a little practice a multiplicity of hands can be dispensed with. The advantage of this last practice is not so obvious in the hospital amphitheatre, but in the daily routine of private operating it is found impracticable to employ constantly more than one regular assistant.

A brief résumé of cases operated upon last year is here presented.[1] An elaborate report is not intended. Accounts of a few of the more interesting cases have been already published, and those ordinarily commonplace have their value only in the presentation of their collective results.

The classification is arbitrary, depending rather on the seat of disease than on pathological conditions, but this is justified by the subject of the paper. Thirty cases necessitating abdominal section are first given. Among these are included inguinal hernia and appendicitis.

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[1] This table will not appear in the Journal, but will be published later.

GENERAL SUMMARY.

	Operations.	Recoveries.	Deaths.
Abdominal section (including malignant disease)	30	25	5
Abdomnial (extra-peritoneal) .	2	1	1
Tumors of breast	12	12	..
Gynecological (extra-peritoneal)	7	7	..
Genito-urinary	6	6	..
On nerves	8	8	..
Tumors, not of breast (malignant and benign)	18	18	..
On bones and joints	11	11	..
On rectum and miscellaneous .	20	20	..
Total,	114	108	6

CAUSES OF DEATH. — 1. Cancer of liver. 2. Acute general peritonitis from ruptured cyst existing at time of ovariotomy. 3. Acute general peritonitis from appendicitis. 4. Collapse after operation for perityphlitic abscess. 5. An extra-abdominal abscess opened, with patient moribund. 6. Case of intestinal obstruction: death from shock.

In addition to the foregoing, the following operative list is given, showing a summary of work done at the Massachusetts General Hospital by Dr. Richardson, during the four months' service from July 1 to November 1, 1891.

	Operations.	Recoveries.	Deaths.
Abdominal section (including malignant disease)	20	15	5
Abdominal (extra-peritoneal) .	2	2	..
Tumors of breast	16	16	..
Gynecological (extra-peritoneal)	17	17	..
Genito-urinary	22	21	1
On nerves	2	2	..
Tumors not of breast (malignant and benign)	14	14	..
On bones and joints	38	37	1
On rectum and miscellaneous (extra-peritoneal)	50	48	2
Amputations	18	17	1
Total,	199	189	10
Total for the year	313	297	16

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PLACENTA PRÆVIA.[1]

BY GEORGE G. HAYWARD, M.D.

THE subject upon which I have the pleasure of speaking to you is Placenta Prævia, perhaps the most difficult of all obstetric complications. Although so much has been written on this important subject, yet in this immediate vicinity it is some considerable time since any discussion has taken place, and I trust it may not prove uninteresting and that you will take part freely in the discussion.

There is perhaps no subject which has borne more diversity of opinion, in every detail, than placenta prævia, — one in which to-day opinions differ somewhat, yet in a markedly less degree.

I shall endeavor to confine myself in this paper, as much as possible, to the recent theories and advances which have been made, bringing in other data only as a means of comparison with the results of the present time.

For this purpose I have tabulated 56 cases of placenta prævia after the manner adopted by Dr. William Read in his admirable paper on this subject in 1861.[2] These 56 cases comprise nearly all those published during the past three years (all whose records could be obtained), and they certainly show very gratifying results as compared with those ten years ago.

If we can keep on with this improvement during the next ten years, we shall have reduced the maternal mortality, at least, to a very small one. The improvement is mainly in respect to the maternal mortality which is by far the most important. The fœtal mortality remains about the same.

The figures given upon the maternal mortality ten or fifteen years ago ran somewhat as follows:

Charpentier	35.00 per cent.
Churchill	33.33 "
Depaul	32.00 "
Speigelberg	30.00 "

The fœtal mortality varied from 50 to 75 per cent.

In Lomer's article on combined version in placenta prævia, in *Berl. klin. Wchnsch.*, 1888, xxv, 986, he shows three interesting tables. The first included all the cases brought in moribund, including puerperal fever, showing a mortality of 10 per cent.

TABLE I.

Name of Author.	*No. of Cases.*	*Maternal Mortality.*
Hofmeier	47	4
Behm	53	4
Lomer	136	13
	236	21 = 10%

The next table shows only those cases treated by combined version, showing a mortality of 4.5 per cent.

TABLE II.

Name of Author.	*No. of Cases.*	*Maternal Mortality.*
Hofmeier	37	1
Behm	40	0
Lomer . , ...	101	7
	178	8 = 4.5%

The next table shows the fœtal mortality of 60 per cent. in the cases treated by combined version, which is no higher than by other methods.

TABLE III.

Name of Author.	*No. of Cases.*	*Fœtal Mortality.*
Hofmeier	37	23
Behm	40	31
Lomer	101	51
	178	105 = 60%

Braxton-Hick's maternal mortality, in the *British Medical Journal*, 1889, ii, 1205, was five per cent. The maternal mortality in the 56 cases which I have collected is 5.34 per cent. Therefore it is easy to see that a great improvement has taken place. What then, in a general way, is responsible for this very great reduction in the maternal mortality, and how may we further improve upon it?

Since formerly such a large percentage of deaths resulted from puerperal fever, it follows that the modern rigid antisepsis in midwifery must be at least a most important factor toward better results, although we cannot expect quite as much from antisepsis in cases of placenta prævia as in other branches of midwifery and surgery, for the uterus in its anæmic condition is said to be especially susceptible to septic influences. Another factor seems to be the general tendency toward earlier interference before the patient has become weakened by excessive hæmorrhages. And, finally, every possible means in the conserving of blood throughout the labor and in the building up and support of the patient for possible complications yet to come. These things taken collectively seem to promise the best results.

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[1] Read before the Section for Obstetrics and Gynecology of the Suffolk District Medical Society, April 13, 1892.

[2] These tables will appear in the reprint publication of this article.

Now with regard to the frequency of placenta prævia, it is fortunately of very rare occurrence. Spiegelberg estimates it about 1–1,000; Müller somewhat under 1–1,000; Lomer about 1–723. The combined figures of Schwartz, Schwörer, Hegar, and Spiegelberg, as given by the latter, in a series of 572,120 deliveries, show 62 cases of placenta prævia, or 1–924.

As to the etiology of placenta prævia, the causes are generally described as unknown; however, there are certain conditions which are known to favor it, namely, (1) Endometritis, in which case the ovum gravitates toward the lower segment and may be either lost (abortion) or it may find a new attachment in the lower segment. (2) Any lax condition of the uterine walls, as in multiparæ, and in women who have borne children with great rapidity; the proportion of multiparæ to primiparæ is about six to one. (3) Tumors, such as fibroma or carcinoma (Kaltenbach). (4) Absolute or relative increase in the placental seat, as in case of twins, or in malformations of the uterine cavity, as in uterus unicornis and bicornis (Kaltenbach);[2] low insertion of the tubes has also given rise to placenta prævia (Lusk).

The pathology of placenta prævia is much less clear. The most recent investigations have been made by Hofmeier and Kaltenbach, who have shown, upon four months' specimens, that the placenta has in part developed over the decidua reflexa. Were this not so, we should get only chorion over the os internum in the case of a central attachment of the placenta, at this stage of development.

What they found upon entering the os, was first a free space, then decidua reflexa, then chorion, and in the upper lateral part the decidua vera and reflexa united. Later on in the development, the decidua reflexa disappears; and at the end of the fifth month of pregnancy, it is not to be found. Dr. Charles S. Minot, in his recent investigations, has proved this fact, and has published an article on this subject.

The anatomy of the lower uterine segment has been shown, by recent investigators, to differ from the upper in this way, namely, as having a lamellar structure, also a loose attachment of the peritoneum.

Hofmeier has shown that the arterial supply of the lower segment is not increased while the venous supply is markedly increased. This has been confirmed by Hart.[3] Thus the hæmorrhage in the separation of the placenta is mainly venous, and, as we know, maternal.

Moreover, the lower segment has been found to be passive during labor, the upper segment being the active one, and what it does may be defined as a supertracting element upon the lower segment, and it is probably partly by this means that the hæmorrhage is checked, after the separation of the placenta. This failing, of course we have flowing, unless checked by artificial means or coagula.

One other point has been cleared up quite recently. It was formerly believed that the placenta might be attached in part to the cervix, in cases of placenta prævia. This view was advanced by Taylor, but has been disproved by the investigations of Carl Braun, Kuhn and others.

The most important symptom of placenta prævia is hæmorrhage; Dr. Braxton-Hicks begins his discussion on this subject with the word "blood," and it certainly seems very expressive. In most cases hæmorhrage does not appear until the latter months (usually between the twenty-eighth and thirty-sixth week); and, as a rule, the more central the attachment, the earlier and more severe the hæmorrhage. Often it does not occur until labor has begun; but it may be so sudden and profuse as to endanger the mother's life, frequently without any exciting cause.

Now, during the traction of the lower segment in the latter months, as the placenta cannot bear much stretching, a portion becomes detached, leaving the uterine vessels exposed, and hence the hæmorrhage. Cases of fatal hæmorrhage have occurred with an undilated os, where the post-mortem examination has shown only a slight detachment of the placenta, not larger than a half-dollar. On the other hand, it has been found, that the separation of that portion of the placenta confined to the lower segment usually arrests hæmorrhage; this method, which is known as Barnes's, is one frequently employed in the treatment of the more severe forms of hæmorrhage in placenta prævia. The entire separation of the placenta, a method which was recommended by Simpson for the arrest of hæmorrhage, is at the present time rarely used.

Diagnosis.— It is generally stated as impossible to recognize placenta prævia during the first half of pregnancy. Upon this point, an article has recently been written by Dr. Robert A. Murray[4] of New York, who believes that we can diagnose placenta prævia in the earlier months of pregnancy, and having done so, that it is our duty to empty the uterus. [Three of his cases are reported in our tables.]

An abstract of his suggestions and conclusions is given below, and also his words with reference to the diagnosis:

(1) "Every hæmorrhage intermenstrual should be carefully observed, a thorough digital bimanual examination of the uterus made; and by the aid of Hegar's sign of enlargement of the uterus, pregnancy can be diagnosed early.

(2) "The cervix, even early in placenta prævia, is more enlarged and œdematous than normal, oftentimes irregularly enlarged, one side more prominent than the other, softer, more elastic to the touch; and this condition is felt passing up to the lower zone of the uterus, which is enlarged and fills more of the pelvis than it should.

(3) "The hæmorrhage is painless, more persistent, and more abundant than in ordinary abortions.

(4) "The patients have usually had children, and

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[2] Kaltenbach: Zur Pathogenese der Placenta Prævia, Zeitschr. für Gebürts und Gynäk., 1890, xviii, 1-8; Archiv für Gnyäk., 1889, xxxvi, 522-524.

[3] Hart: Edinburgh Medical Journal, 1890, xxxvi-1, 416.

[4] Dr. Robert A. Murray: American Gynecological Transactions, 1890, vol. xv, p. 361.

generally with shorter intervals of rest between than ordinarily, and, therefore, more likely to have had endometritis and changes in the uterine mucous membrane inimical to the life of the ovum.

(5) "The age is usually younger than that at which fibroids develop, and the uterus is not irregularly developed, as is most often the case with fibroids."

The treatment which he recommends is the dilatation of the cervix with tupelo tents and the aseptic tampon, the separation of the placenta, and the removal of the mass with placental forceps, all under thorough antiseptic precautions. The uterus is washed out with hot antiseptic intra-uterine injections, and the after-treatment is the same as in ordinary labor. This then, may be said to represent the first type of placenta prævia. Hæmorrhage in the latter months without obvious cause, should at once put us on our guard, and suggest the possibility of placenta prævia, which is to be verified by vaginal examination.

Spencer,[5] in his abstract read before the London Obstetrical Society, speaks of the possibility of determining the site of the placenta by abdominal palpation, giving seven illustrative cases in which the diagnosis was made out, and subsequently verified, by vaginal examination, all were multiparæ with head presentation. The experience of Barnes and Hicks was confirmatory in this matter.

The mode of examination was as follows: The patient was placed on the back, the bladder was emptied, and gentle pressure was applied in the absence of pains. The feel of the placenta was likened to that of a wet sponge, the impulse of the head was to be felt through it.

Of course, there must be many cases with thick, flabby walls, where the above method would necessarily fail; but in suitable cases, it is certainly worthy of further investigation, since it has such strong supporters. In 1867 Pfeiffer[6] first spoke of this method before the Berlin Obstetrical Society.

Prognosis is, of course, grave, since we can never foretell what complication may arise.

Treatment.— There are no absolute rules for routine treatment to be offered. Every case must be treated upon its own merits; but the following facts seem to be more and more universally believed: (1) That temporizing after the recognition of placenta prævia, in the event of serious hæmorrhage, is apt to be disastrous; (2) that we have every reason to expect better results, in any operative interference, before the patient is exhausted by serious loss of blood; (3) that our first consideration should be for the mother's safety, the child being secondary but not forgotten; (4) that we should conserve blood to the utmost; (5) that no method of treatment is free from danger; (6) every antiseptic precaution should be observed, and prolonged interference should be avoided as much as possible.

In the early months, if the hæmorrhage is severe, and the diagnosis of placenta prævia can be made out, I should agree that it was best to empty the uterus, as the mother's chances would be better in operating while she had the strength, and the child in such cases need hardly be considered.

I will simply mention, in considering the various methods, what seems to be most in favor at the present time, leaving the rest for you to discuss.

With regard to the rupture of the membranes as a mode of treatment, it seems chiefly applicable to those milder cases in the latter months or at term of lateral or marginal implantation, when labor has commenced, with the pains strong, and the os sufficiently dilated, head or breech presenting. In such cases the rupture of the membranes is generally sufficient to check further hæmorrhage, and the case may usually be left to nature. We may, however, first find it advantageous to assist with forceps in the case of head presentation or to bring down a foot in the case of breech.

Rupture of the membranes is, however, contraindicated when the pains are weak, and the os not sufficiently dilated, as it may be necessary to perform version, in which case the operation is greatly facilitated by keeping the membranes intact.

The prolonged use of the tampon has gradually grown into disfavor, and full dilatation of the os by this means is contraindicated, as we have now a better and safer method in the combined version of Braxton-Hicks. Whatever kind of tampon we may use should be rendered thoroughly aseptic, the same rules being applicable to manual dilatation, which may also be regarded as a tampon. The chief use of the tampon is as a dilator, and controller of hæmorrhage during dilatation of a rigid or undilated os; its most useful forms are the tupelo tents, antiseptic gauze and cotton, Barnes's bags and hydrostatic dilators, and the fingers.

If hæmorrhage occurs in the latter half of pregnancy, let us say at the seventh month, shall we temporize or shall we induce labor?

I think the balance of opinion is now decidedly in favor of interference, in spite of the possible complication of rigidity of the cervix; for it is probable we have to deal with a case of central implantation of the placenta, in which case a serious hæmorrhage may occur at any time, and the mother's chances are much better before she is exhausted by frequent hæmorrhages, and the child's chances are infinitely small at best. Lusk says: "To trifle with such cases is the best way to maintain the present mournful statistics. . . . After the thirty-second week it is safe to say that the child's life is less imperiled by the induction of premature labor than by exposing it to the dangers of continued gestation."

When the placenta is central or partial and the os sufficiently dilated to admit two fingers at least, combined version is the best method. If there is hæmorrhage, we may separate a portion of the placenta, and endeavor to reach the membranes, and rupturing them, we seek and bring down a foot far enough to plug the os. Perforation of the placenta is sometimes done where we are unable to reach the membranes; but this we should avoid if possible. After version the case may usually be left to nature.

The advantages of Braxton-Hicks's method are manifold. It requires less time and manipulation, thus reducing the danger of septic infection; it controls further hæmorrhage by acting as a tampon, and allows a period of rest in which we may strengthen the patient for other possible dangers yet to come.

There are also many cases which are not seen until much blood has been lost and the patient is in a state of collapse and almost pulseless; in such, our first endeavor must be to check any further hæmorrhage and restore life, as it were, by stimulation, before resorting to any means of delivery. What method we shall then adopt must depend upon the circumstances of the case.

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[5] Spencer: Transactions of the Obstetrical Society of London, 1889, 1890, xxxi, 203-216.

[6] Pfeiffer: Monatschrift für Geburtshülfe, bd. xxxi.

In operations ether, as a rule, should be given, and all force should be avoided. With regard to stimulation, the subcutaneous injection of ether as a quick stimulant is perhaps the best; besides this we have nutritive and stimulating enemata, auto-transfusion by bandaging the limbs, injection of salt solution into the veins, or as recommended by Münchmeyer[7] the injection of a six per cent. salt solution, at the temperature of 100°, into the infra-clavicular or inter-scapular regions, afterwards gentle massage of the fluid through the tissues. It is also advisable that the patient drink plenty of fluid to help supply the loss in the vessels; hot water and acid drinks are recommended. Ergot and massage of the uterus are useful, to enable it to recover its tone and stimulate the pains.

The treatment of post-partum hæmorrhage would be hot antiseptic intra-uterine injections (including vinegar), pressure, massage of the uterus, ergot; these things failing, we might apply styptics or the aseptic intra-uterine tampon.

Dangers and Complications.— Hæmorrhage at all times, rigid os, prolapse of the cord, twins, adherent placenta, hydrocephalus and spina bifida, tumors of soft and hard parts of the parturient canal, narrow pelvis, laceration of the cervix, rupture of uterus and inversion of uterus (rare).

Sudden death in the mother is generally attributed to hæmorrhage; but air embolism has caused immediate death in two cases where the air entered the uterine sinuses (Kramer[8] and Vavra[9]).

RULES OF DR. BRAXTON-HICKS.[10]

(1) After the diagnosis of placenta prævia is made, we proceed as early as possible to terminate pregnancy.

(2) When once we have commenced to act, we are to remain by our patient.

(3) If the os be fully dilated and placenta marginal, we rupture the membranes and wait to see if the head is soon pushed by the pains into the os.

(4) If there be any slowness or hesitation in this respect, then we employ forceps or version.

(5) If the os be small and the placenta more or less over it, the placenta is to be carefully detached from round the os; if no further bleeding occur, we may elect to wait an hour or two. Should the os not expand, and if dilating-bags are at hand, the os may be dilated. If it appears that the forceps can be admitted easily, they may be used; but if not, version by combined external and internal method should be employed, and the os plugged by the leg or breech of fœtus; after this is done the case may be left to nature, with gentle assistance, as in footling and breech cases.

(6) If the os be small, and if we have neither forceps nor dilating-bags, then combined version should be resorted to, leaving the rest to nature, gently assisted.

(7) If during any of the above manœuvres sharp bleeding should come, it is best to turn by combined method in order to plug by breech.

(8) Where the fœtus is dead, or labor occurs before the end of the seventh month, combined external and internal version is the best method, no force following.

During my two years abroad, eleven years ago, I had the good fortune for bedside study and observation in a number of cases of placenta prævia. Notes upon two of these cases I have here to-night.

Case I. In Carl Braun's clinic, Dr. Felsenreich, assistant. Patient a multipara, anæmic from loss of blood; severe hæmorrhage before entering hospital but none after; os about six centimetres dilated. Placenta covered all but a small portion at the upper right side; head could be felt through the membranes at this point, high up and movable; membranes intact. Treatment: Chloroform, version, foot brought down, then left to nature. Child born dead several hours after. Mother made a good recovery.

Case II. In Professor Späth's clinic. Patient a multipara; hæmorrhages before entrance; poor condition; anæmic; os would admit two to three fingers; membranes intact; head presentation. Colpeurynters introduced to save the membranes, dilate the os and check further hæmorrhage; later, the membranes ruptured spontaneously. The os was then about five centimetres dilated; the placenta covered about one-third of the upper right side; the head was movable at the brim; pains were strong and there was no hæmorrhage. The question of turning came up, but it was decided to leave things to nature, as the membranes had ruptured and the hæmorrhage was checked. The child was born dead. Mother made a good recovery.

My own experience, since, is limited to one case of lateral insertion of the placenta. Patient was a multipara, at term. Labor had commenced; os two-thirds dilated; membranes intact; head presentation. There was some flowing at this time, but hæmorrhage had not been severe. From the first, placenta prævia was suspected, which was afterwards verified. Rupture of the membranes controlled all further hæmorrhage, and the case terminated in a perfectly normal labor. Child lived, and convalescence was uninterrupted. The case was interesting only from the fact of the slight disturbance which was caused.

THE VOMITING OF PREGNANCY.[1]

A Paper Suggested by the Monograph on the Same Subject by Dr. Graily Hewitt, of London.

BY R. A. KINGMAN, M.D.

Rather more than three years ago it was my misfortune to lose a patient from the "excessive" or "pernicious" vomiting of pregnancy, complicated with acute rheumatism, endocarditis, miscarriage and probable pulmonary embolism. It was my added misfortune that this patient was a valued friend, hence partially the profound impression produced. Since that experience my attention has continually been strongly directed to the subject of pregnancy vomiting, its cause, its cure; and in the belief that my observations and experience may be of some value to others and perhaps be the means of relieving something of suffering and discomfort, I have prepared this imperfect paper. To tell the truth, I have been amazed and often disgusted to note how scattering, irrational, and unscientific is most of the journal writing upon this subject. All sorts of stomach medication are suggested, urged, or vaunted by inventive minds, the rectum and vagina being occasionally made receptacles for drugs as well.

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[7] Münchmeyer: Uber den Werth der subcutan. Kochsalzinfusion zur Behandlung Schwerer Anæmie, Archiv. für Gynäk., Bd. xxxiv, Hft. 3.

[8] Kramer: American Journal of Medical Sciences, vol. xcvi, 819; Zeitsch. f. Geburtsh., Bd. 14, Hft. 2.

[9] Vavra: Centralbl. f. Gynäk., i, 1890; American Journal of Medical Sciences, 1890, p. 430.

[10] British Medical Journal, November 30, 1889, ii, 1205–1207.

[1] Read before the Section in Obstetrics and Gynecology of the Suffolk District Medical Society, April 13, 1892.

Cases are reported without number in which all sorts of measures have been successfully or unsuccessfully employed. If the vomiting persisted, especially if the patient died, the disease is called "pernicious" or "uncontrollable," on the other hand if by chance the vomiting ceased, the drug last used is forthwith exalted to the throne and its fame exploited far and wide. Indeed I know of nothing in the fields of pathology and therapeutics so little understood, so irrationally treated, and so often neglected under the excuse that it is necessary, or that it is a part of a physiological process, as the vomiting of pregnancy.

During the past year my knowledge of the subject has been increased and my interest reawakened by the reception of a monograph from Dr. Graily Hewitt, of London, on the "Severe Vomiting during Pregnancy." This little book contains condensed reports of one hundred and sixteen cases of severe vomiting during pregnancy, collected from the literature of the past twenty years, with a critical analysis of these cases in carefully arranged groups with some very suggestive and, for the most part, acceptable deductions. It is in the first place a fact worthy of notice that in all the literature of Europe and America for the past twenty years, Dr. Hewitt could find only 116 cases reported with sufficient accuracy and attention to important detail, to be available for analysis and the deduction of valuable inferences. And yet there is hardly a more common subject for report and comment in the journals of to-day than the one which is under discussion.

From testimony elicited by constant inquiry, I am in a position to affirm that the nausea characterizing the early months of pregnancy differs from the nausea due to other causes in being infinitely more distressing and overpowering, and further, that unless serious symptoms develop, little attention is paid to the matter by the physician.

I shall not touch upon the various causes suggested by the many good men who have given thought to the subject, nor shall I discuss the methods of treatment which find a place in our books and favor in our practice. My desire is simply to call your attention first, to the importance of this matter to your patients, and then to point out some simple facts which may serve as guides in determining in any given case the actual cause of the vomiting. This latter point attained, there need usually be found little difficulty in deciding upon the appropriate treatment.

Turning now to the book already referred to, which I am glad of an opportunity to review and urge upon your thoughtful attention, let us note the several groups into which the author has been able to divide his collection of cases.

Group A consists of cases classified as "vomiting *in* pregnancy," the vomiting being due to some coincident disease demonstrated by autopsy.

Group B includes cases from 28 to 46, 19 cases in which the uterus was either retroverted or retroflexed. In each case in which the displacement could be reduced, a cure was obtained. In four cases artificial abortion was induced, but in two of them apparently no attempt was made to replace the uterus.

Group C is by far the largest, including cases numbered from 47 to 101. In all these cases the uterus was in a state of ante-position, this being inferred in some cases where definite information was lacking.

Of these 54 cases, 10 died, giving a mortality of nearly 20 per cent. The treatment was as varied as were the varying opinions of the physicians in charge, including mechanical elevation of the uterus, Copeman's procedure of dilating the cervix, sundry applications, and finally artificial abortion. In several of Dr. Hewitt's cases the simple enforcement of the recumbent posture brought the desired relief.

Group D contains only six cases, being those in which inflammatory conditions prevailed in or immediately about the uterus. Four of these patients died.

Group E includes the remaining nine cases of the series. These are miscellaneous cases of little value for the purposes of the paper.

Noting the large proportion of cases of anteflexion, Dr. Hewitt calls attention to the fact that in this condition there is almost inevitably an induration or sclerosis of the tissues of the cervix, at about the level of the internal os. When pregnancy occurs this interferes with the normal and uniform expansion of the uterus and, the rigidity continuing, there results more or less impaction within the pelvis. The growing uterus, as it becomes heavier, presses down more and more upon the pelvic floor, thus increasing the flexion.

It has been generally believed, and was certainly my impression, that Dr. Hewitt held the flexion to be directly responsible for the vomiting. From the present statement, however, it appears that he attributes the vomiting to the rigidity of the tissues resulting from a flexion or other cause, which in turn prevents proper expansion of the developing uterus and so causes pressure upon and irritation of the nerve fibres in the immediate neighborhood of the internal os. The same factors he finds present in retro-positions, in many a case of lacerated cervix with erosion and subinvolution, — in fact, in any case of pregnancy vomiting in which the uterus is not perfectly free to develop and rise in the pelvis without let or hinderance.

In this theory I, for the most part, heartily concur, but when he carries his theory to the extent of explaining all benefit derived from applications, on the ground that the necessary manipulation has resulted in raising the uterus, I cannot quite follow him. I realize that there are other nerves in the cervix than those at the internal os and that they are probably capable of conveying sufficient irritation, stimulus — call it what you will — to set up and keep up pregnancy vomiting. A single case, to be referred to later, will indicate how this may be true and how simple applications may be effective.

Proceeding on the supposition that all cases of the vomiting of pregnancy are due to a local cause and that upon the discovery and removal of that cause must depend the success of our treatment, I have made it a rule for the past three years to examine so far as possible every case that presented itself to me. As a result of basing my treatment upon indications thus discovered, I have in no instance failed to see relief follow within a very few days. How far I am justified in expecting this favorable result in future cases, only time can show, but judging from the promptness of the cure in several severe cases which had already resisted routine treatment, faithfully tried, I look forward with confidence. My series of cases is not long, nor can I give exact data concerning any of them, but the chief facts are distinctly in my mind and will serve my present purpose sufficiently well.

In a majority of my cases quite as large as in the series reported by Dr. Hewitt, there has been found the condition classified by him as group C, the uterus being in ante-position. The exact condition is usually as follows; the uterus rests more or less heavily upon the pelvic floor, the cervix is sharply anteflexed, the body may be either in the normal axis or anteflexed, but in any case is much lower than it ought to be, usually sensitive to pressure and frequently hard to the touch. The frequency of this class of cases is largely due, in my opinion, to modern methods of dress, the pre-existing condition being exaggerated by the constantly increasing bulk and weight of the pregnant uterus. They are the hardest to relieve because the upright posture and every movement tend to increase the displacement, and because tissue changes are inevitably present in the angle between the cervix and body, which continue to interfere with the expansion and development of the uterus even after all displacement has been corrected.

In other cases, though far fewer in number, the uterus has been found in retro-position, either flexed or simply retroverted. In these cases I have invariably found that correcting the displacement cured the vomiting. Strangely enough, however, two of the worst cases of retroverted pregnant uteri that I have seen have had no vomiting at all. In one of these cases, there was severe headache, with spontaneous abortion at three months. The uterus was then found literally upside down. The other patient had been treated by me at intervals for two years for retroversion in the third degree, with most extensive adhesions, the uterus being simply buried in a mass of exudate on the left side. This patient went on to full term without ever having inconvenience of any sort attributable to her old pelvic disease. True, I packed her at intervals during the early months, but not until physiological softening had well advanced did the uterus resume its normal relations in the pelvis.

These two cases prove little except that retroversion does not of necessity cause vomiting during pregnancy, but they certainly do not prove that it may not be a cause.

In several cases it has seemed to me that an eroded, sensitive condition of the external os has served as a sufficient cause of vomiting. A single case may serve as an example. A young Englishwoman, mother of two children, presented herself at the Boston Dispensary with the following story: In both her pregnancies vomiting began very early and continued up to the moment of delivery. Both times she became terribly emaciated and excessively weakened. Now at about two months in her third pregnancy she sought a means of escape from a similar experience, of which she had already tasted the awful distress. The uterus was found in good position, but the cervix was lacerated and much reddened and eroded. A single application of nitrate of silver solution gave great and immediate relief, the second application completing the cure. I cannot believe that inserting a cylindrical speculum and through it bathing the cervix would sufficiently modify the position, either of uterus or cervix, to have any important effect upon the vomiting.

In my own experience it has seemed possible in every case to attribute the vomiting to one of these three causes. That there are other minor or contributing causes, I do not deny, but I do believe that in the vast majority of cases, one or other of these conditions will be found to obtain. There may be a peculiarly sensitive nervous temperament to combat, the stomach may be irritable, there may be anæmia, the vomiting may even be hysterical — in each of these cases appropriate treatment is called for, but none the less does my affirmation hold good that in the vast majority of cases a local cause lies at the bottom of the trouble and must be removed before a cure can be expected.

As regards treatment, I freely admit the value of the various stomach sedatives, of medicines to lessen nervous reflex irritability, of tonics, of rest, of rectal feeding and of other methods if there be any which have been found of use by observant men. These may all have their place, but I would urge that valuable time be not wasted in their use while the true cause goes untouched. Do not wait until the patient is in extremis but examine at once and be guided by what you find.

In cases of retroversion, the vomiting will probably cease at once on correcting the displacement. This is to be accomplished by bimanual manipulation, by the aid of the knee-chest position, or by packing. Once reduced the displacement may be prevented from again arising by the use of a suitable pessary.

Where anteflexion exists, Dr. Hewitt's method of elevation by means of a round rubber ball, inflated in the anterior cul-de-sac, has given good results in his practice. Personally I have come to place great reliance in the frequent use of the knee-chest position, with admission of air to the vagina. In fact, so favorable has been my experience in the employment of this measure, that when for any reason I cannot examine at once, I prescribe it on the chance that it will favorably influence the uterine position and secondarily the vomiting. This failing, I pack anteriorly to the cervix, getting in as large and elastic a mass of cotton as possible. The ideal pessary for this condition, which unfortunately does not exist as yet, would be an inflated rubber ring, very small on one side and large on the other. In longitudinal section it would be crescentic, the slender portion to go behind the cervix while the large anterior portion holds up the body and straightens out the flexion.

When an irritable cervix is at fault, I have found nothing so good as the German practice of pouring in upon it a ten per cent. solution of silver nitrate.

As you perceive, I have not thought it necessary to go much into detail in the matter of treatment for the reason that that must be decided upon general principles. The important thing is to know the cause and then trust to your own good judgment to guide you in its overthrow.

In closing let me offer the following brief suggestions:

Vomiting of pregnancy means suffering and distress which you are bound to relieve.

There is no difference save in degree between the so-called "physiological vomiting" and "pernicious vomiting."

Simple "morning sickness" may pass into "incoercible vomiting" and prove fatal.

The vomiting of pregnancy results usually from some uterine displacement or other local cause which interferes with the normal expansion and development of the uterus.

This local cause is in a majority of the cases an anteflexion and partial prolapse of the uterus with induration of the tissues in the cervical angle.

To cure the vomiting it is necessary to remove the local cause.

This done, morning sickness need no longer be an essential part of pregnancy.

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A STUDY OF FLAT-FOOT, WITH SPECIAL ATTENTION TO THE DEVELOPMENT OF THE ARCH OF THE FOOT.[1]

BY JOHN DANE, A.B., OF BOSTON,
House Officer, Massachusetts General Hospital.

(Continued from No. 17, page 405.)

III. DEVELOPMENT OF THE ARCH OF THE FOOT.

WITH a view to finding out what the condition of the arch was in infancy and childhood a series of tracings were taken under the immediate supervision of the writer, of the feet of nearly four hundred children, whose ages range from nine days to fourteen years. The method employed was that already described, which is simply a modification of that of König. The child was allowed to dip its feet in water, and then stood for a moment upon a flat-sheet of brown paper. Wherever the feet touched, the paper would be moistened. The edge of this moist area was quickly marked with pencil, and the paper carefully dried.

The writer here wishes to thank the officials of the following institutions for the uniform kindness that they showed in doing all in their power to aid him in his work: The Massachusetts General Hospital; the Boston City Hospital; the West End Nursery; House of the Good Samaritan; Church Home of Orphans and Destitute Children; Marcella Street Home and St. Mary's Orphan Asylum; and also to thank most heartily Mr. S. E. Bullard and Mr. Lyman Hodgkins of the Harvard Medical School for their co-operation in taking the tracings and making the experiments upon plates.

The deductions from the drawings are not in accord with the accepted authorities. At birth the foot does not seem to be flat, as is the general opinion. There seems to be on the contrary a distinct arch in the feet of most infants, better formed in one foot than the other, and persisting until they are about eighteen months old. In this period the difference in the arch of the foot between males and females is not noticeable. After eighteen months there begins to be a distinct breaking down of the arch, which in most cases is wholly lost, the two feet suffering equally. For the next year and a half the feet remain distinctly flat, yet even during this period isolated tracings appear in which the arch is never lost. It is interesting to note that such are always females, and therefore presumably lighter children.

During the next (third) year the arch is slowly rebuilt, one foot improving before the other, and the females considerably earlier than the males. When the fourth year has been well entered upon the feet have nearly reached the adult condition; the two are about alike, and there is no marked difference between males and females. Figs. 8 and 9 are photographs from two sets of actual foot-tracings arranged to show the progressive stages in the building up of the arch, one being the male and the other the female children.[18] Corresponding squares in the two pictures are occupied, if not by exactly the same age, at least nearly enough so for all purposes of comparison.

Briefly stated, these pictures would seem to say: From one to eighteen months, arch distinct; sexes alike; one foot better than the other. From eighteen months to three years, arch mostly lost; exceptions are females. From three to four years arch building up; unequal in the two feet; females tending to form earlier. From four years upwards arch established; sexes alike; both feet equal.

Another point in which this series of tracings, as far as they go, seems to differ from the books is as regards the foot in rachitis. Instead of being flat it would seem to have an inner arch fully as high as the normal, and a much higher outer arch. This, as is shown by a series of four tracings in Fig. 10, gives the foot double concave sides, making a very pronounced pattern. So far as has been observed this peculiar tracing is found only in this disease; but the number of tracings is far too small to have much significance. In the few negro and Jewish feet that appear in the series the arch is up to the average for that age; but again, they are far too few to be of much value.

That tuberculosis of the vertebræ does not necessarily weaken the resistance of the system so as to produce flat foot was repeatedly shown. Fig. 11, *b*, is a tracing from a girl of four years and nine months of age, who was at the time wearing a back brace for Pott's disease. A few scattering cases show in a marked manner the production of flat foot by an injury to the leg. Fig. 11, *a*, which is a tracing from a young man of nineteen years, who a year and a half previous had his left leg broken, shows the right foot with its arch in a normal condition, while in the left the arch has given way.

IV. — TREATMENT.

Non-Mechanical Treatment. — As most of the cases come on from a fatigued state of the system, general tonic and hygiene treatment is of the first importance in dealing with flat-foot. Of measures addressed directly to the feet the simplest is the method of walking insisted upon so much by Whitman. The patient should be made to walk with the toes pointing directly forward; for this position gives the arch the greatest muscular support possible, and compels the body to be raised at every step. Next comes *Exercises.* — The admirable set of gymnastics exercises as prescribed by Ellis,[19] which consists essentially in raising the body upon the toes and slowly rotating the heels outwards. In addition to this a broad, flat, laced boot with a low heel should always be worn, which should preferably have a slight inward curve to counteract the tendency of the fore foot to evert.

Mechanical Treatment. — The object of all mechanical devices is to prop up the arch and so prevent the os calcis from rolling over inwards, and the scaphoid and astragalus from sinking down.

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[1] Being a thesis presented for graduation in the Harvard Medical School.

[18] Average tracing from a series of somewhat over 200.

[19] Lancet, September 26, 1885.

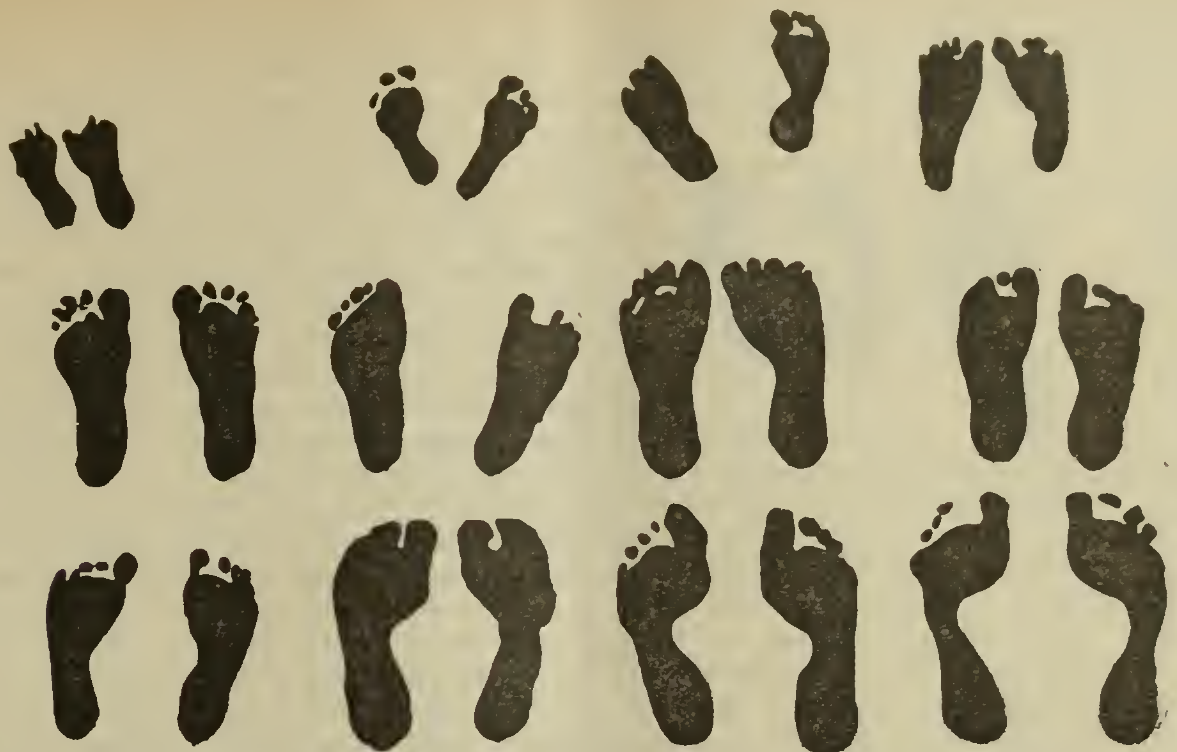

Fig. 8. Tracings of female feet; ages four weeks, three months fifteen days, one year, one year six months, two years, two years six months, three years, three years six months, four years, five years one month, six years, eight years.

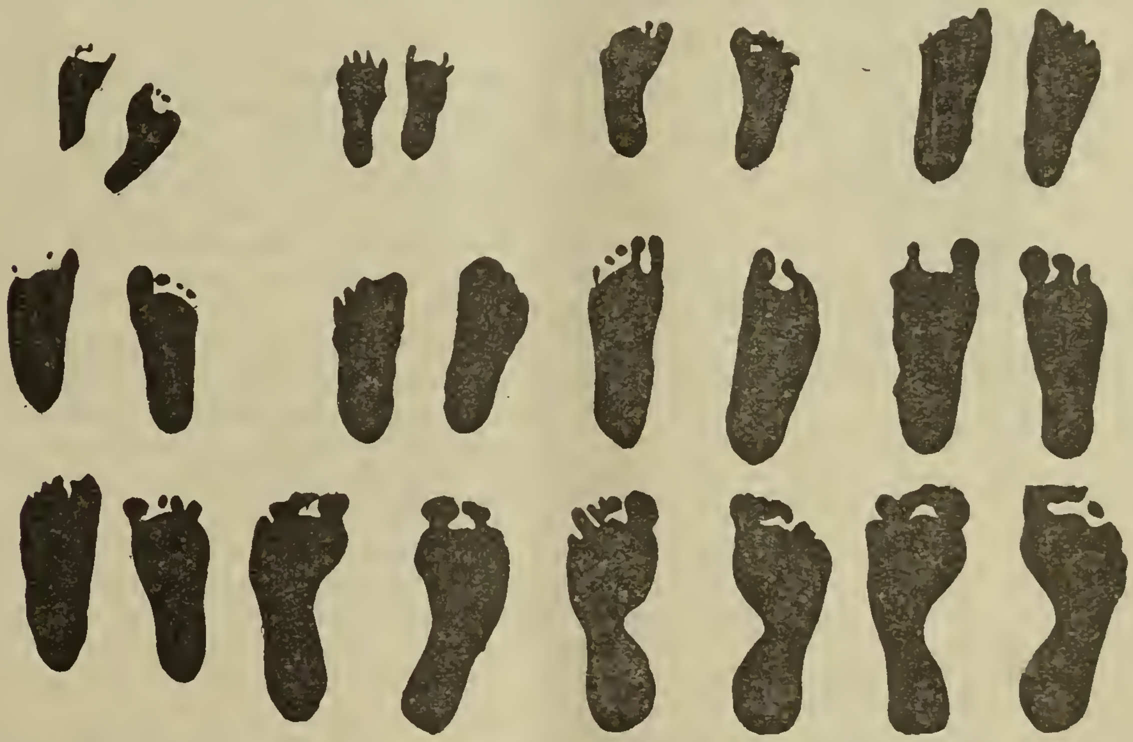

Fig. 9. Tracings of male feet; ages four weeks, three months, one year two months, one year ten months, two years, two years six months three years, three years six months, four years, five years seven months, six years three months, seven years.

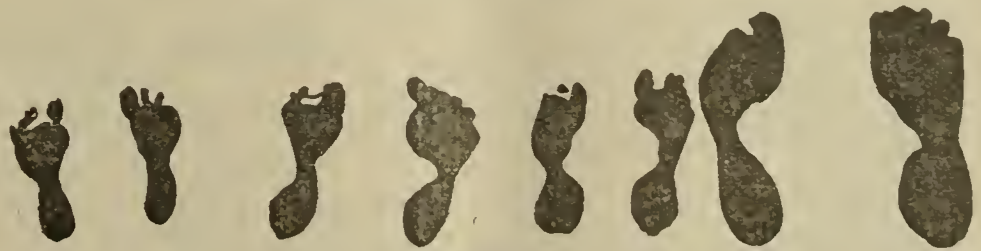

Fig. 10. Tracings of rachitic feet; ages six months, two years, three years, seven years.

Elastics. — Of these a large number have been suggested, such as elastic spring bands passed under the instep and fastened to a leather strap around the calf (Fig. 12); and short steel springs fastened to the heel of the shoe inside, and so arranged as to press up against the instep. Thomas, of Liverpool, invented a method of his own. By means of an incline plane in the sole of the boot, running from the heel to a point just back of the great toe, he raises the inner side of the foot sufficiently to transfer the weight outwards away from the injured internal arch.

Pad. — Pads of every variety of material have been worn inside the shoe; but they soon flatten down and cease to be of much service; while, if of any hard material, the difficulty of getting them to fit accurately at first is very great. With a single exception they have all been discarded, and that has been retained only as a preliminary test. If the feet are painful and suspected of being flat, a pad is made up of sheet wadding folded several times upon itself until it is about four by five inches, and one inch thick. By means of a roller bandage this pad is held firmly in place under the middle of the sole of the foot, and worn inside the stocking. If the case be one of flat-foot, the pain will generally be much relieved, and we can promise good results from the use of a plate.

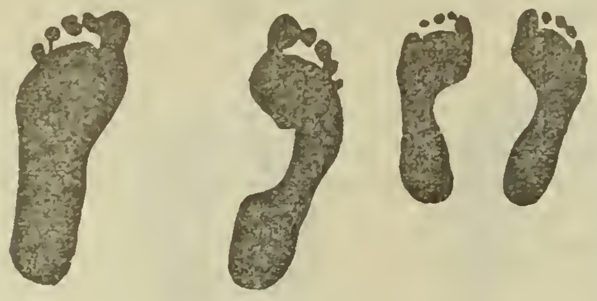

FIG. 11. *a*, Case of traumatic flat-foot. *b*, Tracing from a case of Pott's disease.

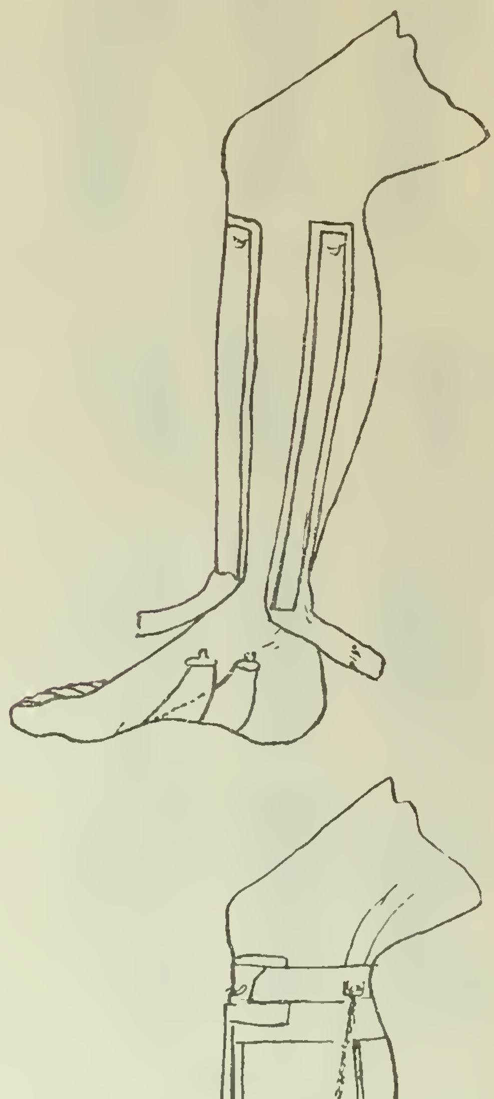

FIG. 12. Apparatus for elastic tension (after Bradford and Lovett).

Plates. — This, which is by far the best form of flat-foot apparatus, consists of a thin sheet of metal fitted accurately to the sole of the foot and worn inside the shoe, generally outside the stocking. These plates differ among themselves: (1) In their mode of manufacture; (2) In their shape; (3) In their material.

For all kinds of plates a mould or pattern of the foot must be taken. Whitman [20] has a most elaborate method for this, by which he first takes two plaster shells of the upper and under surfaces of the foot, adjusts these together, and then by filling up with plaster gets an exact production of the foot, which he sends to the foundry and has cast in iron. Upon this model the plate is forged from the best twenty guage steel.

A much simpler method is to flow plaster-of-Paris into a shallow trough, and when it is about to harden to have the patient step in it. In this negative a positive of the sole of the foot can easily be run.

A most ingenious method was introduced by Dr. F. B. Harrington, of Boston. He first marks out on the foot by means of a camel's-hair brush wet with a mixture of ink or glycerine the shape of his plate. Next a piece of Canton flannel is pressed against the foot. In this way the shape is marked out on the flannel. The flannel is then cut out, soaked in plaster-of-Paris, wrung nearly dry, and applied to the sole of the foot to harden in position. When this shell is dry it is taken off, its concave surface (corresponding to the foot) filled in with fresh plaster, and when hard sent to the machinist, who uses it simply as a model to which to fit his plate. The thickness of the flannel is equal to that of the stocking outside of which the plate is to be worn.

The method used by the writer is similar to this, only sheet wax is substituted for the flannel. Such wax can be had at the dental furnishing stores. When put into hot water it becomes perfectly supple, and can be moulded to the foot and cut to the desired shape. As it cools it grows hard again, and can be greased and backed with plaster on either side according as a negative or positive model is wanted. The advantage of this method is, for ordinary plates, its speed, and cleanliness; while for rubber plate negatives it leaves the model much smoother and allows for the extra size needed.

(*To be continued.*)

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Clinical Department.

A RAPIDLY FATAL CASE OF APPENDICITIS.

BY ALBERT H. TUTTLE, M.D., CAMBRIDGE.

RICHARD B. called at my office September 25th, at 2 P. M. He had complained of pain in the bowels since the 22d, but had kept about his business. His friends say that he has had short attacks of "cramps" for some months past. Examination showed rigidity of the recti muscles, abdomen slightly distended, pain on percussion over a small area between the umbilicus and crest of the ilium; no dulness on percussion. When in the upright position the patient was drawn down to the right with a slight stoop. Temperature 101.7°, pulse 102.

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[20] New York Medical Journal, February 27, 1892.

He had taken salts some short time before calling at my office, which had moved the bowels freely.

He was sent to bed, given a small dose of opium — not for pain, as he did not complain of it, but to quiet the peristalic movements of the bowels — and put upon a milk diet.

I saw him again on the 26th, at 3 P. M., when he was very restless; pulse, as determined by the heart-beat, 180 per minute, and temperature 101.2°. He did not complain of pain; when asked, said he had none. He vomited or regurgitated several times, throwing off a little bile. Face had an anxious expression; and on questioning him, said he felt nervous without knowing why. The bowels had moved twice since last seen. The abdomen was not specially tender, and there was no dulness, neither had there been chills or chilly sensations or hiccough; there was no special decubitus. He was given whiskey and digitalis, with heat applied to the surface. He rapidly sank, and died at 10 P. M., thirty hours after I first saw him.

Autopsy showed that death resulted from the shock of incipient general peritonitis, caused by perforation of the ulcerated appendix. The free end of the vermiform appendix was in a condition of catharrhal inflammation for about one inch in length; in the centre of this area, on the posterior side of the organ, was an ulceration and perforation with an irregular outline about three-eighths of an inch in diameter. There was an excess of fluid in the peritoneal cavity, and considerable amount of coagulated lymph, which held the coils of the intestines loosely together. This was especially abundant about the head of the cæcum. There was no pus that could be recognized as such, neither was there the foul odor usually found in severe cases of appendicitis.

Had an operation been performed early enough, the case would probably have recovered, but that meant within a very few hours from the time he was first seen; twenty-four hours later his condition would not warrant an operation, as he, in all probability, would have died on the table.

I wish to place the case on record as one which favors the *very early* operation, and one where even the *timely* operation, would be of no avail.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.
SECTION IN OBSTETRICS AND GYNECOLOGY.

GEORGE HAVEN, M.D., SECRETARY.

REGULAR Meeting, Wednesday, April 13, 1892, DR. C. M. GREEN in the chair.

DR. G. G. HAYWARD read a paper on

PLACENTA PRÆVIA.[1]

DR. KINGMAN mentioned briefly three cases of placenta prævia which had come within his experience. One was delivered spontaneously without accident at seven months; a second seen during the early part of the second half of gestation, passed from his care and was delivered safely by operative measures shortly after, in another city; the third died undelivered, as a result of neglecting advice to notify at once if hæmorrhage occurred.

DR. BRECK: I was called to a very delicate and anæmic woman some months ago, who had come nearly to term with a second child, and was taken while walking about the room with a very profuse hæmorrhage, so much so that she fainted away. I saw her probably two hours afterward, and at that time the hæmorrhage had ceased. She was comfortable and had a good pulse. The placenta was on the left side, and the edge of it just about bisected the os. I sent for help and did version, which was very easy. The os was partly dilated and the placenta had separated somewhat, so that a part of it was torn off in delivering the child. The child is still living, I believe. The mother stood the operation very well. After an hour there began to be a dripping of blood, and she became more and more pale, and the pulse kept going up. I tried ice, and finally had to plug the cervix and vagina with styptic cotton, and she got along all right.

DR. PRESCOTT: I have seen but one case. That was in the Lying-in Hospital when I was house-officer. The woman was admitted having had slight hæmorrhages. She was put to bed and examined, and the placenta was found to cover the os about one-half, the os being the size of a quarter-dollar. She continued to bleed, and the placenta was separated from the side for about one-half an inch up, and the case left to nature. The labor progressed rapidly. There was no hæmorrhage after the separation, and the baby was born without further trouble.

DR. HAVEN: One case occurred last summer in my service at the Lying-in Hospital. The woman was brought from the out-patient clinic with the history of having had a sharp hæmorrhage during the day. It was a case of placenta prævia centralis, and the os was the size of a half-dollar, and soft. I had her etherized, dilated very easily and turned, and delivered a living female child weighing nine pounds. The mother did very well.

It seems to me temporizing is one of the worst things one can possibly do. The only safe thing for the mother is to deliver as soon as the diagnosis of placenta prævia is made.

In regard to the treatment of collapse from hæmorrhage where it is necessary to supply more fluid for the heart to work upon, a solution of salt thrown into the rectum has in my hands proved very satisfactory. In one case a pint of salt solution injected in this manner brought the pulse up almost immediately, and the patient did well afterwards. I have used it several times.

In regard to transfusion, there have appeared in the German journals lately records of cases where injections were made directly into the femoral artery. This may be done with the hypodermic needle and fountain syringe, and I should think it would be perfectly safe.

DR. GREEN: As regards the operative treatment of placenta prævia, I have been very much interested in the recent work of some of the German obstetricians in the matter of combined, or bimanual version. It has seemed to me that that method is only desirable, when for any reason rapid manual dilatation is impossible. I see no object in stopping half-way, and simply turning the child and bringing down a foot to tampon the cervix, if we can speedily complete the dilatation and deliver the child. That is one point in which I have been unable to follow the advice which Lomer has given and others. I believe the prognosis for the child is far better, if it is delivered as soon as may be. If the os can be rapidly dilated and the child extracted, I think it stands a far better chance than where, owing to rigidity, the cervix cannot be fully dilated, and bimanual version must therefore be performed and one leg brought down. Of course, the latter procedure would control the hæmorrhage; but the question is, whether the delay of leaving such a case to nature does not often work prejudicially on the child.

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[1] See page 424 of the Journal.

There are certain dangers attending the delivery to which the reader has alluded. One of these is the subsequent hæmorrhage, and it seems to me it would be unwise and unsafe to leave a patient who has had placenta prævia for some hours after delivery. The danger of subsequent bleeding is greater in these cases I believe, because we do not get in the lower segment a perfect retraction of the uterus, which closes the sinuses; and we have to rely upon thrombosis largely. These thrombi may become dislodged by coughing, straining, etc., and therefore the patient has a greater risk of secondary hæmorrhage. I think, therefore, that such a patient would need to be pretty carefully watched. Then there is the still further danger of embolism, and this is a much more considerable risk than in the case where the placenta is normally situated.

I should like to say a word in corroboration of Dr. Haven's statement about the value of the rectal saline solution. It seems to me far superior to the subcutaneous injection of the saline solution, much more readily and quickly done, and much less distressing to the patient. Its absorption is very rapid, and it has an immediate effect on the pulse. I have found in hæmorrhage the use of very hot milk, which is very quickly absorbed, to be followed by good results.

DR. HAYWARD: Did I understand that you thought it best to fully dilate instead of using the Braxton-Hicks method?

DR. GREEN: That has been my custom. I have seen a number of cases, and rapid delivery has always served me well. It is comparatively seldom that the cervix is rigid and hard to dilate in placenta prævia. Usually the cervix is swollen and enlarged and filled with blood, soft, and much more easily dilated, as a rule, than the cervix in ordinary cases. I saw a case not long since in which I think I was not longer than fifteen minutes from the time I began until the child was born. If the cervix is dilatable and there is no undue loss of blood, I should much prefer from my own experience to completely dilate and deliver than to partially dilate and do bimanual version and simply plug the parts with the leg or thigh of the child. If, however, the cervix was somewhat rigid and dilatation did not progress rapidly and the loss of blood was considerable, then I should do bimanual version and use the presenting leg or thigh to stop the hæmorrhage.

DR. HAYWARD: I think the usual objection one finds in the books to that — I have not had any experience in the severe cases in the centrally located placenta — is that the lower segment of the uterus, being so vascular, one is much more liable to tear the cervix particularly if it is at all forced or rapid. I think that the rigid os is much more common.

DR. GREEN: It is fair to say that no one man's experience with placenta prævia can be a large one. The statistics are that it occurs about once in a thousand cases, so that any one man is not going to have a large experience, and consequently it is perhaps not scientific for any man to reason from his own experience alone. Reasoning, however, from my own experience, I would say that I have never happened to have a case where the hæmorrhage was active at the time. In two cases I saw recently, the hæmorrhage had taken place two or three times previous to my seeing them. At the time of the operation there was no active hæmorrhage at all. In these cases the dilatation proceeded easily and there was no hæmorrhage following the manual dilatation beyond what might occur in dilating the cervix when the placenta is normally situated; so that in spite of what Lomer has written, I shall still, I think, continue to fully dilate and deliver where dilatation is easy, on the ground that I feel that the fœtal mortality is less. In both of my recent cases the child was saved.

DR. BRECHIN: I think there can be no question that the proper course, as soon as the diagnosis of placenta prævia has been made, is to endeavor to terminate the labor at once. I can see nothing to be gained by bringing the leg down to plug the os and leaving the case to nature. I think it would be better to go a step further and extract the child. I have seen several cases of placenta prævia. In one I applied forceps and delivered. The mother had lost considerable blood, and died from exhaustion after a few hours. In another case the woman had had several severe hæmorrhages before I was called. In this case I dilated the os very easily and quickly, turned and extracted the child. The child is now living. The mother survived only an hour or so.

DR. BOLAND: I have had one case. This occurred in an exceptionally strong multiparous woman. The os was fairly well dilated when I found her. The head soon engaged and checked the hæmorrhage. When the child was delivered, it was in such a condition of rigor mortis that I think it was an impediment to delivery. The mother made a good recovery.

DR. GREEN: Dr. Boland's case is of interest to me in that I have had a case of a child born in that way, although not a case of placenta prævia. It puzzled me to know why I had the trouble I did have in delivery. When the child was born, it was in a condition of rigor mortis. The child was known to be living within ten to fifteen minutes. The fœtal heart had been heard, and I never had supposed it possible for rigor mortis to come on so soon.

DR. PRESCOTT read a paper on

THE DIFFICULTIES OF DIAGNOSING THE POSITIONS IN HEAD PRESENTATION.

DR. BRECHIN: I think the reader was very honest in admitting the difficulties of diagnosis. My own belief is that the position of the head is not so often made out as is sometimes claimed.

DR. KINGMAN: My own belief is that asepsis is the most important of all the objects to be attained in conducting labor. So far as possible, I believe that the diagnosis should be made out through the abdominal wall and by auscultation. A vaginal examination should be made only sufficiently to see that there is nothing glaringly wrong, to give an idea of the size of the os, state of the cervix, condition of the vagina and the amount of progress being made by the presenting part. I believe it is bad practice to try to make out the position of the head through the os in the uterine cavity; and unless there is something to lead me to suspect trouble I never try to accurately make out the position of the child's head by vaginal examination through the os.

I think we frequently make the mistake of trying to make too careful examinations and too many examinations. We should be safer with fewer vaginal examinations, and trusting far more to the external means at our disposal.

Dr. Green: I was about to make remarks in the same direction that Dr. Kingman has done, and I will frankly confess that in many cases I do not make the diagnosis of the position by the vagina until the head is low in the pelvic cavity. I endeavor in every case first of all, unless the labor is too far advanced, unless the head is almost in the act of birth, to make careful abdominal palpation and make the diagnosis by that and auscultation. If that is done and one feels reasonably certain of the diagnosis, there is no necessity for extensive vaginal examination; so that in such cases I use the vaginal examination simply to note the progress of dilatation. When the head descends to within easy reach, I proceed to verify my previous diagnosis.

I was pleased and amused by one of the sources of error given by the reader and that was in the bent ear. I made one such error within two months and in an operative case. It was a question of doubt between O. L. A. and O. D. P. Neither the house-officers nor myself were certain from touch of the fontanelles and I therefore felt for an ear; and having found the ear, proceeded accordingly. When the child was born I found that the position was just opposite from what I supposed; and I found that the ear was bent forward. That is always a possible source of error. I have long since given up attempting to make an absolutely accurate diagnosis from the palpation of the fontanelles alone. Of course in many cases it is extremely easy; but in many other cases, from some of the reasons which the reader mentioned, it is a matter of impossibility to make a diagnosis of which one can be reasonably sure from the fontanelles and sutures. In such cases, to be absolutely accurate, one should proceed further with the examination, and introduce the half hand. I have many times introduced not only the half hand, but the whole hand into the vagina, for purposes of diagnosis.

Dr. Kingman read a paper on

THE VOMITING OF PREGNANCY.[2]

Dr. Boland: I am glad to hear the matter brought up and procedures recommended. In one severe case I followed the doctor's advice of using a ten per cent. solution of nitrate of silver. In a subsequent pregnancy she had the same experience, and got the same relief from the same treatment. In her first gestation the vomiting had been so severe and protracted that her attendant had found it necessary to empty the womb. Confirmatory of the doctor's view that retroversion does always cause vomiting, I had one case in which there was complete retroversion, and I replaced it. She had no vomiting while it was down and no trouble afterwards.

Dr. Brechin: I coincide with the reader, that undoubtedly the large majority of these cases are due to a mechanical cause. As soon as the uterus develops, nature relieves a great deal of the vomiting, perhaps at the fourth or fifth month when the uterus has risen out of the pelvis.

Dr. Twombly: Mechanical irritation and displacement are, I think, the two principal causes. Once recognizing the cause and treating it we have good results in the majority of cases. Sometimes we have failures from almost every treatment, and it is in these cases that we question what it is and why we cannot stop the vomiting. I read an article the other day in reference to dilatation of the cervix to cure the vomiting of pregnancy. It is a question in my mind how far we could dilate the cervix and not produce abortion, and yet get relief from the vomiting. I would like to ask the section's opinion as regards this form of treatment. I doubt whether it is wise in general to practise such a method.

Dr. E. W. Cushing: In regard to bringing on the abortion, if it has to be done, I have seen only one case in which I thought it was necessary to do it. This was at the third month. It seemed to me that, instead of putting in a catheter or operating in the various ways proposed, it was best to make a clean thing of it, as if it were a little polyp; so I dilated the uterus, and scraped it out, washed out all débris. There was no trouble whatever. I think if we are going to do an operation, that that is the right way to do it.

Dr. Green: I saw a case recently where abortion had been produced after consultation, and the uterus emptied; yet the vomiting continued. The uterus was afterwards curetted by the physician in charge, and still no benefit. Every drug recommended for that purpose had been tried. I saw the case at that stage, and thought of one thing that had not been tried; but a week later the patient died. On vaginal examination I could discover nothing whatever abnormal. It is worth while to remember those cases, I think, because it is not possible to succeed always by any line of treatment.

Dr. Kingman: In regard to dilating the cervix, Graily Hewitt makes the point very strongly that the rationale of Copeman's procedure lies not so much in dilating the cervix as it does in the fact that by dilating the cervix is straightened and the impaction is overcome. Practically it accomplishes what Dr. Hewitt's procedure does in correcting the deformity of the position. He calls attention to the fact that one of the contributing factors in producing morning sickness is the emptying of the bladder. The woman assumes the upright posture, the bladder is emptied, and the degree of version is increased. These two points, change of posture and emptying of the bladder, seem to corroborate Dr. Hewitt's position.

I think the testimony of every physician here would be that the ordinary cases of vomiting of pregnancy have been disregarded, but I have been surprised when I questioned patients in regard to the sensations of morning sickness, to find how terrible was the distress which they encountered even in the ordinary sickness.

A few years ago there chanced to be visiting in my home a young lady, pregnant for the first time, who had so little nausea accompanying her condition that it was scarcely to be noticed by any one, and yet she has since assured me that her suffering from that apparently trifling cause was greater than she had known before in her life. She described it as differing from ordinary nausea in the intensity of the distress which it occasioned.

I believe we are too much inclined to overlook this matter, and therefore it is that I urge upon you to try the experiment of relieving this distress by the measures suggested to-night.

SPECIMENS.

Dr. E. W. Cushing: This first case is interesting from the size of the tumor (a myoma weighing some twenty-three pounds), from the extreme degree of degeneration of the myoma as distinct from the capsule of uterine tissue, and from the degree to which the capsule contracted after being cut into. This case had been refused operation by several surgeons, and had been treated with electricity and made worse by it as she thought. I wish to call attention to the fact of what is really done sometimes in trying to treat these cases with electricity. In this case the best we could hope to do would be to set up a degeneration in it which is sufficiently striking enough as it is. The woman did very well after the operation and is now just getting up.[3]

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[2] See page 427 of the Journal.

The next case is more interesting. A woman was sent to me ten days ago as an emergency case. She was said to be having chills. She said that she had had a tumor more than a year, that she had miscarried four times, the last time four months before. She got on badly after the miscarriage, and an abscess had formed which had broken several times and discharged through the vagina. I examined her and found a mass which was rather hard, behind which I thought I felt something like the fœtal head. She declared that there had been no symptoms of pregnancy, that she had menstruated every three weeks. She was very ill. These statements agreed with those made by her physician. I operated the next morning. I opened the abdomen, saw something that looked like a pregnant uterus and yet not like it. The upper part lay flat like a soft myoma; below and behind it I could feel something hard. I lifted the tumor out of the abdomen and could feel low down that it was evidently cystic; there was a hard mass in one place; ovaries and tubes healthy. I inferred that the chills must have come from something in the uterus. The question arose whether to remove it or what to do. I felt if I amputated that after I had put a rubber tube round it and pins through it, there was no implication in the abdomen. She was going to get well anyway. If I put it back I had failed to relieve her. If I removed the ovaries I might as well remove the uterus, and if it was pregnancy the child was probably dead and setting up trouble in there. If I put the uterus back it might be difficult to get the child out and she might die. I amputated, and sure enough it was pregnancy and a dead fœtus. She has done perfectly well.

To enforce the difficulty of making a diagnosis, I will show another case, somewhat shrunk from alcohol. This was a patient of Dr. Chadwick's, on whom I operated a year ago. It was a soft myoma. After we had the abdomen opened it looked so like pregnancy that we were worried. None of us could say whether it was pregnancy or not except by the history. The tumor was filled with serum, but on cutting through the capsule a cystic mass protruded from the incision. It was not a pregnancy.

[Dr. Cushing also showed a cyst of the kidney he removed a week ago which held a gallon of pus and urine. The operation will be described before another section.]

In regard to finishing the stump in cases of hysterectomy. I use the rubber ligature. It can be slipped up when it is in position so that you liberate the bladder. It can allow room for the broad ligament to retract under the ligature, often to the extent of two inches, which it could not do with the wire loop. The pins can be put under the ligature, so that the latter lies outside of the abdomen. It is not necessary to have the nurse twist up the constrictor as is the case with the serre-nœud. It tightens itself. After a week or ten days all that is necessary to do is to snip off the stump with scissors, and it is finished. I have never seen trouble arise from its use. The principal point is to have it above one or both pins, so that it will come outside, carry it around twice and tie.

AMERICAN GYNECOLOGICAL SOCIETY.

(Concluded from No. 17, page 410.)

SIXTEENTH Annual Meeting, held in Brooklyn, September 20, 21 and 22, 1892, the President, DR. JOHN BYRNE, of Brooklyn, in the chair.

THIRD DAY (CONTINUED).

THE VALUE OF THE FORCEPS IN COMPLICATED HIGH ARREST OF THE BREECH, WITH REPORT OF TWO CASES.

DR. EDWARD REYNOLDS, of Boston, in the paper on this subject, justified the conclusions by the recital of two cases of a rather rare condition, namely, arrest of the breech at the superior strait, complicated by dangerous retraction of the uterus.

The first patient had been in labor thirty-one hours, with no progress the last four hours. Immediate interference was thought to be indicated. Under ether the os was manually dilated; the lower segment of the uterus was found closely applied to the child and somewhat thinned. In view of the condition of the uterus, it was thought that the passage of the hand above the constricting ring would be extremely difficult and dangerous, therefore the application of the forceps to the breech was adopted. The Vienna forceps was selected; one blade was applied over the sacrum, the other over the posterior surface of the anterior thigh; axis-traction rods were added, and by two or three strong tractions the breech was brought into the pelvis. The forceps were then removed; but it being impossible to deliver the breech by traction with the finger, they were reapplied without rods, when with moderate traction the breech was brought to the vulva and delivered by the finger. Without the forceps, delivery could have been effected only by withdrawing a leg, which would have endangered rupture of the uterus. The child died the fourth day, of convulsions from hæmorrhage at the base of the brain, but there had been no injury to the body internally or externally by the forceps application. The second case was similar; the child lived.

The special point made by the author was, that had the hand been introduced and the leg brought down, rupture of the constricting thin section of the uterus would have taken place; also that if the forceps had been applied higher on the body of the child, as was commonly taught, some of the viscera would probably have been injured. The fingers should be repeatedly inserted to assure one that the blades of the forceps grasped at the proper place, which in the oblique position was for one, at the first sacral vertebra, and for the other, upon the femur opposite; and in the transverse position at the great trochanter.

DR. EGBERT H. GRANDIN, of New York, said the paper was particularly gratifying to him, as the author added the weight of his authority to a practice which he had long taught. The only apparent difference between them was that the speaker would use chloroform rather than ether as an anæsthetic, and in so doing it would be found that the constricting band would so far relax that the use of the forceps would be unnecessary; that the hand could then be inserted and delivery effected in this way. He again took occasion to emphasize his preference for the use of the sensitive hand over any instrument, when this was possible.

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[3] Recovered entirely and left the hospital well.

Dr. Edward P. Davis, of Philadelphia, said that the occurrence of a constricting ring was not very uncommon, and if it persisted that it offered serious resistence to the descending part. The apparent difference between Dr. Reynolds and Dr. Grandin, he thought was due to the fact that Dr. Reynolds had used ether, which was not relaxing and had therefore resorted to forceps, while Dr. Grandin had used chloroform, which did cause relaxation and enabled him to deliver with the hand.

Dr. H. C. Coe, of New York, could readily understand how the faulty application of the forceps to the body of the child in a breech presentation, as suggested by the author, might cause an injury to the viscera, for he had known extra-peritoneal hæmorrhage and injury to the kidneys to take place in an institution, from prolonged pressure of the thumb and finger.

Dr. Reynolds closed the discussion, and said he thought Dr. Davis's explanation of the apparent difference between himself and Dr. Grandin was the correct one, yet he had not felt safe in using chloroform, since at his home, which was the birthplace of ether, it was doubtful whether if one should have an accident from the use of chloroform he would be pardoned for his folly.

WHAT IS THE BEST MANAGEMENT OF OCCIPITO-POSTERIOR POSITIONS OF THE VERTEX?

Dr. Chauncey D. Palmer, of Cincinnati, presented this paper, and in doing so said that he had nothing new to offer, but that he hoped to offer a rational plan of procedure in occipito-posterior presentations of the vertex. Intelligent treatment of the cases of this position implied, of course, a consideration of the mechanism of labor. The author thought only four positions of the vertex need be recognized. A true posterior position was one in which the occiput was not only toward the sacro-iliac synchondrosis, but in which it impinged against the posterior inclined pelvic plane, just as an anterior position was one in which the anterior inclined pelvic plane received the occiput in its downward movements. If the occiput struck the anterior plane, its direction would be downward, inward, forward, and outward; if the posterior, its direction would be downward, inward, backward, then outward. Many causes contributive toward directing the occiput on the anterior rather than the posterior planes, among them being a strongly projecting sacral promontory, the ischial planes, the muscular pelvic floor, the ischiatic ligaments, the psoas iliac muscles. Much misunderstanding had arisen from a misconception of what constituted an occipito-posterior position, as said, if the occiput played upon the anterior inclined plane, the case should be regarded as of the anterior position, not the posterior, notwithstanding the fact that the occiput might look not inconsiderably backward, all such cases would naturally undergo sooner or later anterior rotation. If the occiput struck the posterior plane often it would undergo anterior rotation only by the early and well directed efforts on the part of the accoucheur.

Nature's forces, which greatly facilitated anterior rotation, were mentioned: Strong uterine action, aided by vigorous voluntary propelling power, a good degree of resisting action at the pelvic floor (the site of rotation), and proper flexion of the fœtal head. Posterior rotation was likely to occur when the occiput struck the posterior inclined plane well backward, when the head was of unusual size, when the ischial spines were imperfectly developed, and when the pelvic floor was greatly relaxed. Posterior position meant slow engagement, slow descent, and a possible non-rotation, or a posterior rotation. Flexion of the head after dilatation of the cervix was not complete or persistent. No special difficulty occurred until the pelvic floor was reached, labor was longer, and much greater force was required because the distance which the occiput had to travel was greatly increased, and the shoulders and the whole of the fœtus became impacted outside of the uterus. While thus more *vis a tergo* was needed, less was afforded.

In diagnosis, the author said palpation of the abdomen and auscultation were as important to be adopted early, as was vaginal touch, and should also be utilized during labor. It was not always possible to estimate the degree of backward inclination of the occiput, or to say whether it would undergo anterior or posterior rotation. The treatment of most cases was simple, and would depend largely upon the particular stage of parturition at which the condition was recognized. If the case was seen early enough, the child should be rotated into the anterior position. If this was not successful, podalic version should be performed. The later operation was especially indicated if the head was large and broad, or the pelvis contracted. The knee-elbow posture favored, by gravitation, the rotation of the fœtus as a whole into the anterior position. In the second stage the lateral decubitus corresponding to the direction of the posterior position, he thought, favored rotation. But if the head should reach the perineum without rotating, the aim of the operator should be to promote and increase flexion by (with two fingers, during pains) pushing the frontal bone in an upward direction, generally pressing toward the mother's left; or the whole hand might be used. The forceps might still be necessary, rotation being left entirely to nature. While the application of the forceps done in a careless manner, or at too early a date, might prevent anterior rotation, causing extension; their use at this time was urgently called for. Between their use and the performance of craniotomy, the future of this patient might rest. If the mother is in an exhausted condition and the child is dead, craniotomy would offer the best chances for the mother. With the child alive, most obstetricians would very properly prefer the forceps. The author had not endorsed the doctrine that craniotomy was never justifiable on the living fœtus.

Dr. Edward Reynolds, of Boston, made some remarks endorsing the points in the paper, with a single exception, that in most cases he preferred to apply the forceps to the sides of the head, rather than be directed by the sides of the pelvis.

Dr. H. D. Fry, of Washington, mentioned a point or two in the diagnosis of the occiput-posterior position, on which little stress had been laid in books. One was, that if in making a vaginal examination the finger came in contact with the fontanelle near the centre of the vaginal axis, the occiput would be found posterior, whereas, if the occiput were anterior, the fontanelle would usually be found toward the edge of the pelvic canal. Again, if when the head was coming down it failed to fill the posterior portion of the pelvic basin, but seemed rather to hug the symphysis it was an indication of the occipito-posterior position. He also favored the application of the forceps to the sides of the child's head, since if one were guided entirely by the sides of the pelvis in the application he might catch the head in the occipito-frontal diameter and prevent the natural movement. The speaker thought after one had experience there would be less danger with the forceps than many supposed, yet in practice he found he applied it in only about ten or twelve per cent. of his obstetric cases, but he made it a point to use a strict asepsis as for any operation.

Dr. J. C. Reeve, of Dayton, had met with this position in three primiparæ, saving the mother, but losing the child,— the same women at later pregnancies, being delivered normally. If he saw a case before the head engaged, especially in primiparæ, he would do version.

Dr. Davis, of Philadelphia, impressed the importance of pelvimetry; 97½ per cent. of occipito-posterior positions would become anterior if fœtal head and pelvis were in normal proportion.

Dr. Noble, of Philadelphia, was of the same opinion.

Dr. Von Ramdohr, of New York, thought spontaneous correction would occur, except in contracted pelvis, tumor, or some other obstruction.

Dr. Malcolm McLean, of New York, always suspected this malposition when, before the head engaged, the woman had short, snappy inefficient pains. Usually the head and body could be rotated, but failing in this, version should be practised.

Dr. Egbert H. Grandin, of New York, impressed the necessity of *early* diagnosticating the position, when correction is possible. Neglected cases had often led to attempts at instrumental delivery, injuring the child's brain and causing subsequent epilepsy or idiocy. In preference to delivering a living child with such defects, he would advise craniotomy.

UMBILICAL HERNIA IN THE FEMALE, WITH REPORT OF FIVE CASES.

Dr. A. Palmer Dudley, of New York, in this paper, gave a little space to stating some objections to certain methods of operating for umbilical or ventral hernia, particularly that of returning the parts without incising the peritoneum, as practised by Dr. Edebohls, and then related five cases which illustrated the method now adopted by himself, and which he thought possessed certain advantages over the other methods. While he was a firm advocate of catgut in most operations, here he objected to placing reliance upon it for retaining in coaptation the divided abdominal walls. Silver wire was made use of to take the strain, while catgut might be employed as a continuous suture for making closer approximation between the surfaces of the wound. The silver wire sutures were passed through a small rubber canula, which at the same time did away with the necessity for twisting them, and also served for drainage and thus obviated the liability to suppuration. In all of his cases he had succeeded in securing union with an almost entire absence of suppuration, and with no rise in temperature.

The fourth case was one enormous ventral hernia, the cellular tissue greatly atrophied; the vermicular action of the intestines was visible through the skin; and it seemed hazardous to operate. An incision was made, nine inches long; the omentum was adherent along the entire line of the incision and a large portion of it had to be removed. After cutting out an elliptical piece of the walls, they were drawn together as closely as possible and quilted by continuous catgut sutures. They were so much atrophied that it was almost impossible to get sound muscular tissue to cover in the hernia. In addition to the two rows of catgut seven wire sutures were employed. In spite of the fact that the patient was not expected to live, she made a good recovery without accident, except for slight suppuration about two wire sutures.

His cases showed that it was useless to treat umbilical hernia by mechanical appliances. It was his opinion that to open the peritoneal sac was not dangerous, and he would prefer to do this to returning the sac without knowing how many adhesions there were between it and the intestines. This method of treating the scar did away with the necessity of leaving buried sutures. Hernia would be less likely to follow laparotomy if operators would be less careless in closing the abdominal incision.

STOMATITIS, DUE TO IRRITATION OF EPITHELIAL PEARLS IN THE MOUTH OF NEW-BORN CHILDREN.

Dr. Henry J. Garrigues, of New York, read a paper on this subject.

A small epidemic of superficial ulceration of the palate of new-born children in Maternity Hospital was the occasion of a careful examination of all the babies, 52 in number; 49 of these had congenital epithelial pearls on the palate. The first 27 children had their mouths washed out immediately after birth and after each nursing, with the velvety side of a piece of lint soaked in a saturated solution of boracic acid. Of these 12 had a more or less sore mouth, the ulceration always beginning at the epithelial pearls.

In the last 25 cases no washing was done, and not a single one of these got a sore mouth.

The epithelial pearls are small white globular tumors of the size of a pin-head to that of a millet seed, situated in the râphe of the palate, perferably at the juncture of the hard and the soft palate. They are one to five in number. The outer surface is hard, the inner part softer. They are imbedded in the mucous membrane. Most of them are covered with a layer of condensed connective tissue. Instead of the round prominence there is sometimes a white line half an inch long in the râphe. The mass is composed of epithelial cells like those of the mucous membrane of the mouth. The outer layers are the youngest, having polyhedral form and a nucleus, those near the centre are flat and have lost their nucleus.

Similar formations are sometimes found on the free edge of the alveolar process.

Epithelial pearls are not retention cysts, formed by occlusion of glands, but are due to inclusion of parts of the epithelium of the mouth. They are found as early as the eighth week of fœtal life, and disappear in healthy children at the end of the second month after the birth of the child. In badly nourished children they persist longer. They are found in that particular place because the palate is formed of two lateral projections which gradually unite in the median line, from the front backward. On the alveolar process their existence is probably due to growing together of the walls of the dental furrow over the germs of the future teeth.

Diagnosis. — Bednar's aphthæ are similar superficial ulcers, but begin laterally on the place corresponding to the hamular process of the sphenoid bone, and are usually bilateral. Sprue forms white spots, is never congenital and attacks any part of the mouth irregularly.

Treatment. — The epithelial pearls, being physiological, should not be interfered with. If the mouth is washed out at all, it should be done with plain water, a soft, smooth rag, and with great care so as not to wound the epithelium. If stomatitis sets in by rubbing the pearls, the best treatment of the ulcer is to swab it with water acidulated with a few drops of acetic acid and then paint it with borax and glycerine. It heals in a week or two.

The following officers were elected for the ensuing year. President, Dr. Theophilus Parvin, of Philadelphia; Vice-President, Drs. A. H. Parish, of Philadelphia and W. H. Baker, of Boston; Secretary, Dr. H. C. Coe, of New York; Treasurer, Dr. M. D. Mann, of Buffalo.

The Society adjourned to meet in Philadelphia, on the third Tuesday in May, 1893.

Recent Literature.

A New Pronouncing Dictionary of Medicine. Being a Voluminous and Exhaustive Handbook of Medical and Scientific Terminology, with Phonetic Pronounciation, Accentuation, Etymology, etc. By John M. Keating, M.D., LL.D., etc., and Henry Hamilton, with the collaboration of J. Chalmers DaCosta, M.D., and Frederick A. Packard, M.D. With an Appendix containing important tables of bacilli, micrococci, leucomaïnes, ptomaïnes, drugs and materials used in antiseptic surgery; poisons and their antidotes; weights and measures; thermometric scales; new officinal and unofficinal drugs, etc. Philadelphia: W. B. Saunders. 1892.

This dictionary is in one octavo volume of 818 pages, including the Appendix. The paper and print are excellent. Such praise as can be fairly given to the medical lexicographer's work must be much more restricted than that which we accord to the work of the publishers. A new medical dictionary, to justify its appearance, should have very many merits and very few defects. We cannot affirm this of the one before us. It has an ambitious title-page, but it does not prove itself to be either a "voluminous" or "exhaustive" handbook of medical and scientific terminology. In fact, the terms are incompatible. We do not see how it is possible to produce a "voluminous" and "exhaustive" "handbook" of the terminology of so extensive a subject, unless employing type which would negative its usefulness. A comparison of this dictionary with several others proves what one anticipates *à priori*, that it is certainly not exhaustive, and could only be called by the exercise of great courtesy, voluminous.

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THE CIRCULATORY CHANGES THAT TAKE PLACE IN THE BRAIN DURING PSYCHICAL ACTIVITY.

Among the most solid and substantial as well as original contributions to the physiological psychology of this century, may be reckoned the experimental researches of the Italian physiologists, made to determine the relations of the circulation to the functions of the cerebrum. We shall give a brief *résumé* of these investigations with the aid of the admirable exposition of Jules Soury in his "*Fonctions du Cerveau.*"

Professor Mosso, of Turin, had the rare opportunity of making observations on three persons who had lost portions of the frontal bones. He devised special instruments by which he took tracings of the movements of the brain, the pulsations of the heart, etc.; he also invented the plethysmograph for estimating the quantity of blood in the forearm and hands. His experiments show: (1) That in the act of going to sleep a dilatation and relaxation of the vessels of the forearm occur with a corresponding contraction of the vessels of the brain, this change being most marked during deep sleep. (2) That all external stimulation, however slight, such as a ray of light falling upon the eye, a noise, etc., is attended by contraction of the vessels of the forearm, greater blood-pressure, and an increased flow of blood to the brain. (3) That these changes are accompanied by a modification of the respiratory rhythm and an acceleration of the pulsations of the heart. (4) That during sleep the quantity of blood in the brain is subject to fluctuation without any apparent cause. (5) That all mental activity is attended by an increased quantity of blood in the brain. Thus, under the influence of mental emotion, the forearm, of which the pulse becomes smaller and more frequent, diminishes in volume, while the cerebrum augments by reason of a larger afflux of blood.

This increased activity of the cerebral circulation is due, according to the observations of Gley, to a vaso-motor influence. The cerebral cells, excited, react in their turn on the vaso-motor fibres of the carotids and dilate them; these arteries receiving then a greater quantity of blood, determine by the way of the arterioles and capillaries which are also dilated, a more active and abundant sanguineous irrigation of the gray substance of the cerebrum.

The circulation arouses and keeps up the activity of the cerebrum, but the functions of this organ, the sensations, the thoughts, the emotions, modify at each instant the quickness and the amplitude of the blood-current.

The experiments of Mosso, applied to the study of the cerebral circulation during sleep, have also demonstrated the existence of *unconscious perceptions.* A voice, a sound, every kind of sensory impression provokes a contraction of the vessels of the forearm and an augmentation of the afflux of blood to the cerebrum of the sleeping person; on waking, the subject has no consciousness of the psychical processes which must have accompanied these modifications of the cerebral circulation determined by the exterior excitations.

Seppilli and Tamburini in their studies on the phenomena of hypnosis, have likened these facts to what is observed when, in artificial somnambulism, an impression made on one of the senses starts a corresponding train of ideas and actions of which there is not the least recollection when the individual awakes. Thus, in a hysterical person in a state of lethargy, the forcible opening of the eyes, the vibration of a tuning fork, the prick of a pin, the utterance of the patient's name, determine a diminution in the volume of the forearm. Does not analogy compel us to admit that in the hypnotic, as in normal sleep, external stimuli in arousing the activity of the brain provoke an increased afflux of blood to this organ?

What influence do the divers simple perceptions exercise on the state of the cerebral circulation? Are the variations of the cerebral circulation a determining condition of these perceptions, or are they simply accompaniments or sequels? To solve this problem, Morselli and Bordoni-Uffreduzzi have performed a large number of experiments by means of various stimuli, tactile, electric, olfactory, acoustic, etc., and by the aid of unregistering instruments, on a man who presented a large loss of substance of the cranium in the left temporo-parietal region. In general, every perception is *followed* by an augmentation of the volume of the cerebrum; this is in the direct ratio to the intensity of the stimulus, and in inverse ratio to what these Italian writers call the degree of psychical elevation of the perceptions. The time during which are manifested the variations of the cerebral circulation consecutive to the action of the stimuli, is much longer than that of the physiological processes of the perceptions. We might then be warranted in concluding that these modifications of the circulation are the effect and not the determining cause of the reflex cerebral actions provoked by the perceptions. Branchi indeed affirms that in the normal as in the pathological state, these variations in the circulation and blood-pressure should rather be considered as effects than as causes of the psychical activity. "Who," he asks, "can affirm that the hyperæmia is the cause of the mania?" The same may be said of the cerebral anæmia of melancholia.

We may refer also to the researches on the cerebral circulation by G. Rummo and Ferrannini, of Naples, who have studied the cerebral pulse in two individuals who had an opening in their crania: the variations of the cerebral circulation during sleep appeared to these physiologists to be the effect, and not the cause of the sleep.

The thermo-electric researches of Tanzi, which Soury thinks entitle physiology henceforth to a place among the physico-chemical sciences, are of the utmost interest. Thought and feeling, like muscular contraction, are attended first (dynamic phase) with a lowering of the temperature, then, during the static phase with an appreciable *heating* of the parts exercised. In other words, the surplus of energy is evolved as heat. It is the doctrine of correlation and conservation of energy applied to the physics of the nervous system. Into this attractive field of inquiry we have not time to enter and must refer our readers to the able summary of Jules Soury, who concludes this part of his subject in the following words:

"The cerebral, like the muscular activity, determines at the commencement of this activity in the dynamic phase or of positive work an appreciable lowering of temperature of the substance of the cerebrum, as of that of the muscle, followed in the static phase, or phase of repose by an elevation of temperature.

"These successive variations of the temperature of the cerebrum when doing work constitute veritable thermic oscillations of depression and elevation. These thermic oscillations correspond to the rhythm of the processes of functional disintegration and reintegration of the nerve centres. The cerebral activity is a form of energy. Intelligence has its chemical, thermic, and mechanical equivalents."

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INCOMPETENT DRUGGISTS AND COUNTER PRESCRIBING.

At a meeting of the Section on Public Health of the New York Academy of Medicine, held October 28th, Dr. Bernard Gordon read a paper on "The Present State of our Pharmacies, with Suggestions for Improvement," in which he depicted a very unsatisfactory state of affairs as regards the drug stores on the east side of that city. Not only was the proprietor himself, he said, often undeserving of a pharmaceutical license, but his clerks, as a rule, were ignorant and stupid. Having cited instances of errors in the compounding of prescriptions in his own practice, he expressed the opinion that the physician could never be sure of his patient in the hands of these persons, and also that the druggists were not over honest in either the quality or the quantity of the medicines they dispensed.

As a remedy for these and other evils, he recommended that the number of licensed pharmacists should be limited, as they are in nearly all the large cities of Europe; not more than one to ten thousand inhabitants being given the right to dispense medicines. He also recommended that there should be a more rigid inspection of licensed pharmacists by the State Board of Pharmacy, to the end that fully qualified persons alone should be permitted to compound prescriptions; that the sale of poisons should be allowed only on a physician's prescription; that the patient should always be furnished with a copy of every prescription; and that a regular scale of pieces should be imposed by an authorized board.

A druggist present, thought that the reader had presented entirely too serious a view of the situation. Great improvement, he thought, had been made in the practice of pharmacy in New York during the past eighteen years. It was a fact that the College of Pharmacy had graduated and was still graduating able and accomplished druggists, who were to be thoroughly relied upon, and that they now constituted a great majority of those in practice. He admitted the existence of some incompetent druggists, but believed that this was due to the lack of proper inspection. The Board of Pharmacy had not the requisite means for properly carrying on this work, and he urged the propriety of a memorial to the Board of Health for sufficient funds for the purpose.

Other doctors, who took part in the discussion, referred to the violent competition resulting from the licensing of so many druggists in the same neighborhood, and criticised the system of counter-prescribing practised in all parts of the city.

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MEDICAL NOTES.

Quarantine of Immigrants. — On account of the cholera and the President's proclamation, the number of immigrants arriving in New York during September was only 21,824, against 41,954 in September, 1891. Of the former number many had embarked before the proclamation was issued, and the figures for October show a still greater falling off. The principal steamship companies have not yet attempted to bring in the steerage such persons as are without doubt immigrants, that is aliens whose purpose is to remain in the United States. The report of the English Board of Trade shows that whereas in September, 1891, 5,615 aliens landed in the United Kingdom from Hamburg on the way to America, there was not one such entry during September last. This accounts in a great measure for the immunity from cholera which England enjoyed during the recent epidemic. The English authorities required among other things that all bedding should be burned. The Jews from Russia often lay great store by their bedding, which is sometimes all that they possess; and this rule is supposed to have kept many of them out of England during the past few months.

The Origin of Cholera at Havre. — It is now stated, by the Paris correspondent of the London *Lancet*, that the first case of cholera at Havre occurred July 5th in the person of an elderly woman who had just returned from a visit to Courbevois, a suburb of Paris. This case was followed by others not made public. Cases did not reach Havre from Hamburg until August 26th.

A Death-Bed Joke. — It is not often that a man on his death-bed is guilty of practical joking; but a story is reported from St. Louis, in which a man named O'Reilly, dying of phthisis in a crowded hospital, told a benevolent lady who visited the hospital with her daughter that he had made a will leaving the daughter $3,000. By the influence of this lady, he was moved to a comfortable infirmary. Having found his little trick so successful, he tried it again upon the sisters, saying that he had amended his will, and left half of his property to the institution. He was well cared for and properly buried, and it was not until some time after his death, when a dispute arose between the charitable lady and the infirmary, that it was discovered that he had absolutely nothing in the world.

Vivisection. — The subject of vivisection has recently been brought up again in England, the occasion being the meeting of the Church Congress. The principal speakers in favor were Drs. Wilks and Ruffer, and Mr. Victor Horsley. Mr. Lawson Tait, who has announced himself on previous occasions as an anti-vivisectionist, did not appear. The bishops appear to have been divided, two of them being the principal advocates of the anti-vivisection party. The argument appears to have been very much in favor of the vivisectionists, although no definite conclusions were reached.

Mr. Lawson Tait's challenge to the vivisection party to point to a single instance in which valuable knowledge has been acquired by the aid of experiments on living animals has been met by a refusal on the part of Sir Andrew Clark, Sir James Paget, Dr. Wilks, and Sir George Humphry to discuss the matter in public. They claim that no important progress has been made in medicine, surgery or midwifery which has not been promoted by this method of inquiry.

NEW YORK.

Quail Shooting and a Fox Hunt. — A party of twenty-five physicians, most of them from New York, under the guidance of Dr. Allan McLane Hamilton, who is the President of the Cumberland Gap Park Company, recently paid a visit to the Four Season Hotel and Sanatarium at Harrogate, Tenn., as the guest of the directors of the hotel company. They had some good quail shooting on the company's preserves, and a fox hunt was also gotten up for their amusement.

Edwin Gould, a son of Jay Gould, was married on October 26th to Miss Sarah Cantine Shrady, a stepdaughter of Dr. George F. Shrady, Editor of the New York *Medical Record;* the ceremony taking place at Dr. Shrady's residence on 66th Street, near Central Park.

Miscellany.

TRANSFUSION OF NORMAL NERVE SUBSTANCE.

In the JOURNAL of March 17th, page 273, mention was made of the treatment of neurasthenia by hypodermic injection of nerve substance by Paul, in which a ten per cent. solution of the gray matter of a sheep's brain was injected with good results. More recently Baber[1] has published an account of cases of neurasthenia, melancholy and epilepsy treated by a similar method. The brain and spinal cord of rabbits and sheep were kept absolutely free from germs, and pressed through several layers of clay, and an emulsion was then made with five parts of bouillon and filtered. Of this the neurasthenics generally receive four to five injections, the epileptics five to six weekly, and always four to five grm. of an emulsion of one to five of bouillon. Baber himself and one of his assistants, both suffering from spinal neurasthenia, used it with entire relief of symptoms.

He subsequently treated about forty cases by this method, the neurasthenics declaring themselves better after the first injection; and especially digestive disturbances, fatigue and insomnia, all disappeared after a course of treatment lasting about three weeks.

A number of cases of genuine epilepsy was also treated by the same method, most of them with very striking improvement, or entire cessation of attacks.

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THE SENSE OF SMELL.

In a recent number of the *American Journal of Psychology* Professor Jahsow communicates the results of observations made on a student twenty-one years of age, who suffered from complete anosmia. The patient's mother had had no abnormality of smell until she was thirteen or fourteen, when she had completely lost the sense. In the patient on whom the observations were made the defect was evidently congenital. Taste as well as common and thermal sensibility were undisturbed, and the patient therefore offered a good opportunity for testing the sensations in the mouth and nose, and it might be inferred that differences which he could perceive in savory substances were perceived not by smell but by some other sense. The interesting investigation showed that the greater number of taste perceptions, as they are commonly understood, are really to be referred to smell. No distinction could be made between tea, coffee, and hot water, so that he took the last named, with sugar and milk, as his ordinary breakfast beverage. He confused bitter almond water and water three times in five trials, while he correctly discriminated ether and water, the former, he said, producing in his throat the sensation of peppermint. With ammonia and ether he was right six times in eight trials; and Professor Jahsow ascribes the two errors to fatigue. The various fruit syrups he could not distinguish, merely recognizing them as sweet. Mustard produced a sharp sensation on the tongue, but was not recognized any more than pepper, while cloves and cinnamon were distinguished. Differences of one degree of temperature were easily recognized.

THE TREATMENT OF PNEUMONIA BY TRANSFUSION OF BLOOD FROM A CONVALESCENT CASE.

This case is reported by Hughes and Carter in the *Therapeutic Gazette* for October. The patient was a man, thirty-five years of age, with pneumonia of the lower left lobe, followed a few days later by pneumonia of the lower right lobe also. Four days after the initial attack three hundred cubic centimetres of defibrinated blood taken from a convalescent case were transfused. There was a marked disturbance due to the blood, as was shown by a chill, vomiting and purging, immediately following the injection, slight temporary deafness developing a little later. These symptoms the authors believe to be due to small emboli, and on another occasion they would use serum rather than defibrinated blood. The pulse and temperature both fell decidedly on the day following the transfusion, and although subsequently rising, became normal on the fifth day.

The authors conclude that in this case of double pneumonia which was still progressing, the injection, was followed by a crisis very much sooner than would ordinarily have been expected. The subsequent rise of temperature, that is on the second and third day after the transfusion, was probably due to other causes than pneumonia, as during this time the pneumonic lungs were steadily resolving. There have been reported thirty cases, most of them in Germany, in which definite results appear to have followed the injection, a number large enough to make the evidence strong that the antipneumotoxine in the blood of persons or animals after an attack of pneumonia may be made of great therapeutic value.

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AN ARITHMETICAL PRODIGY.

The French Academy of Science has recently given much time and study to an arithmetical prodigy, Jacques Inaudi, a description of whom is given by Binet in the *Revue des Deux Mondes*. Inaudi is now twenty-five years old, and up to a few years ago could not read nor write. He began to show a wonderful capacity for figures at the age of six. He did not count on his fingers or with any mechanical aid, but the whole operation was mental, and it practically has remained so ever since. His principal operations are additions, subtractions, multiplications, divisions and the extraction of roots. He prefers to have his problems given to him aloud, if they are written, he reads them to himself before beginning. He performs the most complicated problems in the midst of the excitement of public representations, and can even talk while at work. He can add in his head numbers composed of twelve ciphers each and he multiplies by one another numbers composed of from eight to ten figures each. He can find the square or the cubic root of a number of from eight to twelve figures in a very few minutes. It took him thirteen seconds to answer the question "How many seconds are there in eighteen years, seven months, twenty-one days and three hours?" His processes are peculiar; in multiplying two numbers together, he does it by a series of multiplications of their components, and adds the results. His memory for figures is also extraordinary; at the end of a session he remembers all the problems which have been given to him. He is able to repeat a number consisting of twenty-four digits after hearing it once. This extraordinary memory has been the subject of study by most of the psychologists of France. His memory for figures is the only one which has acquired an abnormal extension; memories for other things are normal, but not greater than normal. A series of letters he cannot remember better than any one else, while his memory for colors is very weak.

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[1] Deutsche Med. Woch., No. 30.

According to the researches of Galton, most calculators and mathematicians have a visual image of the figures during their calculations, but in the case of Inaudi this is evidently not so; no figure appears to him in a visual form. This can better be understood if it is remembered that it is but four years since he learned to read and write. A pure auditive image is very rare, and it is probable that in this case the images are helped at least by the sensation associated with the motions of the larynx and mouth required to pronounce them. His lips move slightly while he is at work, and experiments have showed that anything that interferes with articulation makes the calculation longer or modifies its accuracy. It appears therefore that auditive and motor images are combined.

Correspondence.

"SOME DISADVANTAGES OF THE METRIC SYSTEM."

Salem, October 28, 1892.

Mr. Editor: — In the last Journal there appeared a brief note under the above heading.

Now, is it not possible that physicians who still use the old symbols, when writing prescriptions, inadvertently employ the wrong sign quite as frequently as do those who use decimals?

Perhaps this is a matter for the apothecaries to decide.

The French custom of appending in writing the quantity of each ingredient in a prescription, instead of employing decimals, is doubtless to be commended to some prescribers.

After an experience of over fifteen years in prescribing exclusively according to the metric system, the writer would, for one, return to the old method with regret.

David Coggin.

METEOROLOGICAL RECORD,

For the week ending October 15, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 9	29.70	56	58	53	85	58	72	N.W.	N.	4	12	R.	O.	.05
M..10	30.04	51	62	40	67	54	60	W.	W.	8	8	C.	C.	.01
T..11	30.12	57	68	46	57	70	61	S.W.	N.E.	12	4	F.	C.	
W.12	30.44	45	52	38	63	74	68	N.W.	S.E.	5	8	C.	C.	
T..13	30.36	57	68	46	74	78	76	S W.	S.W.	11	12	C.	C.	
F..14	30.08	66	78	55	69	51	62	W.	N.W.	13	8	O.	O.	
S..15	30.11	57	59	55	71	72	73	N.	S.	4	10	C.	C.	
☞	30.12	56	64	48	69	66	68			10	9			.008

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

METEOROLOGICAL RECORD,

For the week ending October 22, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...16	29.93	59	62	56	91	92	92	S W.	N.W.	9	8	R.	O.	0.25
M..17	30.19	51	53	48	81	76	79	N.E.	N.E.	16	4	O.	O.	
T..18	30.12	54	61	47	80	81	81	N.W.	S.W.	5	14	F.	O.	
W.19	29.82	60	67	52	75	62	69	S.W.	W.	18	15	O.	C.	
T..20	30.00	52	59	46	58	55	57	N.W.	N.W.	11	5	F.	O.	
F..21	29.98	51	58	45	71	56	64	W.	W.	9	9	O.	C.	
S..22	29.96	55	64	46	64	49	57	W.	W.	12	9	C.	C.	
☞	30 00	54	61	49	74	67	71							.035

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T.. threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 15, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	738	276	16.38	13.72	6.44	4.34	2.10
Chicago . . .	1,250,000	—	—	—	—	—	—	—
Philadelphia .	1,092,168	390	138	18.72	10.92	4.42	11.18	1.30
Brooklyn . .	955,333	369	163	17.82	13.23	8.91	4.05	.81
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	179	48	14.56	10 08	3.36	3.36	5.04
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	89	25	11.20	6.72	1.12	6.72	2.24
Cleveland . .	281,353	101	46	29.70	2.97	3.96	14.95	5.94
Pittsburg . .	255,000	86	32	25.52	16.24	—	16.24	6.96
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	129	57	14.04	10.92	3.90	2.34	3.12
Nashville . .	87,754	26	7	11.55	3.85	—	3.85	—
Charleston . .	56,048	—	—	—	—	—	—	—
Portland . . .	40,000	22	3	13.65	22.75	4.55	4.55	4.55
Worcester . .	92,313	29	7	6.90	10.35	3.45	—	3.45
Lowell . . .	82,455	30	10	6.66	10.00	3.33	—	3.33
Fall River . .	82,128	—	—	—	—	—	—	—
Cambridge . .	74,644	32	7	12.52	3.13	9.39	3.13	—
Lynn	60,809	24	8	4.16	12.48	—	—	—
Springfield . .	47,052	14	3	14.28	28.56	7.14	7.14	—
Lawrence . .	45,910	22	14	13.65	4.55	9.10	—	—
New Bedford .	44,947	15	6	20.00	—	—	6 66	13.33
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	5	0	20.00	—	—	—	20.00
Salem	31,495	5	1	20.00	20.00	—	—	20.00
Haverhill . .	30,065	7	3	—	14.28	—	—	—
Chelsea . . .	29,479	10	3	—	20.00	—	—	—
Malden . . .	27,252	11	3	18.18	18.18	18.18	—	—
Newton . . .	26,498	10	3	10.00	30.00	—	—	10.00
Taunton . . .	26,464	6	1	16.66	33.33	—	—	16 66
Gloucester . .	26,008	4	1	—	25.00	—	—	—
Fitchburg . .	25,442	7	2	28.56	—	—	—	—
Waltham . .	20,942	8	0	12.50	12.50	—	—	—
Quincy . . .	18,669	—	—	—	—	—	—	—
Pittsfield . .	18,294	3	0	—	—	—	—	—
Northampton .	15,084	—	—	—	—	—	—	—
Everett . . .	14,745	5	1	—	—	—	—	—
Newburyport .	14,031	—	—	—	—	—	—	—
Amesbury . .	13,561	2	2	100	—	—	100	—

Deaths reported 2,381: under five years of age 866; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 398, consumption 278, acute lung diseases 259, diphtheria and croup 142, diarrhœal diseases 123, typhoid fever 59, scarlet fever 26, whooping-cough 16, cerebro-spinal meningitis 10, malarial fever 7, erysipelas 6, small-pox 5, measles 4.

From scarlet fever New York 6, Philadelphia 5, Brooklyn, Boston and Cleveland 3 each, Cincinnati, Pittsburgh, Lawrence, Fitchburgh, Waltham and Pittsfield 1 each. From whooping-cough New York 7, Brooklyn 6, Washington 2, Nashville 1. From cerebro-spinal meningitis Washington 4, New York 3, Brooklyn 2, Nashville 1. From malarial fever New York 3, Cleveland 2, Philadelphia and Boston 1 each. From erysipelas Brooklyn 2, New York, Cincinnati and Pittsburgh 1 each. From small-pox New York 4, Brooklyn 1.

RECORD OF MORTALITY

For the Week ending Saturday, October 22, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	665	259	15.00	16.20	4.35	4.65	2.25
Chicago . . .	1,250,000	377	162	18.63	12.69	1.89	10.80	4.32
Philadelphia .	1,092,168	403	134	16.00	7.50	.75	12.50	2.25
Brooklyn . .	955,333	315	119	15.04	18.24	6.08	4.16	1.60
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	186	59	17.28	9.18	1.62	4.86	4.32
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	—	—	—	—	—	—	—
Cleveland . .	281,353	87	30	27.37	13.09	4.76	15.47	3.57
Pittsburg . .	255,000	—	—	—	—	—	—	—
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	103	35	18.43	8.73	3.88	4.85	6.79
Nashville . .	87,754	27	9	3.70	7.40	—	—	3.70
Charleston . .	56,048	32	11	6.26	—	—	3.13	—
Portland . . .	40,000	13	3	—	23.07	—	—	—
Worcester . .	92,313	20	11	25.00	10.00	—	5.00	5.00
Lowell . . .	82,455	40	11	12.50	12.50	2.50	5.00	5.00
Fall River . .	82,128	—	—	—	—	—	—	—
Cambridge . .	74,644	17	7	23.52	5.88	17.64	—	—
Lynn	60,809	19	8	10.46	—	5.23	—	5.23
Springfield . .	47,052	16	5	6.25	12.50	—	6.25	—
Lawrence . .	45,910	—	—	—	—	—	—	—
New Bedford .	44,947	14	6	28.56	14.28	21.42	7.14	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	6	1	—	—	—	—	—
Salem	31,495	8	2	25.00	—	—	12.50	—
Haverhill . .	30,065	3	1	—	—	—	—	—
Chelsea . . .	29,479	8	0	—	25.00	—	—	—
Malden . . .	27,252	5	1	20.00	—	—	—	20.00
Newton . . .	26,498	11	2	9.09	18.18	—	9.09	—
Taunton . . .	26,464	5	1	—	—	—	—	—
Gloucester . .	26,008	4	0	—	—	—	—	—
Fitchburg . .	25,444	5	2	40.00	20.00	40.00	—	—
Waltham . .	20,942	8	0	12.50	—	—	—	12.50
Quincy . . .	18,669	4	0	—	25.00	—	—	—
Pittsfield . .	18,294	4	2	25.00	—	—	25.00	—
Northampton .	15,684	—	—	—	—	—	—	—
Everett . . .	14,745	1	0	—	—	—	—	—
Newburyport .	14,031	4	0	—	—	—	—	—
Amesbury . .	13,561	6	2	33.33	33.33	—	33.33	—

Deaths reported 2,427: under five years of age 888; principal infectious diseases (small-pox, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 387, acute lung diseases 302, consumption 281, diphtheria and croup 163, diarrhœal diseases 84, typhoid fever 72, scarlet fever 31, whooping-cough 20, malarial fever 7, measles 6, cerebro-spinal meningitis 6, erysipelas 2.

From scarlet fever Boston 12, New York and Philadelphia 6 each, Cleveland 3, Chicago 2, Brooklyn and Cambridge 1 each. From whooping-cough New York 10, Brooklyn 4, Washington and Worcester 2 each, Chicago and Philadelphia 1 each. From malarial fever Brooklyn 5, New York and Philadelphia 1 each. From measles New York 3, Chicago 2, Philadelphia 1. From cerebro-spinal meningitis New York 4, Washington and Worcester 1 each. From erysipelas New York and Chicago 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending October 8th, the death-rate was 17.8. Deaths reported 3,470: acute diseases of the respiratory organs (London) 184, diarrhœa 206, diphtheria 73, measles 70, scarlet fever 68, fever 45, whooping-cough 43.

The death-rates ranged from 10.3 in Croydon to 26.7 in Salford; Birmingham 18 1, Brighton 21.5, Cardiff 15.3, Gateshead 17.7, Hull 18.1, Leeds 19.0, Leicester 12.7, Liverpool 22.0, London 16.4, Manchester 21.8, Newcastle-on-Tyne 20.3, Nottingham 17.4, Portsmouth 14.0, Sheffield 19 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending October 15th, the death-rate was 17.3. Deaths reported 3,382: acute lung diseases (London) 241, diarrhœa 123, measles 77, diphtheria 59, scarlet fever 53, fever 39, whooping-cough 34, small-pox (Liverpool, Manchester, Oldham and Leeds 1 each) 4.

The death-rates ranged from 8.4 in Croydon to 30.6 in Preston; Bradford 17.4, Birmingham 17.3, Hull 17.8, Leeds 17.9, Leicester 13 6, London 17.1, Liverpool 20.2, Manchester 19.6, Nottingham 15.3, Portsmouth 15.0, Sheffield 17.9, Sunderland 16 5, West Ham 16.1.

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, November 7, 1892, at 8 o'clock.

Readers: Dr. F. M. Briggs, "The Avoidance of Scar in the Treatment of Cervical Abscess, with three cases."

Dr. R. E. Darrah, "Report of Three Cases of Caries of the Coccyx."

Reports of committees.

JOHN C. MUNRO, M.D., *Secretary.*

The New York State Medical Association will meet November 15th, 16th and 17th, at the Mott Memorial Hall, New York.

E. D. FERGUSON, M.D., *Secretary*, Troy, N. Y.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 22, 1892, TO OCTOBER 28, 1892.

Captain Freeman V. Walker, assistant surgeon, U. S. A., granted leave of absence for one month to take effect on arrival of **First-Lieut. George D. De Shon**, assistant surgeon, U. S. A., at Fort D. A. Russell, Wyoming.

First-Lieut. George D. De Shon, assistant surgeon, U. S. A., is relieved from duty at Columbus Barracks, Ohio, and will report in person to the commanding officer, Fort D. A. Russell, Wyoming.

So much of S. O. 230, as relates to change of station of **Captain Eugene L. Swift**, assistant surgeon, is suspended until further orders, and he is granted leave of absence for one month, on account of sickness, with permission to apply for an extension of one month.

First-Lieut. Allen M. Smith, assistant surgeon, U. S. A., is relieved from further duty at Fort Assinniboine, Montana, and assigned to duty at Fort Custer, Montana, where he has already been ordered to temporary duty.

Captain Edward R. Morris, assistant surgeon, U. S. A., is relieved from duty at Fort Custer, Montana, and will report in person for duty to the commanding officer, Fort Warren, Mass., relieving **Captain Peter R. Egan**, assistant surgeon, U. S. A. Captain Egan on being relieved by Captain Morris, will report in person to the commanding officer, Fort Custer, Montana, for duty at that post.

First-Lieut. Wm. E. Purviance, assistant surgeon, U. S. A., is relieved from duty at Jefferson Barracks, Mo., and will report in person to the commanding officer, Fort Sherman, Idaho, for duty at that post, relieving **Captain Wm. W. Gray**, assistant surgeon. Captain Gray on being relieved by Lieut. Purviance, will report in person to the commanding officer, Fort Schuyler, N. Y., for duty at that post.

Major John C. J. Happersett, surgeon, U. S. A., is relieved from duty at Fort Custer, Montana, and will report in person to the commanding officer, Fort Keogh, Montana, for duty at that post, relieving **Major Philip F. Harvey**, surgeon. Major Harvey, on being relieved from duty by Major Happersett, will repair to West Point, N. Y., and report in person to the Superintendent of the U. S. Military Academy, for duty at that post, relieving **Major Henry McElderry**, surgeon. Major McElderry, on being relieved by Major Harvey, will repair to Omaha, Nebraska, and report in person to the commanding general, Dept. Platte, for duty as attending surgeon, etc.

RECENT DEATHS.

John Q. A. Tourtellot, M.D., M.M.S.S., died in Fall River, October 28th, aged fifty-one years. He graduated from the Bellevue Medical College in 1873.

James Ross, M.D., of New York, died suddenly on October 22d, at Lincoln, Nebraska. He graduated from the New York Medical College in 1851, and was seventy-two years of age at the time of his death.

Henry Prevall, M.D., of Mount Morris, Livingston County, N. Y., died October 24th, at the age of sixty-five years.

BOOKS AND PAMPHLETS RECEIVED.

First Annual Report of the Boston Emergency Hospital, July 1, 1892.

Can Croupous Pneumonia be Aborted? By Thomas J. Mays, M.D., Philadelphia. Reprint. 1892.

Early Medicine and Early Medical Men in Connecticut. By Gurdon W. Russell, M.D. Hartford. 1892.

Corrosive Sublimate as a Germicide. By Charles T. McClintock, A.M., of Ann Arbor, Mich. Reprint. 1892.

Hydro-Naphthol in the Prophylaxis and Treatment of Cholera, Report of Laboratory Experiments. Treatment of Sacculated Aortic Aneurism by Electrolysis through Introduced Wire. Report of a Case. By D. D. Stewart, M.D., Philadelphia. Reprints. 1892.

Original Articles.

REMOVAL OF THE STAPES IN CHRONIC CATARRHAL OTITIS MEDIA AND IN CHRONIC SUPPURATIVE OTITIS MEDIA.[1]

BY FREDERICK L. JACK, M.D.,
Assistant Aural Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Instructor in Otology, Boston Polyclinic, etc.

In 1875, Dr. Kessel, of Jena, called the attention of the medical public to a case in which he had removed the drum-membrane, malleus and incus. Attention was again called to the same subject in 1885 by Dr. Schwartze, who added the result of his own experience in performing the operation. On July 20, 1886, Dr. Sexton read a paper before this Society, describing what is practically the same operation as that performed by Drs. Kessel and Schwartze, but with a different object in view. This object was the cure of chronic otorrhœa. Later he did the same operation to improve hearing.

During my term of service for Dr. Blake last spring at the Massachusetts Eye and Ear Infirmary, I had occasion to perform this operation for otorrhœa about twenty-five times, with general success. About June 19th, I undertook the operation on I. D., aged twelve, whose ear had been discharging constantly since babyhood, the result of an attack of scarlet fever. Having removed portions of the membrana tympani, malleus, and incus, and curetted a few granulations from the attic, an examination with the probe showed the head of the stapes to be carious. Fearing the operation would not be successful if the stapes in such a condition were left in the ear, I determined to remove it. By passing a slender knife around the head of the bone, it was loosened from its adhesions; after this a very small hook was introduced behind it, and it was extracted with little effort. However, in its removal, there was observed an amount of suction which led to the fear that a portion of the bony wall might have adhered to it. But this fear proved ungrounded. The removal of the stapes was undertaken in this case with the greater hope of success, as there was in mind an article recently published by a Frenchman,[2] in which it was stated that the stapes had been removed from animals safely, and that their hearing had been found improved thereby. Careful tests made before the operation on I. D. had shown that there was very little hearing in the ear, as will appear by the report of the case later. On the morning following the operation the patient said that she now heard sounds which she had never before noticed. This fact struck me so forcibly that I was led to hope for good results from the removal of the stapes in other cases.

Some weeks previous to this, two cases of chronic non-suppurative inflammation of the middle ear, from which had resulted a marked degree of deafness, were operated on in order if possible to improve the hearing. From the ears in the worse condition I removed the entire drum-membrane, malleus and incus. The history of these cases is as follows: B. S., thirty-five years old. Had been hard of hearing for fifteen years, but had grown rapidly worse within the last two years. Loud voice heard at a few feet. Both drumheads were dull in color and slightly sunken. Operation, April 2, 1892. Left membrana tympani, malleus, and incus removed. Operation was followed in a few days by pain and slight mucous discharge. No improvement in hearing. Two months after the operation, the ear remaining without treatment during the time, granulations were discovered on the promontory. These were partially removed, touched with a solution of copper and dermatol insufflated. At the present time the ear is healed, but the hearing remains the same as before the operation.

Second Case: D. S., fifty years old. Hearing much impaired for eight years by chronic non-suppurative inflammation of the middle ears. The drumheads were thickened and retracted. May 18, 1892. Operation on the right ear the same as in the preceding case. The hearing was improved for several days and then gradually returned to the previous condition. Patient experienced considerable pain for two nights and was annoyed for four weeks by a purulent discharge from the ear, which up to the present time continues to form crusts.

Notwithstanding the fact that these operations were performed with all care, and that there was in the second case an improvement in the hearing for a few days, both cases subsequently developed otorrhœa, and the second, tinnitus. Furthermore, in the second case, the drum-membrane had been entirely reproduced, with the exception of an extremely small opening in the centre. Led by these results, I resolved in future cases to see what would be the effect of removing but a small portion of the drum-membrane and the stapes only, leaving the malleus and incus; since which time I have performed operations in this way, with uniformly good results. Recently, the benefits to be derived from the removal of the stapes, were suggested to the two patients above mentioned, with the hope of thus securing what would be, perhaps, the very best basis of comparison of the two operations. Unfortunately they declined to submit to further surgical treatment.

Not only is the simple removal of the stapes much better in its result, as shown by the operations already performed, but on the ground of conservative surgery, it is much to be preferred. It produces greater improvement in the hearing, and, according to my experience up to the present, there has been no inflammatory reaction whatever, or any other bad results. It may justly be considered a delicate operation requiring at the hands of the surgeon patience and steadiness. So far as I have been able to discover, just such an operation as has been performed in these cases has never been heretofore reported. Accordingly, the operation in detail may be here described.

The patient is thoroughly anæsthetized in the upright position and the head held perfectly still by an assistant. The small field of operation is clearly illuminated by an incandescent electric head-light, or by reflected daylight, which is usually sufficient. Absolute cleanliness is to be observed. Each step in the operation must be slowly and most thoroughly performed and may sometimes necessitate the use of a magnifying glass.

The first step is to make a cut shaped like an inverted V in the drum-membrane, just over the incudo-stapedial joint, and allow the part so loosened to fall outwards, being careful to make the incision very close to the auditory ring. The forward incision is started just behind the handle of the malleus and carried up to meet the first cut. This gives a clear view of the long process of the incus and the incudo-stapedial articulation, and also affords an excellent opportunity to observe directly the pathological conditions in this, the most important part of the ear for hearing. In fact, as one or two of the following cases illustrate, a condition is sometimes found which none of the ordinary tests for hearing could have revealed. It might be well then, in certain instances, even for diagnostic purposes alone, to make such an exploratory opening. But to return to the operation. It is important next to separate thoroughly the stapedius muscle from the head of the stapes. This is done by passing a very slender knife (Fig. 1) behind the head of the bone and then carefully cutting the muscle at a short distance from the neck of the bone. Experience shows that this muscle must be completely severed, otherwise, when the stapes is loosened, the muscle will pull its head out of sight and cause great trouble in its subsequent removal. Having cut the muscle, any adhesions between the long process of the incus and inner bony wall of the middle ear cavity are divided. Often the process so freed will spring downwards in the place, facilitating the next step. The articulation with the long process of the incus is then severed by passing through the joint, from behind, forwards a very small triangular knife bent in the shape of an obtuse angle (Fig. 2). If the stapes is not yet perfectly loose, it can be made so by passing a small pointed knife around the head (Fig. 3). A small hook (Fig. 4) or sometimes forceps (Fig. 5) now introduced behind the head will, with gentle traction, usually remove the stapes. However, in a few cases the stapes will be found so firmly fixed by bony adhesions that a portion will unavoidably remain in the oval window. Yet even in these cases some improvement may be expected. In some cases it may be necessary to remove the incus to make room for removal of the stapes. This especially applies to those cases in which the topographical relations of the auditory ring, together with marked retraction of the ossicula chain, renders the space for manipulation too small. This condition of the ear will sometimes render the operation impossible. The few drops of blood that ooze from the wound are easily controlled by a few applications of a two per cent. solution of cocaine. The field must be kept absolutely dry with cotton as the operator must see what he is doing. The bone usually comes away with some suction. Slowing of the pulse on touching the stapes was noticed in some cases. This may have arisen because the patient was not thoroughly under ether. The patients usually remained quietly in bed two or three days, keeping the ear plugged with a collodion dressing undisturbed. A clot of blood remained in the wound for a few days, but gradually disappeared. In cases of chronic suppuration of the middle ear the stapes is rarely found diseased. Its removal under these most unfavorable conditions, however, has been followed by no untoward symptoms, but on the contrary has apparently hastened

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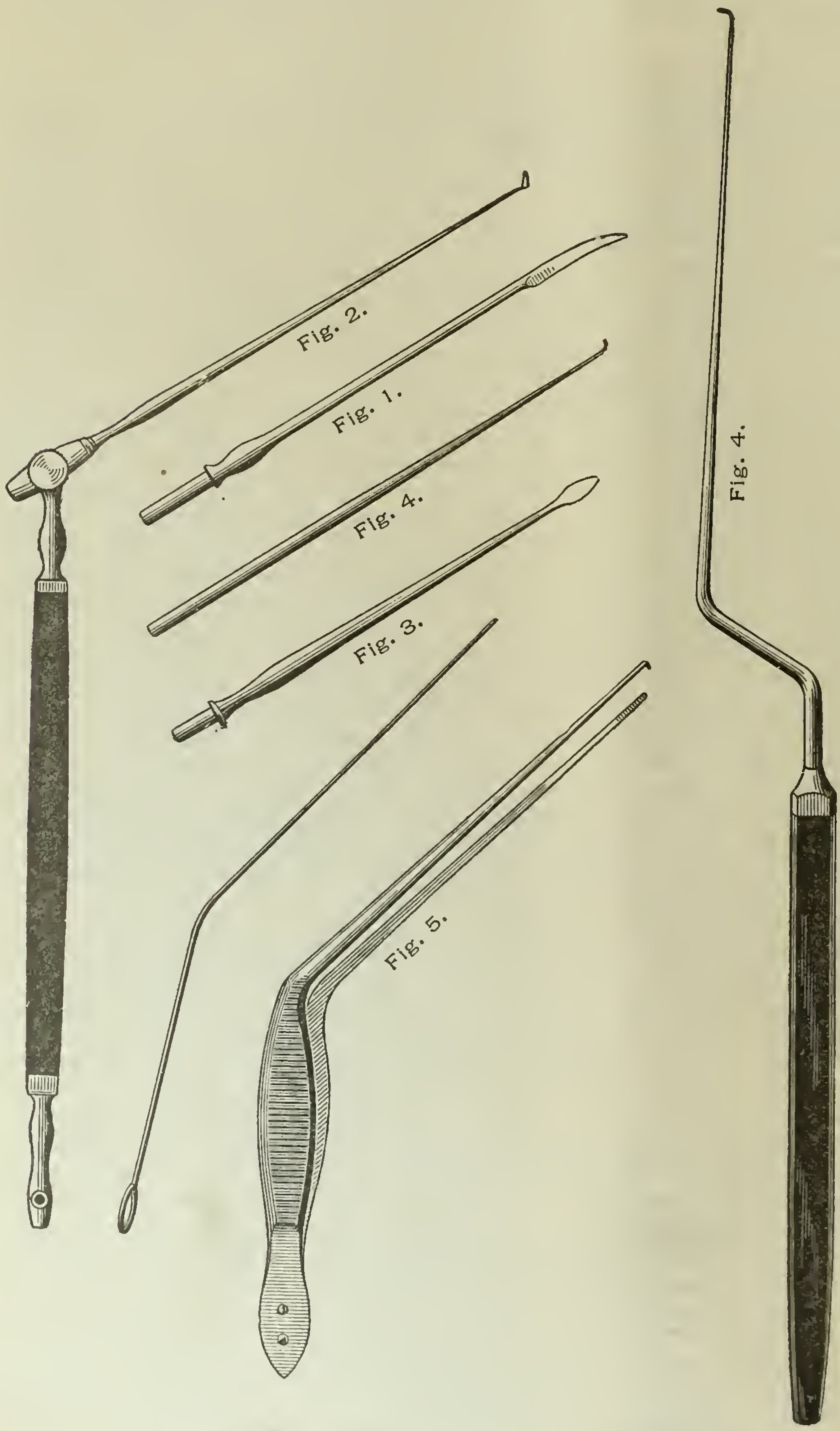
[1] A paper read before the American Otological Society, July 19, 1892, with a few subsequent additions.

[2] Botey (Ricardo). Expériences d'avulsion de l'étrier chez les animaux. Annales des maladies de l'oreille, No. 1, January, 1891.



The above instruments were made by Codman & Shurtleff, Boston.

healing of the ear. Experience has shown that in the cases where the ear has suppurated and healed, the operation is rendered much more difficult by the conditions thus produced, than in cases of so-called chronic catarrh.

In performing these operations, valuable assistance and suggestions have been received from Dr. W. S. Bryant, for which I desire here to acknowledge my obligations.

Case I. I. D., aged 12, otitis media suppurativa chronica in the left ear for eight years. Heard only moderately loud voice. Ear continually discharging. The upper portion only of the drum-membrane was left.

Operation, June 3, 1892. Remnant of the drum-membrane with the malleus and incus removed. Small amount of granulations curetted from the attic. Head of the stapes found carious. It was separated from adhesions and removed with the hook. Slowing of the pulse was noticed upon moving the ossicle. Soon after the operation, slight dizziness. No pain in the ear. Could now hear voices better than she could before. Ear ceased discharging in two days. Nineteen days after the operation the middle ear was found perfectly dry.

Ordinary voice heard at twenty-one feet.

Five weeks after the operation the ear was found still perfectly dry and a moderately loud voice could be heard at twenty-five feet.

Case II. A boy, 12 years of age, in poor physical condition. Chronic suppurative inflammation in the right ear for several years. A small portion only of the membrana tympani was left and the manubrium of the malleus had sloughed away. He could distinguish words spoken in an ordinary voice at ten feet.

Operation, June 6, 1892. The remains of the membrane and the malleus were removed with some difficulty because of thick bands of tissue around the head of the bone. The incus was found, after long searching, firmly adherent to the anterior superior portion of the attic. It was freed from its attachment by means of a slender curved knife and removed with a bullet-tipped incus hook. The head of the stapes was next loosened and the bone removed. Nothing peculiar was noticed about the pulse. The ear was syringed with a solution of corrosive sublimate (1 to 3000) and sealed with absorbent cotton. The operation lasted one hour and fifteen minutes. For the next twenty-four hours patient had considerable vertigo. Said, that on moving his head on the pillow, objects in the ward went "round and round."

June 15th, nine days after the operation, the hearing remained good and the ear was only slightly moist.

July 8, 1892. Hearing had improved since the operation, could hear whispered voice, eight feet; ordinary voice, eighteen feet. Ear only slightly moist and had not been syringed for one month.

Case III. A boy, about 12 years old, with chronic suppurative inflammation in the left middle ear for nine months. A small perforation was discovered high up in the membrana flaccida, but the membrana tensa was whole.

Whispered voice, 18 inches; ordinary voice, 20 feet; H. A. S., $\frac{4}{60}$; tuning-fork, R. C., vertex, S. plus; mastoid, S. plus.

Operation, June 18, 1892. The entire membrana was separated from the auditory ring. The tensor tympani was divided and the malleus brought forward by passing a blunt hook behind the neck. The incus was removed by means of a hook without difficulty. The head of the stapes was next loosened and removed by means of hook and forceps. The bone came away in three pieces, leaving in the window a small portion of the foot-plate. The attic was found crowded with granulations, a condition which was suspected before the operation. These were carefully removed with forceps and curette. Three weeks afterward, the ear was discharging slightly and the hearing was as follows:

Whispered voice, eight feet; ordinary voice, 20 feet; tuning-fork, bone, S. plus; mastoid, S. plus; H. A. S., $\frac{2}{60}$.

Case IV. Female. Anæmic and worn out with pain from syphilitic iritis. The left middle ear showed the effects of an old suppurative process. Through a thin cicatrix the long process of the incus and the head of the stapes were seen.

Loud voice heard at 15 feet; H. A. S., $\frac{3}{60}$; König's rods, 35,000; tuning-fork by bone in left ear.

A triangular opening was made through the cicatrix. The tendon of the stapedius muscle was cut, then the incudo-stapedial joint divided and the head of the stapes freed from synechial bands. The bone was now quite movable, but eluded all attempt to engage the hook behind the head. It was, however, at last captured and removed entire. The trouble experienced here was undoubtedly due to the action of the stapedius muscle, which was not wholly divided. The bone being loosely held in the oval window, the action of the muscle naturally pulled the head out of sight. No change in the pulse was noticed. There was no bleeding. Nausea and vertigo were complained of for twenty-four hours. She was somewhat dizzy in walking for six days. Hearing much improved.

H., $\frac{10}{60}$; whispered voice, eight feet; ordinary voice, 20 feet; improvement in König's rods of 5,000.

Ear showed no signs of inflammation at the end of a week. Sixteen days after the operation the hearing remained good.

(To be continued.)

A STUDY OF FLAT-FOOT, WITH SPECIAL ATTENTION TO THE DEVELOPMENT OF THE ARCH OF THE FOOT.[1]

BY JOHN DANE, A.B., OF BOSTON,
House Officer, Massachusetts General Hospital.

(Concluded from No. 18, page 432.)

Shape of Plate. — Next as to shape of the plate. The fundamental form is simply a flat sheet of metal as wide as the sole of the foot, extending from the back of the heel to the webs of the toes and bent up slightly on the inner side. Fig. 13, from Hoffa, shows such a plate. Fig. 14, from Bradford and Lovett, shows one a a little less large, and Fig. 15 is a photograph from a plate fitted at the Children's Hospital. Held firmly by the shoe, these plates have little tendency to slip and are quite comfortable; but they give only a limited support.

Against this pattern Whitman has urged that it is unnecessarily heavy, and that it interferes considerably with the free flexion of the foot while walking. To meet these difficulties he published in the *Boston Medical and Surgical Journal*, June 14, 1888, the description of the plate which has since gone by his name (Fig. 16). He takes a point, A, "beneath the base of the great toe just short of its bearing centre; a point B, just short of the bearing centre of the heel bone beneath its inner tuberosity; C, just above the head of the astragalus, a little in front and below the internal malleolus." These and a "point D, on the outer aspect of the foot just above and behind the tuberosity of the fifth metatarsal," he connects with curved lines as shown in the figures; A and B act as the two bearing points for the plate, and from them, at right angles, runs the lever arm D. As weight is put upon this plate it crowds the lever-arm down and this forces the body of the plate up against the calcaneo-scaphiod joint, and so preserves the damaged internal arch.

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[1] Being a thesis presented for graduation in the Harvard Medical School.

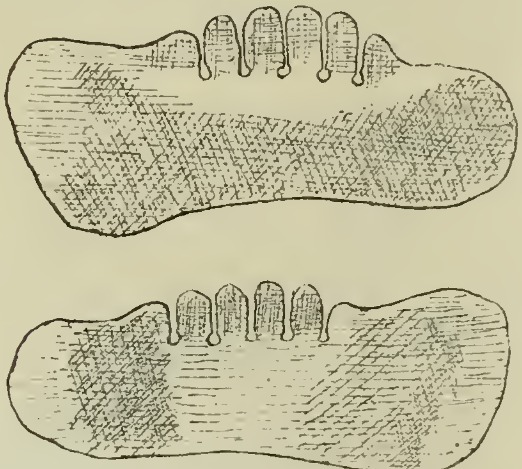

FIG. 13. Flat-foot plates (after Hoffa).

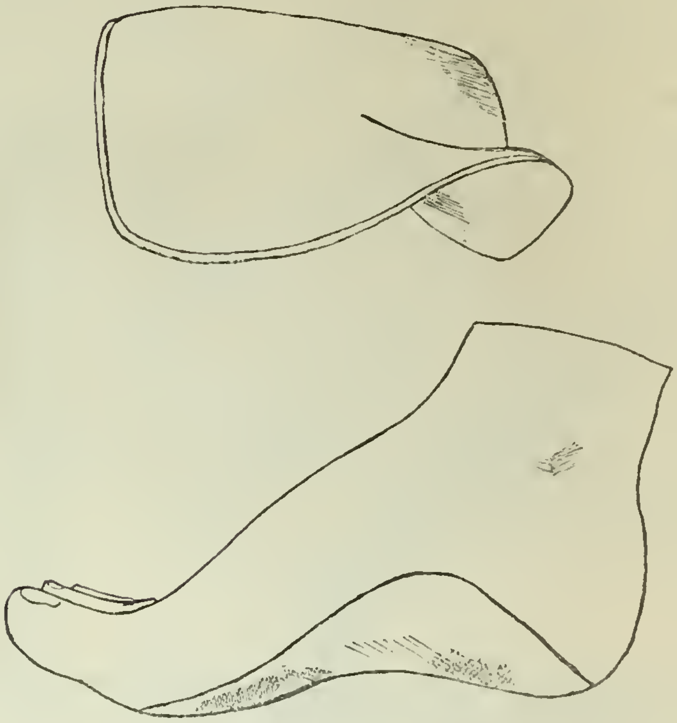

FIG. 14. Flat-foot plate (after Bradford and Lovett).

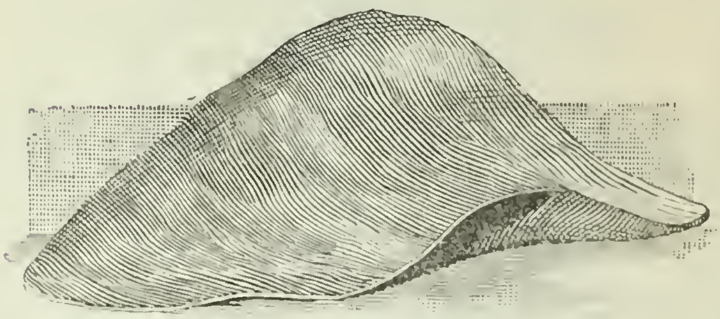

FIG. 15. Flat-foot plate from Children's Hospital, Boston.

The objection to this shape of plate is its unstable bearing, and the great difficulty of keeping it in its proper place. That Whitman himself recognized this is shown by his last publication,[21] in which he figures

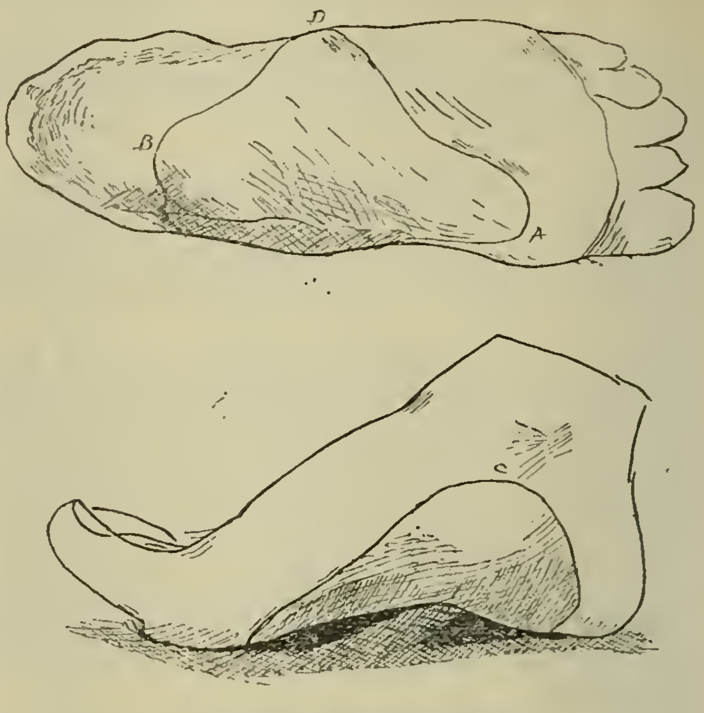

FIG. 16. Flat-foot plate.

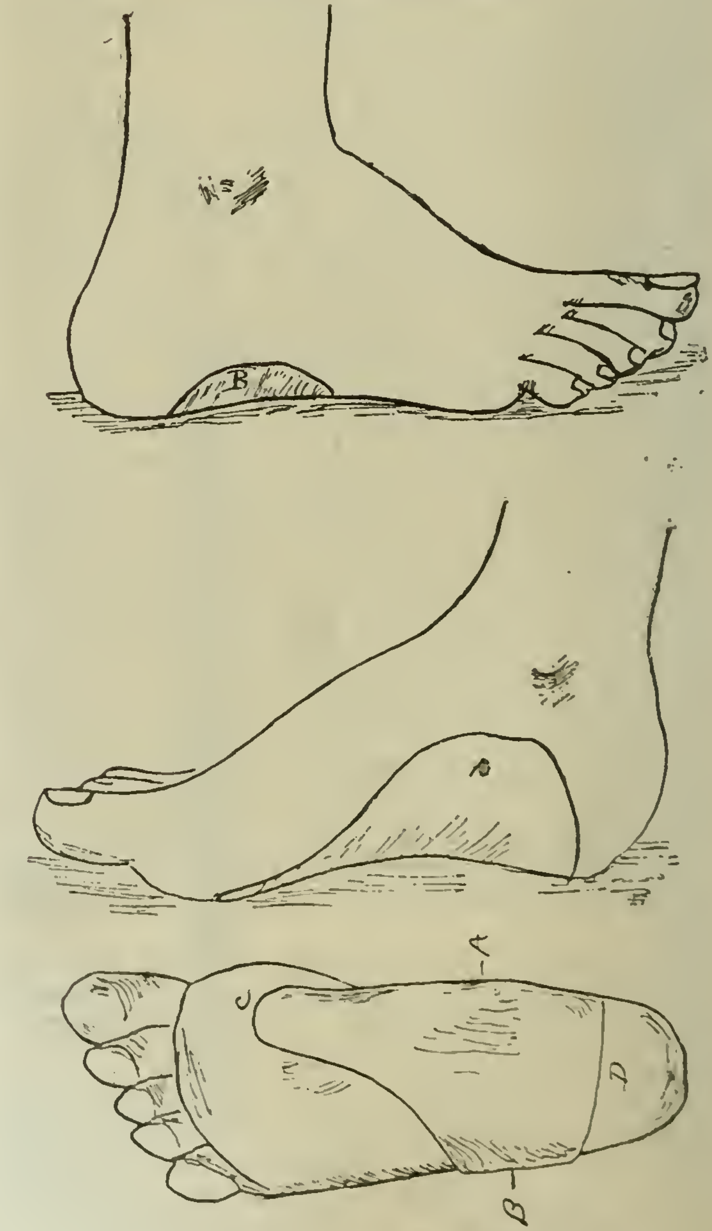

FIG. 17. Flat-foot plate (after Whitman, 1892).

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[21] New York Medical Journal, February 22, 1892.

a plate considerably broader on the sole, and one that has a flange on the outer side of the foot (Fig. 17).

During the summer of 1891 experiments were made by the writer in the Out-Patient Department of the Massachusetts General Hospital, and a shape of plate very similar to the plate last described was adopted (Fig. 18). The points of difference would seem to be but two.

(1) The flange on the outside of the foot is made a little higher, and carried a little farther towards the heel. The reason for the change is this: In order to pronate the foot and turn the astragalus inwards as we find it in flat foot, the outer border of the os calcis must be both raised and pushed further from the median line. By increasing the size of the external flange this tendency of the os calcis to tip over is better counteracted.

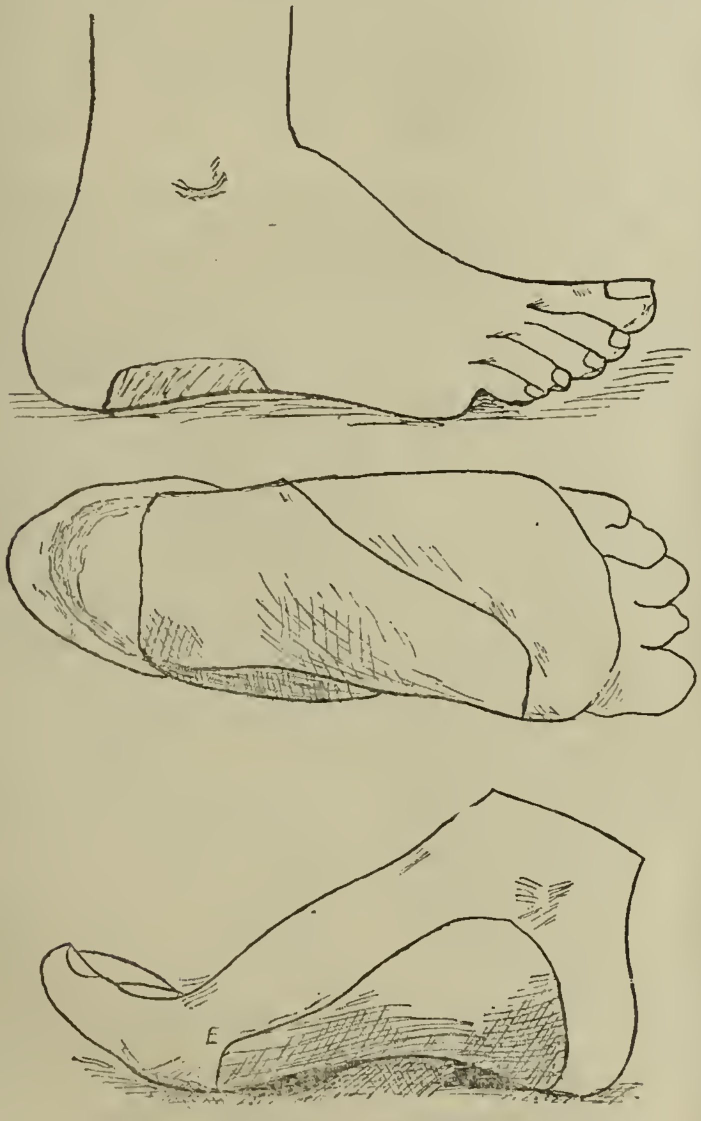

Fig. 18. Flat-foot plate (after Whitman, 1888).

(2) The second difference is in bringing the plate up sharply on the inside at the point E. This gives an inside bearing over the whole span of the internal arch, and materially increases the force of the outward thrust of the plate; and especially does it work against the formation of the zigzag internal line made by the displacement of the first metacarpal bone and its proximal phalanx as show in Fig. 3.

MATERIALS.

Steel. — Lastly as to the material of the plate. As has been stated, the material used by Whitman in New York is hammered steel, which in addition is nickel-plated or japanned. But the plating soon wears off, and the steel exposed to the moisture of the foot rusts and breaks. This happens in six months or less. Besides, such plates are quite expensive, costing from three to six dollars apiece.

Aluminum Bronze. — Aluminum bronze is perhaps the favorite metal in Boston. It is somewhat heavier than steel, which is a serious objection. When new it takes a beautiful polish, but when worn it speedily tarnishes and soon soils the stockings. It is only fairly firm; after a few months the constant pressure breaks it down, and so destroys much of its usefulness. Like the steel it may snap. These plates can be made for two dollars and seventy-five cents each.

Aluminum. — The metal aluminum, besides costing about five dollars a plate, has proved too brittle to be of much service for adults. For children it answers well, where its lightness is a great gain. It is also very permanent.

Bell Metal. — For cheap plates for out-patient clinics some experiments were tried by Dr. Bullard. A mould was taken with Canton flannel and plaster in the Harrington method, which, without backing, was sent to the foundry and used as a core for a clay mould. Bell metal was used for the casting. It gives an excellent surface and resists corrosion well. So far as tested it was about as tough as the aluminum bronze and cost only about seventy-five cents a plate. The greatest objection is in its weight, which somewhat exceeds the bronze, but for out-patients this is less serious than price; therefore, the plate seems to promise well.

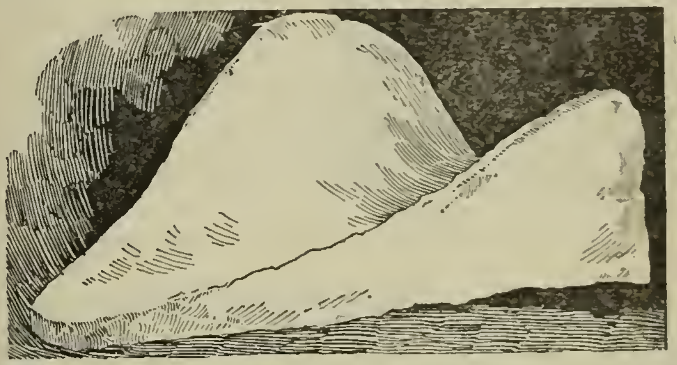

Fig. 19. Negative mould of plaster-of-Paris used in making hard-rubber plates.

Cast Steel. — A still cheaper plate was made from cast steel, smoothed on a wheel and nickel plated. Its cost was only thirty-five cents; but as it is rougher than bell metal, and more liable to wear off and rust, it was not thought so good.

Rubber. — An attempt has been made by the writer to get a flat-foot plate of hard rubber. This substance combines many advantages, It is exceedingly light, which for women and children is a great point; it is uninjured by water or by the perspiration of the foot, and does not tarnish or soil the stocking. Moreover, it is not absolutely rigid, its very slight amount of spring proving a great comfort to the wearer. The method of making was this: A shell of the desired shape is made of wax in the manner previously described; it is then greased and filled up on the back side with plaster. When hard the wax is removed, leaving a negative cast (Fig. 19). This is sent to the Davidson Rubber Company, who fill in the cast with a thin layer of sheet rubber, and vulcanize it at a temperature of 300° C. The price is one dollar and a half.

During the fall, upwards of thirty of these plates were put in use. The result has been only a partial success. For light women and for children the plate has answered most admirably. If made after the older patterns it proved strong enough for the heaviest patients; but when the outside was carried well up as shown in Figs. 17 and 18, the cross-strain was more than the rubber could be counted upon to stand when weighted by a heavy adult. Yet some few of the plates have even under these circumstances proved equal to the task. Further experiments are now being carried on in the hope of making the rubber plate still stronger.

In addition to the advantages already mentioned rubber has one more. By holding the plate for a moment to the flame, the shape can be altered and an absolute fit can thus be easily obtained.

Whatever form of plate is used, the good derived from it is strictly negative. It prevents the arch from further breaking down, but it does not directly build it up. To do this one must first build up the general physical condition, if it is run down; then by teaching the patient a proper walk, and requiring him daily to practice the form of gymnastics already referred to, we strive so to strengthen the muscles and ligaments that they can again perform their proper work unaided. This in ordinary cases requires from six to ten months, after which time the plate can safely be omitted. A good fitting shoe will thereafter be all that is required.

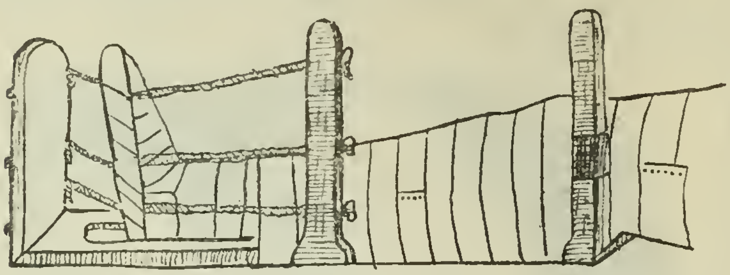

Fig. 20. Apparatus for stretching flat-foot (after Hoffa).

Unfortunately, all cases that come for treatment cannot be thus easily cured. Owing to the length of time that the process has been going on, the extensor and abductor muscles may be in such a state of contracture as to resist all our efforts to replace the foot in its normal position. Rest in bed and massage will, however, usually be sufficient if the difficulty is with the muscles alone. Still more serious is the case when the bones themselves have become much displaced and firmly held in their abnormal relations by the products of the low grade of inflammation which accompanies the breaking down of the arch. A few forms of apparatus for gradually stretching the foot back into place have found favor. That of Hausmann, which is warmly praised by Hoffa, is show in Fig. 20.

Manipulation under Ether. — The usual procedure in such cases is to anæsthetize the patient and forcibly break down the adhesions, crowd the bones back into place, and at once restore the foot to its normal shape. When the deformity has been thoroughly reduced the foot is put up in a plaster bandage in an over-corrected position, that is, forced adduction and flexion. After four weeks' rest this plaster is taken off and active treatment begun. Such treatment aims at restoring the free and painless motions of the foot, particularly those of flexion and adduction.

The foot should be soaked in hot water and thoroughly massaged before any "twisting" is begun. The surgeon should then grasp the heel with the hand of the same side, so that the ball of the thumb may press firmly against the patient's instep; over this, as a fulcrum, the fore part of the foot is forced by steady pressure with the other hand. When the limit of action has been reached the foot should be held in the same position until the pain caused by the stretching has subsided. While the foot is still so held the patient is directed to flex and extend the toes, and to make voluntary efforts at abduction and adduction. This should be done once a day for at least two weeks. In addition to this, the cast for the plate having been taken as soon as the foot is taken out of plaster, the patient should be taught how to walk with his plate, and should be directed to go through his gymnastic exercises by himself several times daily.

Operative Treatment. — Of operative measures but three have met with much favor; first, that advised by Ogston,[22] which aims at forming an anchylosis between the astragalus and scaphoid bones. This is obtained by removing their articular surfaces, and fastening the bones together by means of ivory pegs in a correct position.

Second, a less severe operation has been advised by Mr. Stokes,[23] who proceeds as follows: Having rendered the parts to be operated on aseptic, he makes an incision an inch and a half in length along the inner edge of the foot, the centre of the incision being at the prominence formed by the head of the astragalus. Near the centre of this incision, at right angles to it and a little below the situation of Chopart's joint, is made a second incision, and the two triangular flaps of skin dissected back for about half an inch. A wedge shaped piece of bone from the enlarged head and neck of the astragalus is removed with an osteotome, and the foot is then put up in plaster in the corrected position. Both these operations are open to the objection of leaving a stiffened joint in the centre of the foot.

An operation which is rapidly gaining favor both in Germany and in this country is that advised by von Trendelenburg,[24] which is confidently spoken of as the operation of the future. It is nothing more than the artificial production of bow leg. The tibia and fibula are respectively chiselled through subcutaneously a short distance above the ankle-joint. The ankle is then taken under the arm and the foot forcibly placed in the normal position. The ankle and foot are then put up in a plaster bandage, in which they remain for from ten to twelve days, after which time the bandage may be taken off and the position still further corrected if it is found necessary. No over-correction is necessary in this form of operation. After four or five weeks the patient can be allowed to walk about with some form of light apparatus. Trendelenburg claims for this operation that it not only returns the foot to its normal position, but restores its arch as well.

The Medical College at Nagasaki, Japan, now occupies the recently completed building. There is an average attendance of three hundred students, with dormitory accommodations. Museums and laboratories are well arranged for work. A number of microscopic anatomical preparations are in readiness for the Columbian Exposition at Chicago. At the rear of the college is a spacious hospital, with few occupants at present; for this is a good year (no cholera) for Japan.

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[22] Lancet, January 26, 1884

[23] British Medical Journal, April 18, 1885, p. 789.

[24] Archiv. klin Chir., xxxix, 4.

THE SANITARY ADMINISTRATION OF PASSENGER STEAMSHIPS, ESPECIALLY THOSE THAT ARE INFECTED.

BY S. T. ARMSTRONG, M.D., PH.D., OF NEW YORK,
Secretary of Section in Hygiene, etc., New York Academy of Medicine.

At the meeting of the American Medical Association in 1887, the writer presented a paper in which he reviewed the mortality among the passengers on vessels arriving at United States ports, the national statutes requiring that the masters of vessels arriving from a foreign port should specify in their transmitted lists of passengers the names, ages and causes of mortality of those that had died on the voyage. In order to stimulate the steamship companies to surround their passengers with everything needful for their sanitary welfare, another section of the statutes required the payment, by the vessel, of ten dollars for each death among immigrants over eight years of age. Reference was made to the fact that the law regulating the number of passengers proportionally to the tonnage of the vessel, that regulating the space allowed for each passenger, that regulating the quality of the food and the general legal supervision of the sanitary affairs of the vessel, were not properly enforced because the statutes provided that the collector of customs should appoint and direct one or more inspectors of customs to see that the laws were complied with. It did not seem to be any reflection on the qualifications of those officials to say that they were unfitted to discharge duties that necessitated an education in sanitary science. Statistical tables were given that showed that from six to forty-two per cent. of the deaths occurring among the passengers were from unknown causes; and it was also shown that though the mortality varied from four to six-tenths of one per cent. per thousand passengers carried, still as these passengers were on the vessels for a probable maximum average of twelve days, such a rate of mortality would in the course of a year approximate that of an average city. As the travellers were presumably in better health than those constituting the population of such a city, the mortality rate was rather high.

How far the ship's surgeon was responsible for the condition reported, was not altogther clear. The health-officer of the port of New York, in his annual reports for 1890 and 1891, said: "The carelessness or ignorance of medical officers of passenger steamships continues to give rise to endless anxiety." As the compensation of these officials varies from twenty to fifty dollars per month, it may be imagined that it is difficult to obtain medical men of high standing and with good professional qualifications, who are willing to retain the positions.

It was suggested by me at that time that the enforcement of the general legislation relating to the hygiene of ships should be transferred from the Customs Department to the Marine-Hospital Service. But the question of the improvement in the selection of the ship's surgeons is not so easily settled.

During the past fall while cholera-infected vessels were arriving at the port of New York, the extent of the professional competency of the ships' surgeons was shown by their management of their cholera patients during the voyage. Most of these officers transferred the sick at once to the ship's hospital, some making special arrangements for nursing and local disinfection. But there seemed to be no fixed method of procedure for their guidance.

On looking up the subject, no regulations were found that would guide the surgeon in the event of an outbreak of a contagious or infectious disease among the passengers or crew. The regulations of the Navy regarding this subject are of a general character. The National Board of Health issued rules and regulations for securing the best sanitary condition of a vessel, including that of their cargoes, passengers, and crews. These rules comprised the exclusion, as far as possible, of all persons or things known to be infected, the maintenance of the cleanliness of the ship both preliminary to loading and during the voyage, and the destruction or removal of all causes of disease by ventilation, fumigation or other disinfection. The only specific rule in the series that applied to the sanitation of the ship during the voyage was that providing for the burning of the bedding, wearing apparel, etc., of passengers affected with cholera, yellow fever, plague, small-pox, or typhus fever.

The Marine-Hospital Service issued a hand-book for the ship's medicine-chest for American vessels, but it does not specify any plan of campaign in the event of the appearance of an infectious or contagious disease on board ship.

The Revised Statutes provide that the master of a vessel bringing passengers to our ports must maintain cleanliness, and clean the decks with chloride of lime or other good disinfectant.

Reference to several of the more recent works on hygiene has been equally fruitless in showing the existence of any code for the guidance of the ship's surgeon in cases of special emergency.

The National Board of Health prepared a circular for steamboats on the Mississippi River giving directions to the masters of those vessels for their guidance during the existence of an epidemic. The bilge was to be pumped out daily until the discharge was free from odor and discoloration; the hold was to be well ventilated; decaying wood was to be scraped and painted; lime wash and copperas were to be used freely in the hold and bilge, about the boiler-deck, the water-closets and the urinals; soap and hot water was to be freely employed; when the weather permitted the cabins and state-rooms were to be sunned and aired for six hours daily. Hospital quarters were to be established near the stern of the boat and attendants were to be confined therein. If a passenger was taken ill in a cabin he was to be at once transferred to the hospital, his cabin disinfected by sulphur fumigation, and the cabins on either side were to be vacated. These rules are excellent, and but little amendment would be necessary to make them applicable to ocean vessels.

The first essential for the preservation of the health of the passengers on an ocean steamship would be to avoid taking passengers from an infected district. A clause could be inserted in all contracts for passage providing that, in the event of the appearance of an epidemic disease in the locality where the intending passenger resided, the contract would be null and void if the steamship company so desired. That such a clause is necessary is apparent when it is recalled that several steamship companies claimed that their contracts with immigrants necessitated their furnishing transportation after the President's recent proclamation of a twenty-day detention of all immigrants.

The ship's surgeon should inspect each of the immigrants before they are allowed to go on board the vessel. Necessarily any one suffering from a contagious or infectious disease would be excluded, and any un-vaccinnated person would be vaccinnated. During the voyage the surgeon should inspect the emigrants each morning and evening. He should be required to inspect the closets, urinals, bath-rooms, and the steerage daily, seeing that all of these places are ventilated whenever possible, and disinfected when offensive.

On the appearance of any contagious or infectious disease the person affected should be isolated in the hospital with the necessary attendants. The bedding should be burned, and the clothing disinfected by immersion in boiling water and suitable disinfectants for half an hour.

If there is any reason, as in the case of cholera, and of typhoid or typhus fevers, to suspect the food or water-supply, no uncooked food should be issued and all drinking-water should be boiled. If the ship's condensers have sufficient capacity the water-tanks should be separately emptied, then steamed under pressure by a temporary pipe-connection with the boilers, and then filled with the condensed water. The application of this latter procedure would have prevented most, if not all, of the cholera cases that developed at the New York quarantine among the passengers and crew of the steamships from Hamburg.

If the disease appearing among the passengers is contagious, as small-pox, typhus fever, or yellow fever, the occupants of the steerage or compartment in which the disease appears should be made to go on deck at the first opportunity; the compartment should be closed; the vessel stopped so as to turn her full head of steam into the compartment, though in the case of a small compartment stopping the ship may be unnecessary, and steam turned in for two hours at least, Without opening the compartment except to permit the entrance of a machinist if necessary to make the requisite pipe-connection, the steam heat should be turned on so as to dry the compartment. Dr. A. N. Bell showed more than twoscore years ago that this procedure was quite feasible in a naval vessel, and with the modern appliances in a passenger steamship the entire plan here outlined could be completed in a day.

With this disinfection of the water and food supply, and of the part of the vessel in which the disease first appeared, the only remaining nidus for disease would be in the passengers themselves. By daily muster of the passengers their condition could be carefully supervised, and isolation could be practised in the case of any suspected person. The liberal use of lye and solutions of quicklime, which the experiments of Kitasato and Cornet have shown to be as efficacious germicides as bichloride of mercury, would supplement the steam disinfection.

The regular inspection of passenger steamships by competent medical officers of the United States would ensure the enforcement of the existing statutes to which reference has been made; and the attention of the steamship companies being thus directed to the necessity of sustaining a certain hygienic standard, would probably result in the selection of more experienced physicians for appointment as ship's surgeons. The ship's passengers and crew are a community of which the surgeon is the health officer; he may isolate and disinfect, supervise absolutely the food and water supply, and in a limited area exercise an authority far greater than has sufficed to enable health-officers ashore to stamp out contagious or infectious diseases that threatened the welfare of the community for which they were responsible.

Clinical Department.

TWO CASES OF SUNSTROKE.

BY E. CHANNING STOWELL, M.D.

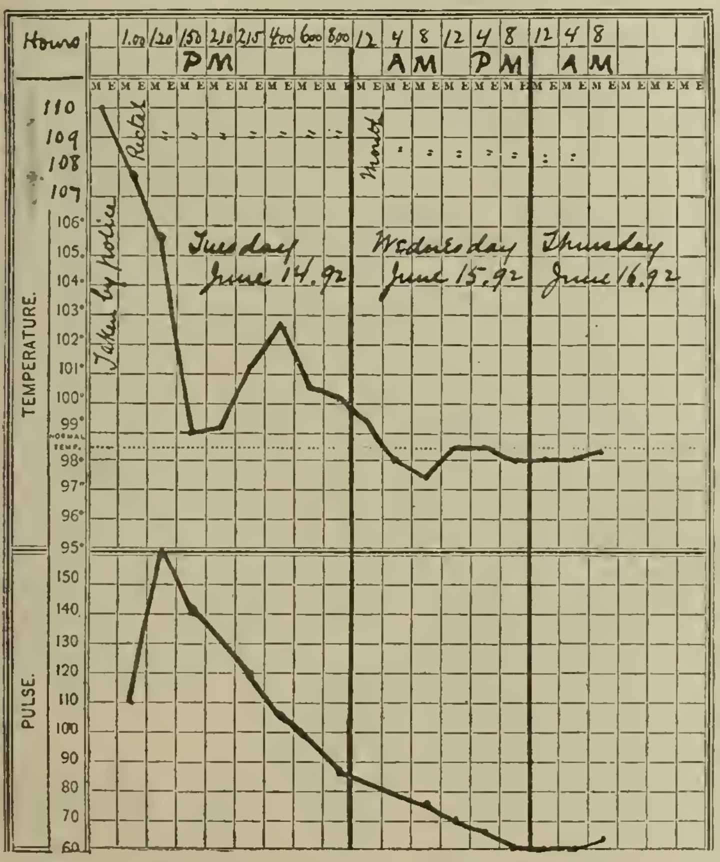
I AM allowed to report two cases of sunstroke which were brought to the accident-room of the Massachusetts General Hospital and entered the service of Dr. Edward N. Whittier. Neither of the men were drinkers. Both were young and vigorous. One received some alcohol on the way to the hospital. Its effect others must determine. Alcohol in large quantities in sunstroke must always be hazardous.

The cases were of interest for the high temperatures; the almost marvellous effect of ice; the non-administration of alcohol; the use for heart stimulation of atropine and strychnine alone; the nervous manifestations; the curves of the temperature and pulse; and the complete recovery.

CASE I. A. P. G., about thirty-two, single, born in Scotland. In Boston about four months. Had been working as assistant to the cook in a basement restaurant on Court Street. For two days had been feeling dizzy. On the morning of June 14th, dizziness again came over him, but he tried to fight it off. At noon he left the hot kitchen to walk on the street and get the benefit of the air. He remembered walking on Tremont Street, and that is all. The police saw him stagger and fall in front of the fruit-stand at the Tremont House. They picked him up and found his temperature at the station-house was 110° F. They put a bag of ice on his head and brought him in the patrol-wagon to the Massachusetts General Hospital.

Seen in accident-room at 1 P. M. Skin of hands and arms dry and hot. Pupils moderately contracted; reacted to light. Breath hot, but sweet. Lips ashy pale. Muscles loose, flaccid. Completely unconscious. Well developed and nourished. Muscular. Temperature by rectum 107.8°. Stripped on table. Rubbed with ice from head to toe by several attendants. Ice packed about neck, over carotid, laid in groins, and packed into axillæ. Pulse at entrance had been soft, moderately full, about 110. After rubbing about fifteen minutes with ice, pulse became small, thready, 160; respiration, which had been easy at entrance, became broken, with spasm and groaning at expiration, though inspiration was easy. Temperature 105.5° by rectum. Now the skin became covered with goose-flesh, and the fingers twitched slightly. Head in spasm turned to right; eyes thrown up and toward right; pupils now somewhat dilated. Pulse grew weaker and somewhat irregular. One-sixtieth of a grain of atropia and five minims of ergotole were given subcutaneously. Had a small, involuntary dejection. Rubbing with ice continued until about 1.50, when temperature by rectum was 99°. Muscular spasm had increased. Arms bent and rigidly held across chest. Legs drawn up and flexed on abdomen. Respiration moaning. Pulse at wrist almost imperceptible; at apex, with stethoscope 140; lack of booming quality to first sound. One-sixtieth of a grain of strychnine was given subcutaneously. Pupils dilated; eyes rolled up; lids shut tightly; disliked the light. Now dried off and laid on dry bed covered with blanket; ice-bag to neck. Skin cold everywhere except over head.

Now, although for a moment he seemed to become quieter, it did not last, and the worst spasm of general muscles and respiration occurred. In about twenty minutes he became quieter again, and temperature by rectum was 99.1°. Sent to Ward D at 2.15, where profuse vomiting and catharsis took place. Put to bed. Ice-bag to forehead and one to back of neck. Pulse still thready and weak, 120; temperature 101.2°. Vomited, and had involuntary dejections several times until 4. P. M., when found that temperature was 102.8°. Pulse 104, somewhat fuller, little stronger, regular in force and rhythm. Respiration easy; no moaning. Had regained consciousness to a certain degree, but was not perfectly clear in mind yet. Skin hot and dry. Put in bath at 70°; ice slowly added, and rubbed over head and body. Said he felt cold, but did not make active objection. For a few minutes at a time talked rationally. In bath twenty to thirty minutes. Temperature 100.6°; pulse 92, fair strength, regular, soft. Liquids. To bed again. At 11 P. M. found his mind clear. Talked sensibly. Apologized for rudeness; but thought it was morning, and the affair had happened yesterday. Quieted and reassured; and he turned over to sleep.

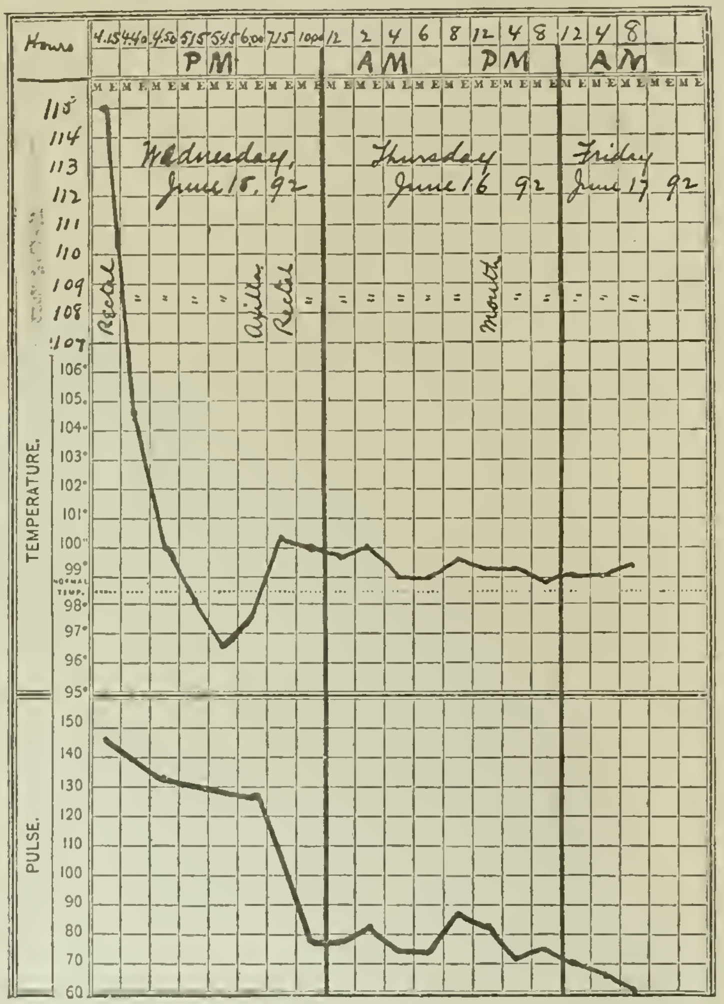


June 15th. Slept well. Perfectly rational. Pulse good character. Felt thirsty and hungry. Slight headache, and pains in bones of arms and in shoulders. Had had rheumatic pains before, but no acute joint affection. Liquid and farinaceous food; one egg at noon. In afternoon no headache. Head felt cool to hand. Ice bags omitted.

June 16th. Slept well. Appetite not very good. Five minims of tincture of nux vomica before each meal. Up and dressed. After cautioning against heat, both of sun and hot rooms, discharged well in the cool of the late afternoon.

On July 14th the patient wrote: "For the first few days I felt weak and giddy in the head but now I feel quite strong and well again."

Case II. T. L., about twenty-four, single, laborer, born in Ireland, lived in East Cambridge. Brought to accident-room, Massachusetts General Hospital, in Cambridge ambulance. Said by police-officer in charge to have been working in a sewer; was seen staggering on railroad track, and fell before being reached. Was given four tablespoonfuls of whiskey in divided doses by police-officer between time of being picked up and arrival at hospital. Seen in accident-room at 4.15 P. M., June 15th. Completely unconscious. Pupils much contracted, did not react to light. Skin hot, dry. Lips ashy pale. Pulse irregular in force and rhythm, very weak, first sound of heart lacking booming quality. Smell of whiskey on breath. Respiration labored, irregular, superficial; moaning and spasm with expiration; inspiration free. Absence of knee-jerks. Plantar reflex markedly excited by touching sole of foot with ice. Exceptionally good muscular development. With stethoscope, apex beat 146. Temperature by rectum 115°, which was as high as our thermometer would register. Stripped on table. Began by rubbing ice on head. In short time rubbed the whole body surface except over the precordia. Three, and at times four, men worked the ice. Ice was packed under his neck and over the carotids, in the axillæ and laid in the groin. After working twenty-five minutes, at 4.40 P. M. the temperature in rectum had fallen to 104.6°. Pulse still irregular and much weaker. One-sixtieth of a grain of atropine was given subcutaneously. Respiration was somewhat deeper, and moaning ceased for a time. Goose-flesh began to develop, and the knee-jerk returned. When his temperature was taken in the rectum, he objected. He moved arms and legs. At 4.50, temperature in rectum was 100°; pulse 132, character not improved. One-sixtieth of a grain of strychnine was given subcutaneously. His pupils had dilated and now reacted to light, but he disliked to have eyes opened. Goose-flesh had increased. Bluish tinge to arms and face. Arms in spasm, folded across chest. Rubbing with ice stopped, except of the head. At 5.15, temperature was 98.3°; character of pulse unchanged. One-sixtieth of a grain of strychnine was given subcutaneously. Removed to a dry table. Moaning respiration for a few moments ceased, and breathed easily, then began again. Seemed dusky; circulation did not return rapidly enough in cheeks and hands after pressure. Respiration not deep or full. Oxygen, in a constant, gentle stream, was given until he left the accident-room; after about ten minutes, each inspiration became deeper and the expiration was freer. Legs partially drawn up towards abdomen. Head still rubbed occasionally with ice. Skin of cheeks and shoulders warm to hand; skin of legs and abdomen cool. Turned on side, and drew himself together as if cold. Opened eyes, but did not understand. Covered with blankets, but after a time moaning respiration with spasm at expiration returned to a lessened degree. At 5.45, temperature 96.6°; pulse more regular, fuller, soft, with more strength. Transferred to Ward D. Seemed colder; feet and legs felt cold; face blue. Oxygen, in a constant, gentle stream for about fifteen minutes. Heater to feet, and blankets. Ice-bag to head; ice-bag to back of neck. Pulse 128, constantly improving in character. Temperature in axilla at 6 P. M., 97.5°. Seemed quiet. Opened his eyes on his name being spoken, but did not fully understand. At 7.15, found warm again. Heaters taken away and blankets taken off. Delirious. Fought violently to get out of bed. Kept repeating, "I guess I'll go up now. Will you take me up in the tub?" and made motions looking upwards, as if seizing the rounds of the ladder leading out of the sewer trench. Temperature by rectum 100.2°. Head hot. Put into tub-bath at 70°, and held there, in spite of struggles, while his head was rubbed with ice and ice added to bath. In fifteen minutes began to get cold and goose-flesh appeared again. To bed again in the moist sheet. At 10 P. M., temperature was 100°; pulse 80, full, soft, good strength. At 11, answered to his name, and talked a little rationally, but soon turned over and went to sleep. Respiration gentle. Liquids. Cracked ice.



June 16th. Slept well all night. Talks rationally in every way this morning. Complains of some general headache. Tongue dry. Is thirsty. Vomited once or twice in night; mucus tinged with bile. Says he has had no movement of bowels for a week. Glycerine (two ounces) in suds enema, gave a good movement. Is very drowsy and drops asleep easily. Cold liquids.

June 17th. Will smile, but apparently is naturally of a dulled intellect. Took ice-bags from head and put them under pillow last night. Teases to go home at night, and promises to keep in the house and keep his head cool. Headache only slight in the frontal region. Cautioned against exposure to heat. Discharged well.

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Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

CRANIO-CEREBRAL TOPOGRAPHY.

PROFESSOR CUNNINGHAM has completed his great work on the surface anatomy of the cerebral hemispheres.[1] The several chapters have, we believe, all appeared as papers in the *Journal of Anatomy and Physiology* and some of them have been noticed in these Reports. There is, however, an additional chapter on cranio-cerebral topography by Mr. Victor Horsley to which we would call attention. It should be consulted in the original, for it is too comprehensive to admit of a brief summary. We shall touch only on a few of the more important points. This chapter, we may say, extends over some fifty quarto pages.

First for the fissure of Sylvius, beginning with the fossa. We believe that we have already commented on the vagueness of the term "pterion," which many use and which no one defines. It is gratifying to find that Mr. Horsley discusses this point thoroughly. He shall speak for himself: "In the adult, the commencement of the fissure of Sylvius at the anterior extremity of the Sylvian fossa is, by almost every author, localized on the external surface of the skull, beneath the pterion. Now, as is well known, the form of the pterion varies according to the relative share taken in its formation by the component bones, but for the European races it may be assumed to be always in the shape of an H.[2] Under these circumstances it becomes a matter of much importance whether the posterior end or the centre or the anterior end of the parieto-sphenoidal suture, represented by the horizontal bar of the H, is to be taken as the pterion. Whether, in short, the ptero-temporal or the ptero-frontal junction indicates the origin of the fissure of Sylvius. Accepting the account given in Chapter II of the configuration of the fossa, the origin of the posterior limit of the fissure will far more often be found in the adult beneath the ptero-temporal extremity of the ptero-parietal suture, and this point should therefore, for the purpose of localizing the commencement of the fissure of Sylvius be regarded as the pterion *par excellence.* The trunk portion of the fissure, running, as it does, just along and posterior to the edge of the lesser wing of the spenoid, where that divides the anterior and middle fossæ of the base of the skull, is situated on a line drawn about transversely, that is, at right angles to the plane in which the pterion lies. It reaches, of course, to the anterior perforated spot which lies just external to the anterior clinoid process. The general direction and relations of the branches of the fissure are as follows:

"The anterior limbs run forwards beneath the line of the pterion to just beyond the coronal suture. The posterior branch or limb, in the adult, courses backwards along the squamous suture, leaving it just beyond the highest point of that line, and running towards the lambda."

It will be noticed that Horsley speaks of anterior *limbs.* These are usually two, an ascending and a horizontal, between which is Broca's cape, or promontory. The horizontal, which is the more anterior, extends along the top of the great wing of the sphenoid. All these fissures are higher in the child.

The main, or posterior division of the fissure of Sylvius may end in one of two ways. The more common is for it to turn upwards at an angle of about 100° from the general direction of the fissure and, often bifurcating, to end just in front of the centre of the parietal eminence. Less frequently the line goes about straight to a point rather further back than the other termination and of course below the parietal eminence.

The fissure of Rolando is discussed at great length. Mr. Horsley leans to the use of relative rather than absolute measurements for determining its upper end.

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[1] Royal Irish Academy, Cunningham Memoirs, No. vii, 1892.

[2] The H is by no means always evident. — T. D.

He would discard entirely systems of verticals erected on base lines as liable to gross error. He takes 69° as the average angle with the median line.

The parieto-occipital fissure in adult life is near the lambda, sometimes coinciding with it, usually being about five millimetres in front of it, very rarely behind it.

THE MASTOID REGION OF THE SKULL.[3]

In this connection we must refer to a very valuable paper by Professor Ambrose Birmingham which should have been noticed sooner. Written as a criticism of a certain operation for trephining in mastoid and tympanic disease, it incidently brings out two important anatomical points, namely, the level of the roof of the tympanum and mastoid antrum and the position of the lateral sinus in relation to the surface of the skull. Dr. Birmingham found that the level of the roof of the antrum varied in two ways: it was found at different heights above the meatus and moreover the plate of bone forming it might slant in one of several ways. In 57 per cent. of the specimens examined it was found about horizontal; in 32 per cent. it sloped upward and backward and in 11 per cent. it was arched or irregular. The height of this plate vertically over the middle of the meatus varied considerably, ranging from one-sixteenth of an inch to six-sixteenths. The average was a little less than one-fourth of a inch. It is to be noted that the height referred to is that of the upper portion of the petrous at a little distance from the squamous.

The relations of the lateral sinus to the surface are extremely uncertain, owing both to varieties in the curves of the sinus and to irregularities in the bones. It begins opposite the external occipital protuberance in half the cases. It is lower (but never more than half an inch) in 33 per cent. and higher in 17. It never runs horizontally as it is usually described as doing, but makes an arch on the side of the head which may rise as much as one inch. This ends in front where the sinus turns to run downwards, a point from one-sixth to one-fourth of an inch below the level of the floor of the meatus and some distance behind it. "As regards the bend of the sinus where it turns downward at the asterion,[4] it may vary within wide limits. It may be merely a gentle curve, so gentle that it is hard to say where the dip downward really commences; on the other hand it may be very sharp, presenting a distinct apex or knuckle; or it may be anything between these two conditions." The height of the bend varies also. The sharper the bend, the greater the height as a rule. The average height above the base line (running from the lower border of the orbit to the centre of the meatus) is over five-eighths of an inch. As it runs down "it lies just in front of the posterior margin of the mastoid process and a line prolonging that margin upwards and backwards; finally it turns towards the base of the skull just below the level of the meatus."

THE CEREBELLUM.[5]

We are indebted to a review by William Alden Turner for the following account of two Italian works on this organ. Luciani practised many vivisections, removing the central lobe, or either half, or the whole organ, or splitting it in the middle. "The experiments show that the cerebellum is not an organ intercalated among the great paths of the cerebro-spinal system, and as such transmitting voluntary impulses from the cerebrum to the spinal cord, but that it is an appendix, by the side of the cerebro-spinal paths, being essentially an auxilliary or reinforcing organ for the central nervous system, which is the more developed the higher one goes up the vertebrate scale. . . . The results of the researches show that the cerebellum is an organ of bilateral function, but with mainly a direct action, in this way differing from the cerebral hemispheres, which also exert a bilateral action, but mainly crossed. The experiments also indicate that cerebellar influence is not limited to the muscles which regulate the different forms of posture and locomotion, but extends to all the voluntary muscles. They further clearly show that the middle lobe is not of greater functional value than the lateral lobes, and that, as a rule, the different portions of the cerebellum have the same functions, and that the cerebellum is not a collection of centres functionally distinct or different, or that the various segments have an intimate or direct influence over special muscular groups but that the influence which the cerebellum normally exercises over the system is asthenic, tonic and static, neuro-muscular action."

This being so it is important to know the course of the fibres of the peduncles by which the cerebellum is connected with other parts of the central nervous system. Dr. Marchi examined the cords and brains of the animals (dogs and monkeys) on which Luciani had operated, tracing the paths of degeneration. The results are as follows:

"(1) The superior cerebellar peduncles do not completely decussate, for a small band of fibres passes to the optic thalamus on the same side, though the principal mass terminates in the red nucleus of the opposite side.

"(2) The middle cerebellar peduncles are not merely commissural strands from one hemisphere to the other. Many of the fibres enter the pyramidal bundles and end in the gray matter of the same side, while others pass to the gray matter of the opposite side.

"(3) The inferior cerebellar peduncles send a tract of fibres to the opposite olive. They are in all likelihood formed of afferent and efferent fibres.

"(4) The posterior longitudinal bundles and the fillet arise from a common origin in the middle lobe of the cerebellum. They course with the middle peduncles and come into relation with the nuclei of the cranial nerves, the nuclei pontis, the corpora quadrigemina, and probably also the corpus striatum. At the level of the olive the posterior longitudinal bundles fuse with the fillet, and thus form a connection with the antero-lateral regions and the anterior horns of the spinal cord.

"(5) The cranial nerves are closely related to the cerebellum through the medium of the fillet and the posterior longitudinal bundles.

"(6) The origin of the three peduncles is diffused over the cerebellum, but particularly the nucleus dentatus furnishes most of the fibres of the superior, the middle lobe of the middle peduncles."

It is discouraging to find that in Turner's opinion it is necessary to receive these conclusions with some reserve, as he considers Marchi's method of staining open to numerous fallacies.

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[3] Transactions of Royal Academy of Medicine in Ireland, vol. viii, 1890.

[4] The asterion is the point where the lambdoid, parietal-occipital, and occipito-mastoid sutures meet.

[5] Journal of Anatomy and Physiology, vol. xxvi, July, 1892.

THE MORPHOLOGICAL SIGNIFICANCE OF PROCESSUS RAMI MANDIBULARIS OF MAN.[6]

A process about the angle of the jaw, which is very rarely met with in man, has been termed by Abrecht the Lemurine process. Some of the advanced school of criminal anthropologists look on it as a reversionary process. Dr. Mingazzini in this paper studies this process pretty nearly throughout the mammalia. He determines it by drawing two lines along the posterior border of the ramus and the lower border of the jaw proper, which meet near the angle. In many animals there is a projection which may, or may not, involve the angle itself, either behind the former line or below the latter. The typical Lemurine process projects beyond both lines and beyond their point of intersection also. The form which crosses the lines (or presumably one of them) but does not involve the angle Mingazzini calls the pithecoid form. This, though often rudimentary is not only not uncommon, but is absolutely the rule in man. It follows that it is an error to speak of any projection near the angle of the jaw as a Lemurine feature.

THE FREQUENCY OF A MESENTERY FOR THE DESCENDING COLON.[7]

Dr. Johnson Symington has studied this question on transverse sections of hardened fœtuses with somewhat surprising results. That there is such a mesentery, and what is more a relatively long one, at an early stage of development we all know. What becomes of it? We may as well let Dr. Symington state the two theories: "Treitz, Luschka and Hyrtl have attributed its disappearance to the growth of the abdominal wall by which the two layers of the mesentery are separated at their base, and are used up by the formation of the parietal peritoneum, until finally the posterior surface of the colon loses its peritoneal covering. . . . Langer and Toldt ascribe the fixation of the descending colon to the agglutination of the posterior layer of its mesentery with the parietal peritoneum behind it." Whatever be the process, this result has occurred at the fifth and sixth month of prænatal life. Symington found this to be the case in eight out of ten specimens of this period. In some of these, however, there was some mesentery opposite the lower end of the kidney. Nine specimens were examined ranging from the seventh to the end of the ninth month and in none of them was a mesentery found. Now it is generally taught, we among others have done so, that it is not at all uncommon to find a mesentery on the left colon at birth and occasionally later. Mr. Allingham in his recent work on Colotomy found it in fifty out of sixty bodies. Now it is very probable that many, perhaps most or nearly all, of these mesenteries in the adult are subsequent formations due to the gut having, so to speak, dragged its moorings; but it is a little hard to believe that this new process should already have occurred at birth. Dr. Symington is quite right in claiming that observers should state by what method they get their results. He has found no mesentery for the descending colon even in adults where the method has been the examination of sections of hardened bodies. He says: "In many subjects the parietal peritoneum is very loosely attached to the abdominal wall in the lumbar region especially where it is reflected on to the colon. This looseness of connection is what one would expect from the variations in the quantity of material occupying the colon at different times. It therefore follows that the colon, upon slight traction, can easily be drawn forwards from the posterior abdominal wall and a fold of peritoneum formed behind it simulating a mesentery. It must further be noted that the reflection of the anterior abdominal wall and the consequent division of the parietal peritoneum facilitates the formation of the fold." All this is surely very reasonable. It does not shake our faith in the occasional occurrence of this mesentery, but it certainly suggests that mesenteries have been demonstrated which in point of fact never existed. Sir William Turner who was in the chair when this paper was read, insisted on the importance of a clear idea of the meaning of the term. "Mere laxity of the peritoneum would not constitute a mesentery unless the two layers were closely apposed to each other."

THE REGIONS OF THE ABDOMEN.[8]

It is notorious that the lines by which the abdomen is divided into the nine classical regions are very differently drawn. The writer of this report has for a long time taught that for this region the various terms are to be used only in a general manner, for there is no certainty that any two men have the same idea as to the line at which one region joins the next. Mr. William Anderson has brought the matter before the Anatomical Society of Great Britain and Ireland. He tabulates some fourteen different rules for drawing the lines. He declined to increase the confusion by adding a fifteenth. The matter was referred to a committee. The report will be interesting.

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Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.
SECTION IN PEDIATRICS.

STATED Meeting, May 12, 1892, DR. W. P. NORTHRUP, Chairman.

A CASE OF RANULA

was presented by DR. J. LEWIS SMITH.

The child was twenty months old and the ranula was noticed soon after birth. It did not interfere with nursing, but was beginning to produce a deformity, causing the mouth to be open, giving the characteristic fray-like expression. The child did not talk, although of ordinary intelligence. Development was somewhat retarded, and for three months there had been no increase in weight. The tumor was double, occupying both sides of the frenum, and apparently very vascular. Large vessels could be seen radiating over the surface. Two operations were available. One consisted in passing a silver-wire around and through the mass, so as to obliterate it by causing inflammation. The other was excision of a portion of the growth; but, owing to its extreme vascularity, serious hæmorrhage was not be feared.

DR. S. BARUCH thought the danger of hæmorrhage was not great, and favored the excision of two-thirds of the mass.

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[6] Archivio per Antropologia e l'Etnologia, vol. xxii, 1892.

[7] Journal of Anatomy and Physiology, vol. xxvi, July, 1892.

[8] Journal of Anatomy and Physiology, vol. xxvi, July, 1892.

A CASE OF MICROCEPHALUS

was presented by Dr. Henry Koplik.

The patient was four months of age, and was the sixth child. The head was very small; the anterior fontanelle was open, but the sutures were closed. There was distinct left facial paralysis; and upon touching the lower jaw, it moved with a spasmodic jerk. The legs were deformed from lack of development of the peronei muscles. The reflexes were increased, and there was also spastic contraction of the fingers. Nystagmus was observed, but was not constant, appearing only when the child looked toward the left. The probable condition present was microcephalus with congenital retarded development of the cerebrum, with involvement of the pyramidal tracts. The question of a Lannelongue operation was a very important one. The speaker believed that the nervous symptoms indicated lack of brain development, and that nothing would be gained by operating on the skull.

Dr. W. M. Leszynsky believed that the Lannelongue operation was a very serious one. He had recently seen two fatal cases. In the present case he did not believe that an operation upon the skull would aid the brain, which was evidently an undeveloped one.

The subject of discussion was

SUMMER DIARRHŒA IN CHILDREN UNDER TWO YEARS.

The first paper, entitled

RELATION OF THE STOOLS TO THE LESIONS AND TO PROGNOSIS; NERVOUS SYMPTOMS AND THEIR ORIGIN,

was read by Dr. Henry D. Chapin.

When the disease is located in the two extremities of the alimentary canal, the stomach and the lower segment of the large intestine, the discharge will quite surely locate for us the seat of trouble. In the intermediate tract, however, it is usually difficult to judge with certainty either the extent or location of the lesion by the character of the stools. A classification that can be made only upon post-mortem examination is of but little value clinically. The following is a fair clinical classification, and includes the vast majority of our cases:

(1) The diarrhœa of acute indigestion.
(2) The diarrhœa of inflammation.
(3) The diarrhœa of chronic indigestion or atrophy.

In the first the stools consist of their fæcal matter, soon becoming thin and watery, and containing particles of undigested matter, consisting chiefly of lumps of fat and undigested caseine. If these undigested masses continue to be passed, the stools soon contain more or less thin mucus. If starchy food has been given, it may be passed unchanged in appearance. In general, the passages in acute indigestion consist of undigested and fermenting food and the products of an irritated mucus membrane.

There is a point where irritation, if unchecked, becomes inflammation, and the second form of diarrhœa is developed. It is difficult here as in other places to always distinguish that point; when well developed, the temperature will remain elevated. The passages, if milk is the food, will contain masses of fat and lumps of curd. If milk is stopped and meat broths are given, the passages usually become darker colored and contain very offensive feculent matter. Mucus, in various conditions, soon becomes a prominent element. If colored with bile segment, it is an indication of jejunal or iliac catarrh, and is usually accompanied by undigested food. The closer the mixture of the mucus with the fæcal masses, the nearer is the lesion to the cæcum. When the lower colon is most involved, the mucus will be more distinct, passing in glairy masses or sometimes in pulpy shreddy particles, presenting the appearance of false membrane. Blood, if mixed in streaks, comes from the ileum or upper colon; if free and red, from the lower colon or rectum.

White, dryish, putty-like stools consist principally of fermenting fat; brownish stools, of albuminous matter from animal broths, frequently very offensive from advanced decomposition. The yellowish, watery stools are simply the ordinary fæcal discharges diluted. The causation of green stools has been a subject of much controversy. However caused, they are clinically noticed in connection with much irritation of the bowels with active fermentation of their contents.

The presence of absence of ulceration cannot be determined with certainty from the character of the passages; when there is rapid loss of vitality out of proportion to the number and character of the stools, ulceration is to be suspected.

The most persistent form of diarrhœa and most difficult to treat is that resulting from chronic indigestion and atrophy. Putty-like stools alternate with green mucus, or brownish offensive discharges. Assimulation becomes more and more defective, and the child dies from exhaustion. The underlying trouble is defective vitality, not inflammation, and antiseptics and astringents are useless.

The nervous symptoms accompanying summer diarrhœa are numerous and often serious. Impoverished blood passing sluggishly through the brain will account for some of them. It is probable, however, that as a rule these symptoms are due to irritation produced by toxæmia. Such toxæmia may be caused by the absorption of ptomaines resulting from fermentation in the bowel. The brain symptoms thus produced often disappear upon thoroughly clearing the bowel. Uræmic poisoning is also responsible in some cases for brain symptoms and death.

CONDITIONS INDICATING CHANGE OF AIR AND BATHS IN THE SUMMER DIARRHŒA OF CHILDREN,

was the subject of a paper by Dr. Simon Baruch.

The removal of the cause of disease being the chief aim of modern therapy, the insanitary conditions which actively contribute to the development and maintenance of summer diarrhœa become an important element.

A change of air is not demanded by reason of any special difference in the proportion of oxygen or other chemical constituent, but rather to avoid two sources of error: (1) A high temperature and marked humidity, one or both; (2) the presence of impurities.

Whenever treatment seems unavailing and prostration and intermitting fever are present, the question of a change of air becomes important. Of what avail are stimulants, tonics and food when the little sufferer is forced to toss under the constant oppression of a stifling atmosphere, especially if there be also an excess of moisture? Rich and poor alike are crushed under this terrible combination. Removal by a rapid and comfortable journey to a high altitude or to the sea-shore, free from these prejudicial conditions, becomes imperative in many cases. The change in the entire aspect of the case is too well understood to need comment.

Among the well-to-do classes atmospheric impurities are rarely operative in summer, though imperfect ventilation often breeds them in winter. In the tenement districts of large cities, however, this is an active factor. In these noisome tenements in which the children of the poor and many even of the better class of working people are huddled together, the elements which contribute to the development and maintenance of summer diarrhœa find an excellent place for their culture and propagation. The elements demanded in the prevention of this disorder are clean food taken into a clean stomach, and its detritus removed through a clean intestinal tract. It is to obtain these conditions, not more oxygen, that a change of air is demanded. The work carried on by the St. John's Guild is deserving of the utmost commendation. To the poor this change from the filth-laden atmosphere of the city to the pure breezes of the harbor comes as a refreshing and vivifying blessing that cannot be overestimated.

One point in this connection must be noticed. While of the utmost importance in the tenement districts, it is not always so important where the conditions are more favorable for home treatment. The change from a comfortable home to a country hotel, often overcrowded, is not to be advised without careful reflection. The benefits accruing to the little patient do not always warrant the expense, anxiety and disturbance of the family resulting from a sudden removal of a child without due preparation when the symptoms become alarming. The advantages and disadvantages should be carefully considered. We should see that the milk is sterilized, that the colon has been irrigated, and that all measures have been tried before advising a change.

The lessons derived from a long experience at a summer resort are two:

(1) While all cases of summer diarrhœa of infants living in crowded homes demand change of air, treatment is, at least, equally important.

(2) Among the better situated, change of air need not be insisted upon until all approved methods of treatment have been fairly tried.

Bathing for cleanliness is always demanded in summer diarrhœa, both for the purpose of cleanliness and by maintaining the functions of the skin to relieve intestinal congestion. For therapeutic purposes baths are especially indicated in acute cholera infantum, for they offer more positive relief and contribute more to cure than all other measures. In this condition we find hyperpyrexia, though the extremeties and face may feel cold and clammy.

Whenever the temperature exceeds 102° F. a cooling procedure is indicated and it is important that the proper method of bathing be observed. The child should be placed at full length in a tub of water at 90°, after the face and head have been bathed with ice-water. Gentle friction should be constantly applied while some one is removing with a pitcher the tepid water and replacing it with ice water. The temperature of the water is thus gradually lowered to 80°. If cerebral symptoms are present, water at 60° should be poured over the head and shoulders. The bath with friction should be continued fifteen minutes unless cyanosis of the face or decided shivering appears. The latter is prevented by active friction. After the bath the child is placed upon a linen sheet laid smoothly over a blanket. If the temperature before the bath was 103.5° or over, it should be wrapped and allowed to dry, if under that, it should be dried and the clothing replaced at once. It should be understood that the object of the bath is not primarily to reduce temperature, although this is an important incidental result. We have here a vaso-motor paralysis as evinced by the pallor of the skin when the rectal temperature is high. This condition is counteracted by the bath and friction, as described. The effect of a skilfully administered bath in such conditions of nerve-prostration must be seen to be appreciated.

In the subacute forms of summer diarrhœa the chief condition indicating baths is the general depreciation of the system arising from the great drain upon the blood and nerve tone. We here have the symptoms of chronic adynamia. To stimulate the appetite and improve the general nerve tone, should be our endeavor. The most approved tonics often fail. In these cases general ablutions morning and evening are preferable to baths. The child is placed on a soft woollen blanket; and the abdomen, chest and back are rapidly bathed, not sponged, as follows: from the hollow of the hand, water at 70° F. is poured upon the skin, which is then gently rubbed with the same hand. The body is rapidly dried, and friction with a rough towel is employed if the temperature is below 99.5°. If the temperature is above 102°, a general bath is indicated.

THE USE OF DRUGS IN DIARRHŒA: INDICATIONS FOR ALKALIES, ACIDS, ASTRINGENTS AND OPIATES.

Dr. J. Milton Mabbott read a paper upon this subject.

Much clinical and experimental effort has been expended in recent years upon that much-vaunted class of drugs, the antiseptics and antizymotics. It was early inferred that it would be difficult to find an antiseptic capable of internal administration in doses sufficient to kill microbes without proving poisonous to the patient. Baruch, five years ago, referred to the large quantity of antiseptic necessary to sterilize so extensive a surface; and Vaughan showed the feeble inhibitory power upon the tyrotoxicon-producing germ of all the antiseptic drugs. Holt has pointed out that, by reason of absorption, the soluble antiseptics cannot reach the lower bowel where the chief trouble lies. But insoluable drugs in a fluid menstrum have very weak antiseptic power. It is probable that the action of bismuth is due more to its astringent and soothing properties than to its antiseptic power. It seems impossible at present to administer antizymotic drugs by the mouth in such a way as to influence materially the small and large intestine. We are obliged to admit that they been tried and found wanting.

Nevertheless the bacterial studies of the disease, especially those of Booker, have taught us to secure asepsis where we cannot apply antisepsis. They have also made clear the *rationale* of certain drugs, especially carthartics.

Stimulants, though locally undesirable, are at times necessary; sedatives may be required to relieve pain.

Until recently there seems to have been general consent to the administration of alkalies. But now that we endeavor to promote asepsis and control fermentation by evacuant, dietary and hygienic measures, they are certainly less important than formerly. They are usually given with or soon after feeding. When using pepsin, alkalies should be given midway between feedings.

The indications for acids are doubtful. Lactic acid, as proposed by Hayem, is advocated in (1) acute infectious diarrhœa where the stools are numerous, watery and often foul but yellow in color; and (2) in green bacillary diarrhœa, for which it is recommended as a specific. Numerous observers have found the reaction of the alimentary canal in healthy infants acid throughout; and Pfeiffer has shown that green stools are associated with alkalinity. Hence, the use of acids would seem to have a rational basis. The dilute mineral acids are commended by many, the dose being one to five drops, administered twenty minutes after feeding. The vegetable astringents have during the last few years been almost discarded. The same is true also of mineral astringents, with a single exception. That exception is bismuth, the subnitrate being the preparation universally esteemed. It is prescribed in much larger doses than formerly, twenty grains every two hours sometimes being given to an infant.

Opiates are less used than formerly. They undoubtedly check peristalsis. As peristalsis is increased in diarrhœa, this action is desirable after the bowels have been emptied of their objectionable contents, but highly dangerous before. The other indications for opium are relief of restlessness, pain and tenesmus, and the control of frequent watery passages. Ashby and Wright recommend it in the latter stages, if the passages continue small and numerous. Holt and Crandall always prescribed the opiate separately, so that it may be conveniently increased, diminished or withheld at will; for increasing fever or taxic symptoms call for its discontinuance. It should not be given when the passages are infrequent and of bad odor. A decrease in the number of stools while they become more offensive, contraindicates its use and demands evacuants. Relief of pain is one of the highest duties of the physician; and unless definitely contraindicated, sufficient opium should be given to accomplish this.

FEEDING, STERILIZED FOOD, GENERAL FEEDING,

was the subject of a paper by Dr. Henry Koplik.

A number of cases were reported in detail, which tended to show that, while some infants taking an artificial food show no traces of sugar in the urine, there is a considerable proportion which do show this abnormal condition. On the other hand, infants taking rationally prepared milk or mother's milk showed no trace of sugar.

Although numerous theoretical reasons may be given against the use of sterilized milk, clinical experience proves that it is better tolerated by the stomach than any other artificial food. It has a peculiar taste, but infants soon develop a liking for it and prefer it to other milk.

At the Good Samaritan Dispensary during the summer of 1891, milk was sterilized on a large scale. Six bottles containing four to five ounces of milk were given to each patient, the sum of eight cents being charged. In this way over 40,000 bottles were distributed to 575 different infants. The results were favorable in the extreme. The chief drawback was inability to control the milk before receiving it at the dispensary. Changes that have already taken place cannot be remedied by sterilizing. Milk that appears to be good when cold will often prove unfit for use when heated. Milk that is several days old may show no signs of change, but when boiled will promptly curdle, owing to the formation of lactic and other acids. When sterilized, it will appear flocculent, and should be rejected as it is positively dangerous. It is almost impossible in New York to obtain milk less than twenty-four hours old, and much of what is used is several days old, and has been preserved by means of ice and chemicals.

To obviate certain changes which take place in milk sterilized at high temperature, an attempt has been made to destroy the activity of the germs by subjecting it to a lower temperature.

In Boston, Dr. Rotch has accomplished this at a temperature of 167° F., but the milk used is unusually fresh and pure. Another method recently proposed is that of bringing the milk quickly to the boiling-point, and then placing it at once in a cool place. While milk thus treated keeps much longer than ordinary milk, it should be distinctly understood that it is not sterilized.

Resterilization, by repeatedly subjecting milk to a high temperature, is not to be commended. Milk is a very complex fluid, and every disturbance of its elements renders it less desirable as a food. Our aim should be to produce as little change as possible. If, therefore, it can be rendered safe by heating to a less degree, it should be done. This process of heating milk to a temperature of 167° F., and cooling it quickly, is now known as Pasteurization. It does not actually sterilize the milk, but renders inactive certain ptomaine-producing germs. Such milk will keep several days; and as at this temperature it is but little if any changed in its constitutents, it presents an improvement over the older form of sterilized milk.

Dr. J. Lewis Smith asked Dr. Koplik how long he would subject the milk to heat in the process of sterilizing. Before sterilized milk was known, he had been in the habit of directing the milk for the child to be subjected to the heat of boiling water for two hours, but now advises but twenty minutes.

Dr. Koplik replied that after twenty or thirty minutes, when the Arnold Sterilizer is used, the hood could be removed.

The Chairman referred to the formula proposed by Dr. Blackader at the recent meeting of the American Pediatric Society, the Arnold apparatus being used, — a pint of water, a Bunsen burner, and fifteen minutes. The hood may then be removed and the cover left ajar. This is effectual for Pasteurization.

Dr. A. Jacobi objected to the statement that he has written extensively on infants foods "pro and con." He had never written anything in their favor, but had always opposed their use. Sterilized milk was an improvement upon the methods he had formerly adopted. It was a great error to suppose that sterilized milk was anything but cows' milk. It required just as much modification as though it were not sterilized. A good food was not one that was simply tolerated — one upon which a child did not die — but rather one upon which he would thrive. Many an invalid owed his ill health in later life to improper feeding in infancy.

Alkalinity in cows' milk was always suspicious — for it was evidence that it had been "doctored." The most dangerous alkali was bicarbonate of soda, for in milk thus treated the ptomaine-producing germs developed best.

While pepsin was sometimes useful, the speaker objected to its indiscriminate use. Without an acid it was inert. The best remedy referred to during the evening was irrigation of the colon. Not only did it remove decomposing matter, but furnished fluid which was so much needed — for some is absorbed.

Dr. S. Baruch said he had not prescribed pepsin without acid for ten years, and had not administered it to children for five years.

Dr. Jacobi said, still further, that sugar was required in artificial food; but he did not believe that milk-sugar was best. There was a close relationship between milk-sugar and lactic acid. The change from one to the other was very rapid. Some lactic acid was necessary for proper digestion, but an over quantity produced hyperacidity and indigestion.

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THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON GENERAL MEDICINE.

Stated Meeting, May 17, 1892, Dr. A. A. Smith, Chairman.

Dr. H. M. Biggs read a paper entitled

SOME REMARKS ON THE ETIOLOGY OF CEREBRAL AND CEREBRO-SPINAL MENINGITIS.

He said that recently a rather unusual series of cases of meningitis had came under his observation. He had made autopsies in 21 cases, and, with two or three exceptions, these had all occurred within the month ending May 6, 1892. It was worthy of remark that almost all of them had come from the alcoholic cells of Bellevue Hospital. In four of the cases the inflammatory process was confined to the dura mater. The other seventeen cases were instances of lepto-meningitis, the pia mater being involved. In four of the latter the pathological lesions were confined to the cerebral pia mater, and of these, two were of syphilitic, and two were of tubercular origin. The remaining thirteen were attended with serous or sero-purulent effusion. In only two was the meningitis due to otitis media. In a large number of the cases bacteriological investigations were made, and in different instances pure cultures of the pneumo-bacillus of Frænkel, the pneumo-coccus of Friedlander, the bacillus of influenza, the stretococcus pyogenes, and other microbes were obtained. Moreover, in one case was found the bacillus of anthrax, and in another the bacillus coli communis. Of the three cases of cerebro-spinal meningitis, in one the streptococcus pyogenes was found, and one was a case of mixed infection. In the third no infectious microbes were discovered.

Dr. Biggs then proceeded to give a number of the cases in detail. The first was one of acute lepto-meningitis of syphilitic origin. Thirty-six hours after admission to the hospital the patient began to grew rapidly worse, and twelve hours later he died. Bacterial investigation revealed the presence in the meninges of Friedlander's pneumo-coccus, although there was no disease of the lungs.

In the second case the patient was suffering from convulsions at the time of admission, and these continued to increase in frequency. As there was a contusion over the right eye, the diagnosis was made of cerebral laceration and hæmorrhage from *contre coup*, and the man was transferred to the surgical wards. He was promptly trephined by Dr. Joseph D. Bryant, but nothing was found to account for the convulsions, and he died two hours after the operation. At the autopsy there was found a gummy meningitis affecting both the pia and dura mater, which had apparently begun in the latter. Notwithstanding the fact that severe convulsions had characterized the case, it was worthy of note that the meningeal inflammation did not extend over the cortical motor area.

In the third case the patient suffered from severe erysipelas of the left arm. After a day or two he complained of marked pain in the head, and eighteen hours after the appearance of cerebral symptoms he died. In this case a pure culture of the anthrax bacillus was obtained. In cases four to seven there was acute lobar pneumonia, with secondary lepto-meningitis. In three of them the pneumo-bacillus of Frænkel was found, and in the fourth no bacteriological investigation was made. In the eighth case acute lepto-meningitis supervened about the end of the third week in typhoid fever. At the autopsy there was found sero-purulent exudation both at the base and on the convexity of the brain, and the bacillus coli communis was found in the meninges.

In the eighth case, which occurred in a man of marked alcoholic habits, there was a convulsion which was followed by paralysis of the left side of the body. At the autopsy a very marked fibro-purulent exudation was found, and the lesions in general were those of a typical case of primary cerebro-spinal meningitis. In this instance there was a mixed bacterial infection. In the tenth case rupture of the spleen occurred. The patient at one time had a temperature of 105⅜°, accompanied by marked delirium; but under the influence of stimulants and antipyrine the fever was reduced and his general condition became greatly improved. Suddenly an attack of vomiting occurred, unconsciousness supervened, and death soon followed. The autopsy revealed a rupture of the spleen, which was large and soft, and acute inflammation of the pleura, pericardium, and pia mater. The streptococcus pyogenes was found to be the infectious microbe present, and Dr. Biggs believed the case to have been one of streptococcus septicæmia. In all his extensive experience this was the first instance he had met with in which rupture was due to pathological changes in the organ itself, and not to traumatism.

The eleventh case was that of a man admitted to the alcoholic wards of Bellevue in an unconscious condition. After admission he partially regained consciousness, but later became comatose. There was a fetid discharge from the ear, and as it was believed that he was suffering from abscess of the brain, he was transferred to the surgical wards. Trephining was performed by Dr. Bryaut, but no abscess was found. An aspirating needle was introduced into the lateral ventricle of the brain, and about one and one-half drachms of purulent fluid withdrawn. Death occurred seven hours after the operation. At the autopsy an abundant fibro-purulent exudation was found at the base of the brain, but the pia mater and cerebral convexity were not implicated.

In the twelfth case there was otitis media with cerebral abscess and basilar meningitis. In cases 13 and 14 there was cerebro-spinal meningitis, and in cases 15 and 16, tubercular meningitis. Case 17 was syphilitic in character.

Dr. Biggs finally gave the conclusions at which he had arrived from a study of the foregoing and similar cases. These were largely in reference to the microbic origin of meningitis, and he gave a list of the various bacteria which had previously been found in connection with the disease. To those he said he could now add two others, the anthrax bacillus and the bacillus coli communis. He expressed the opinion that the pneumo-bacillus of Frænkel was the most common cause of meningitis.

Dr. J. D. Bryant said that the most important part of the communication of Dr. Biggs was his announcement of his discovery of the anthrax bacillus and the bacillus coli communis in connection with meningitis, and that his cases were undoubtedly the first instances of the kind in medical literature. The fact that the bacillus coli communis was found only in the meninges, and not in other parts of the system also, was to him one of very great significance. This bacillus had formerly been regarded as of a harmless nature, but this was no longer held to be the case. Where localized, as in the meninges, it was a very virulent microbe. He also called attention to the gonococcus as a cause of meningitis.

Dr. Quimby having inquired whether there was any chemical proof of any real difference between the products of the various forms of infectious microbes, Dr. Biggs replied that there was ample proof of the chemical differences in the various toxines referred to. The pathological conditions produced, he said, varied according to the character of the toxine present, the amount of the toxine, and the locality attacked.

Dr. E. D. Fisher said it seemed to him that in such an unusual series of cases of meningitis as that reported by Dr Biggs there must have been some special cause, whether atmospheric or of some other character, determining inflammation towards the meninges.

Dr. Biggs said he thought it possible that atmospheric conditions had some influence in locating these infections. It was a fact that during the spring months, as a rule, cerebro-spinal meningitis was always more frequent than at other periods of the year, and he did not see any way of accounting for this except on the supposition of atmospheric influence, unless it should be explained on the ground that all the infectious diseases were most prevalent at this season. Perhaps, also, the vital resistance was less at this period of the year. He thought, however, that it was an important fact that a large number of the cases he had reported came from the alcoholic wards of the hospital; and he believed that not infrequently cases of meningitis were treated for delirium tremens.

Dr. Bryant expressed the opinion that the occurrence of so many cases of meningitis in such a short period could probably be explained in a more scientific manner than on the hypothesis of atmospheric influence by the nature and behavior of ptomaines under certain conditions.

Dr. Joseph D. Bryant spoke on

THE FEASIBILITY OF SURGICAL INTERFERENCE IN CASES OF ACUTE MENINGITIS.

He referred particularly to the second case reported in the paper in which trephining had been resorted to. Through the opening made the brain protruded, he said, to a greater extent than he had ever observed, but no pulsation whatever could be felt in it. A very interesting point was that he could distinctly feel between his fingers what seemed to be an abscess, and yet there proved to be absolutely nothing there except softened brain substance. The moment the first drachm of fluid was withdrawn, the bulging of the brain ceased, and pulsation became marked. The radial pulse also grew stronger. He hesitated whether to use a drainage-tube or not, but finally decided to do so, and it did not appear to cause any injury. The question whether relief can be afforded in acute meningitis by the withdrawal of serum from the arachnoid cavity, he said, was one to which his attention had never been called till it was suggested to him by the Secretary, Dr. Quimby. In acute meningitis the symptoms which simulated compression might be due to other causes than compression, and it would always be difficult to decide just where to operate. If the operation was performed, but a small quantity of fluid would probably escape, as the bulging of the brain in the opening would soon prevent its further flow; and even if a sufficient amount of fluid could be removed, and benefit result, he believed that such benefit would be more than counterbalanced by the danger attendant on the giving of an anæsthetic and on the operation itself under such circumstances.

Dr. Quimby said that Dr. Bryant seemed to think that pressure was not perhaps a prominent source of difficulty. He believed that in many cases it was, and in illustration he mentioned that in one instance where he temporarily reduced the pressure by firmly compressing the carotid arteries for four or five minutes, the patient's condition at once improved. He did not think the escape of fluid would be cut off so quickly as Dr. Bryant intimated, but believed that there would be more or less leakage for a considerable time.

Dr. Fisher said that while relief might be afforded for a time by the escape of cerebro-spinal fluid, this fluid would immediately re-form. Therefore, he did not believe that an operation for the withdrawal of fluid would be of any practical service in acute meningitis. As regards the spinal cord, it was well known that a large amount of fluid might be removed, and yet no symptoms be caused; unless, therefore, it were possible to keep up drainage for an indefinite time, he did not think that such a procedure would be advisable.

Dr. Reginald H. Sayre referred to two cases which he had heard Mayo Robinson report at the meeting of the British Medical Association, in which he had performed tapping. In one of these, which presented all the symptoms of tubercular meningitis, there was an immediate improvement in the condition of the patient after the removal of a drachm or a drachm and a half of fluid from the lateral ventricle, and recovery afterwards followed. He did not recall how the other case terminated.

Dr. Biggs, in closing the discussion, said that the case of anthrax meningitis which he had reported was especially interesting both on account of the location of the infection and the great rapidity of its action, death ensuing within eighteen hours from the first appearance of the cerebral symptoms. As Dr. Byrant had remarked, recent investigations had thrown much light on the action of the bacillus coli communis. Four years ago Dr. Prudden and himself had been called upon to investigate the case of an Italian who died at quarantine with all the symptoms of Asiatic cholera, after an illness of sixteen hours. A bacterial examination showed the presence of the bacillus coli communis, but as up to that time this microbe had been regarded as entirely harmless by scientific authorities, no significance was attached to this fact. He now believed, however, that the case in question was undoubtedly one of sporadic cholera due to this bacillus.

Recent Literature.

Περὶ της παρ' Ιπποκρκ'ατει ἐπιδημικῆς Γρίππης (Influenza) *ὑπὸ Γ. Φωκα, Ιατρου. 'Εν 'Αθηναῖς.* 1892. *Σελ. ή* — 49, *εις 8ον.*

Such is the title of an Essay for which a prize was given, last year, by the Royal Medical Society at Athens, Greece.

While learned medical men of other nationalities have been trying, for a long while past and up to the present time, to find out the origin and cause of the malady, so recently pandemic, and have been able to trace it so far back only as the ninth century, an Athenian physician (having the advantage of them all in that the Greek is his vernacular), has clearly shown, with great acumen and most careful investigation, that "la grippe" certainly existed in and before the time of Hippocrates. This he does by numerous citations from the works of Hippocrates himself, and especially from the description of the great epidemic which prevailed at Perinthos, in Thrace, five hundred years before the Christian era.

The citations of Dr. Phokas embrace the etiology (dubious then as now), symptoms, progress, complications and the many varied characteristics of the disease, together with its prognosis and treatment, — all of which correspond remarkably to the results of the latest investigations. The treatment, as reasonable as any resorted to since, was often disappointing, and many a modern will agree with Hippocrates, when he says that in severer cases "*οὐδὲν ἄξιον λόγου ὠφέλει.*"

Moreover, these researches show that the disease so recently *upon the people*, and which as yet has hardly left us, nor ceased to puzzle the profession and others, is no new thing, but was as well known and as well cared for, thousands of years before our day, as at the present time, though its modern name did not appear until two or three centuries ago.

Thus in the ages diseases come, go, and return, ever varying, ever the same, like the zephyrs and the whirlwinds; and, if ever indicating their approach, seemingly, in their coming and going, as little influenced by human schemes and human powers as storms or other phenomena of nature.

The Essay of Dr. Phokas, besides receiving the prize above mentioned, has been accepted by the French Academy of Medicine, after a report of a Commission, for its Archives, and Dr. Phokas, by a formal vote of the Academy, has been requested to continue his researches on the subject in other works of ancient Greek writers.

Modern medical science may profit by these investigations of Dr. Phokas. His paper is worthy of an English translation, but any one who may read it in the original Greek, will find it very interesting and very instructive.

Λέτὶου λόγος δωδέκἀτος πρῶτον νῦν εκδοθεὶς. ὑπὸ Γεώργιοῦ Λ. Κωστομοιροῦ. ὑφηςγητοῦ κτλ.. κτλ. Σελ. ριβ' —131, *εις 8ον.* Paris, 1892.

After remaining fourteen hundred years in manuscript, and thus known to a very few only, the twelfth book of Aëtios now appears for the first time *in print*, under the learned and faithful care of its erudite and painstaking editor, Professor Kostomoires. The volume is worthy of all concerned in its publication; it is pleasing in general appearance; its type beautifully clear; and the paper good. The editor's notes are copious and satisfactory, and its execution throughout gives abundant proof of his rare qualifications for the task.

The subjects of the work are sciatica, arthritis, and kindred maladies, with many suggestions worthy of the attention of the most scientific of modern practisers of medicine. The scientific, however, are sometimes very peculiar. There are among us, we are told, those who assert, and would fain have the community believe, that nothing of permanent value obtained in medicine until within the last thirty or forty years! Not so Professor Kostomoires. He frankly acknowledges his frequent indebtedness to ancient writers for teachings that have proved practically useful to him. And it was, it seems, the great value of these works in actual practice that led him to go beyond those in print to such as exist in manuscript only. These also he finds very valuable, and feels called upon to make them known to the profession and scientific men. He has, therefore, undertaken the task of editing and publishing these hitherto unprinted works. It is an enterprise of great importance, of immense labor, and of large expenditures of money.

The work of Aëtios is the first of the series; and it is understood that the University of Greece has assumed the expense of the publication. The editor, Professor Kostomoires, has the endorsements of governments, universities, academies, and of many eminent medical men and men of science, vouching for his extraordinary qualifications for the task, and urging him to go on to its accomplishment. If they will assume a proportionate share in the necessary pecuniary outlay, the success of the enterprise will be assured. He looks with hope to this country also, that its colleges, schools, medical and other learned societies, and able men, may see the importance of the work he has undertaken, and give substantial aid to it.

Ιατρικὴ τοῦ 'Αριστοφάνους, ὑπὸ Ανδρεοῦ 'Αναγνωτάκη — *"Εν 'Αθηναῖς*, 1891, *Σελ.* 19, *8ον.*

The hundreds of physicians who attended the annual dinner of the Massachusetts Medical Society year before last, have liveliest recollections of Mr. Clapp's brilliant and captivating speech, made up entirely of quotations from Shakespeare relative to medicine and medical men.

Dr. Anagnostakes has done a similar thing with Aristophanes, only that he has added a running commentary, and put the whole in a more permanent form in the publication before us. He has, furthermore, arranged his selections under professional headings, with references to the comedy and line quoted, so as to render a special index unnecessary.

In a word, Dr. Anagnostakes points out that with all their fun these comedies are imbued with solid sense and wise teachings, unsurpassedly practical, he says; and concludes

—'Ο *'Αριστοφάνης ἐνουθέτει γελῶν καὶ ἐδίδασκε παιζων.*

The three publications noticed above prove incontestably that the Greek language is not wholly *dead*, as some of our orators would have it; and show that the Greeks, especially the Athenians, are *alive* in reminding the outside world that their language, ancient and modern, is worthy of more attention than it has of late received — from those at least who, in their studies, would not omit what has been *beautifully* done in science as well as in literature and art.

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THE BOSTON

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THE INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, THIRTEENTH VOLUME.

It is hard to realize that so long a time has passed since the Journal noticed the birth of the "Index Catalogue," but its thirteenth volume serves to mark the advent of the thirteenth year since its inception. The additions made by this volume to the total number of titles is especially large in book titles (13,498) and journal articles (29,896), while the author titles are proportionately somewhat less.

The volume includes words from *Sialagogues* to *Sutugin.* The second word in the index part of the volume is *sialorrhœa,* which only an extremely pedantic individual could prefer to salivation.

The titles referring to the *Siamese twins* nearly fill the first page. It is curious to see the amount of literature to which these united brothers gave rise, and the varied points from which they were regarded. The library must have fallen heir to what might be called the literary remains of the twins, as it possesses cuttings from newspapers from 1829 to 1874, referring to them and their exhibitions, with handbills and advertisements, and eighteen portraits, including a water-color drawing and three caricatures. There are articles concerning them in French, Spanish, German and Italian. Geoffroy-Saint-Hilaire reported upon them to the French Academy. Simpson lectured upon the "Siamese and other viable united twins." Eve, Pancoast and Startin speculated upon the surgical operation necessary to separate them. The psychological side of their dual being was the subject of repeated papers, and the accounts of the post-mortem examination shows that even in death this singular pair of mortals was still a subject of interest to their medical brethren. All these papers, with many others, go to make up the list as tabulated in the catalogue.

Surgery, with its numerous sub-heads, naturally occupies a large space in the catalogue. The first volume mentioned under Military Surgery is *Abeille (S), Le parfait chirurgien d'armée, le traité des playes d'arquebusade, etc., Paris,* 1696, which stands in curious contrast with a proposition which bears a date almost two hundred years later for *The Application of Electric Light to the Purposes of Military Surgery in Time of War.* This section on Military Surgery presents a sort of epitome of history for the last two hundred years or more. The reports of the surgical aspects of the various campaigns here emunerated, would serve to reconstruct the wars and inventions during that time.

It is needless to say that this volume adds to the value of its predecessors.

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THE NEW OPERATING THEATRE OF ROOSEVELT HOSPITAL.

An interesting event of the past week and a notable one in the history of Roosevelt Hospital was the formal opening, on November 3d, of the new William J. Syms Operating Theatre. This magnificent addition to the hospital, which is without doubt the most thoroughly equipped structure of its kind in the world, owes its existence to Dr. Charles McBurney, of the Surgical Staff, whose representations to the late Mr. Syms secured the funds for its erection and maintenance. It is now about two years since the latter died, leaving in his will the sum of $350,000 for this purpose; of this $200,000 has been spent on the building, and the remaining $150,000 will be used as an endowment fund for its maintenance.

The theatre, on the corner of 59th Street and 9th Avenue, New York, is connected with the other hospital buildings, is built of pressed brick, and is 150 feet long and 100 feet deep. A portion of it is three stories in height, and the rest two stories, while in the centre of the building, covered by a high glass dome, is the operating-room, in which the hospital clinics will be held. Around the amphitheatre are five tiers of seats accommodating 185 students, and each seat commands a perfect view of the operating-table. The floor is covered with opaque glass, and the temperature can be guaged to any point desired.

On the first floor, surrounding the amphitheatre, are the office, two rooms for storing bandages and dressings, an examination-room, a microscopical-room for pathological research, three additional operating-rooms, — all superbly lighted, for private, special and septic cases — two etherizing-rooms with light carriages for conveying patients to the operating-rooms, a sterilizing-room, a large linen and splint closet, an instrument-room with a complete surgical armamentarium of the latest and most approved character, and a staff sitting-room. It has been deemed best not to have an elevator in the building, and the second floor is reached by a long inclined plane. The corridors and all these rooms have floors of mosaics and are wainscotted with marble. On this floor are four handsomely equipped recovery-rooms for patients after operations, a dining-room, pantry, bath-room, etc.; and on the third floor are sleeping-apartments for nurses. The building is lighted throughout by electricity.

PHYSIQUE OF FRENCH ARMY RECRUITS.

In a recent issue of *Mémories de la Société d' Anthropologie de Paris* (1892), are published the researches of M. le docteur Georges Carlier, *médecin-major de l'armée*, concerning the growth and development of recruits. These results are deduced from 10,497 examinations, made during 1886–90 at the military schools of Montreuil-sur-Mer and Saint-Hippolyte. The question of proportion in physical and mental culture had been much discussed about the time when this study was begun. From detailed data and comprehensive collation of authorities, the following conclusions are summarized:

(1) The beneficial effects of the establishment of these preparatory military schools are abundantly shown in the superior physical conditions presented by the pupils who have undergone training at the institution when compared with those of the same age who have not yet been inmates thereof. This appears in the weight, height and chest-measure.

(2) The health, vigor and spirits of the youth are as remarkable at Saint-Hippolyte as at Montreuil. The hygienic conditions, alimentation, exercises and *régime* of the two localities are the same; nevertheless, anthropometric examinations give better results as to weight and height for those of Montreuil; while the chest-measure shows in favor of those at Saint-Hippolyte. In these groups, the same ethnic elements do not predominate; the difference must be attributed rather to the influence of heredity than to geographic and climatic conditions. The fusion of ethnic elements in the districts from which the recruits come, does not appear to be completed, as shown by the heights of different ages. During the period of growth, the height, weight and chest-measure vary as during adult age.

(3) The good influence of the school was first seen in the added weight. Next came improvement in the chest-measure. The height increased irregularly, but the larger increment was a year later than in the other two directions — thus confirming the results obtained by Pagliani.

(4) These benefits must be considered as owing to advantageous hygienic and alimentary conditions and the large part given to muscular exercises. The greater chest-measure seems to be especially in proportion to the amount of gymnastic training. The other features are rather due to the *régime* of the school and the general surroundings.

(5) Though observers differ, the effect of seasons is undeniably shown, the increments being different according to the time of the year; the increase in height was during winter; the chest-measure increased in summer, due perhaps to more exercise in the warm months.

(6) These increments are far from being so regular as given in the tables of Quételet. As both Bowditch and Pagliani have shown, the period of growth is irregular not uniform, although generally progressive.

(7) The influence of febrile diseases on development has not been considerable.

(8) As a rule, large chests were seen with those of short stature.

The definite results herein shown merit consideration in relation to the improvement of the youth in other lands through appropriate exercises for body and mind.

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HIGH AMPUTATION FOR SENILE GANGRENE.

The first proposition seriously made to perform high amputation in cases of senile gangrene was presented by Jonathan Hutchinson in 1883 to the Medico-Chirurgical Society of London. He called attention to the fact that amputation in obstructive gangrene, due to anterio-sclerosis, has been largely discontinued because followed by sloughing of the stump, and he urged that this only takes place where the part removed is too near the seat of the disease.

Heidenhain subsequently discussed the subject,[1] basing his observations on the treatment by this method of cases of senile gangrene of the toes and feet which he had seen in Küster's clinic; and he states the following conclusions from an experience with thirty cases: "As long as the gangrene is confined to one or two toes, the line of demarcation should be awaited and the dead tissues allowed to separate of themselves. Removal of the gangrenous portion with forceps and scissors may lead to gangrene of the parts above, although the line of demarcation has been fully established. As soon, however, as the gangrene attacks the sole or the dorsum of the foot, an amputation of the thigh should be made as close above the condyles as possible. Amputation below the knee is almost always followed by gangrene of the flaps. In eleven cases of diabetic gangrene, six were saved by thigh amputations. . . . Out of fourteen cases of simple gangrene on which amputations were made, nine recovered. In two cases in which leg amputations were resorted to, one died of gangrene of the flaps and one of sepsis."

Heidenhain says: "Küster at first contented himself with the simpler form of interference, or low amputation. The constant occurrence of gangrene in the amputation wound, however, in these cases regularly compelled further high amputation."

Camus[2] reports a case of gangrene of the leg consecutive to typhoid fever, in which an amputation of the thigh was followed by recovery.

Dr. Charles A. Powers in the *American Journal of Medical Science* for November, 1892, takes up the subject of early high amputation in senile gangrene, and adduces one case in illustration, which unfortunately proved a fatal one. "It serves, however," he says, "to emphasize the one point that, in cases of senile gangrene involving the lower extremity, early recourse should be had to amputation through the thigh where the process has extended from the toes to the foot."

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[1] Deutsche med. Woch., September 24, 1891.

[2] Archives de Medicine, etc., Paris, October, 1891; Sajous's Annual, 1892.

MEDICAL NOTES.

New Periodicals. — The *South Russian Medical Weekly* is the translation of the title of a new medical periodical which appeared for the first time in October. It is written in Russian and published in Odessa, under the editorship of Dr. J. Moczutkowski. The *Central-Blatt für technische Hilfsmittel der Heilkunde*, an illustrated monthly, which as its name implies is devoted to medical and surgical apparatus, appeared in October in Berlin. It is edited by Wilhelm Tasch.

The Twenty Days' Quarantine detention of immigrants proclaimed by the President during the late cholera panic has not been revoked, and is evidently continued for purposes other than the prevention of cholera. Most Americans have looked upon this check to immigration with gratitude, and have wished that some less ridiculous basis could be devised for making it permament. The last act of the federal authorities, however, in detaining steamers because some of the cabin passengers come under the techinal definition of immigrants, even though not adding perhaps to the absurdity of the situation, is likely to arouse protests which will make the whole position untenable. The order was apparently designed, not so much on broad democratic principles, but to checkmate an attempt on the part of some of the steamship companies to bring in immigrants by registering them as cabin passengers.

Lord Tennyson. — It was commonly reported that the immediate cause of the death of Tennyson was influenza. His medical attendant has said that for thirty-six hours after the patient began to grow rapidly worse, the symptoms were markedly those of influenza, but that in its main features the case was one of break-up of natural powers.

The Billroth Jubilee. — The German custom of honoring aniversaries has reached Billroth in Vienna. On the fifteenth of October he celebrated the twenty-fifth aniversary of his appointment as professor, and his fortieth in the practice of medicine. His operating-room was decorated with flowers, and pictures of Billroth performing operations were presented to him and to the hospital. The Emperor has ordered that the degree of Master of Arts and Sciences shall be given him.

The Infectiousness of a Cholera Convalescent. — The recent epidemic at Hamburg has afforded opportunity of studying the length of time that it takes for the comma-bacillus to disappear from the dejections of convalescing cholera patients. Large quantities of bacilli have been found after the patient has for all practical purposes entirely recovered his health. This suggests the necessity of keeping a careful supervision of patients who otherwise are ready to be discharged.

BOSTON AND NEW ENGLAND.

Public Baths in Boston. — These baths, which are under the charge of the Board of Health and are open during the four hot months of the year, were used 1,125,836 times during the past summer. Of the persons using them, 909,889 were men and boys, 216,947 women and girls.

Powers of the Board of Health. — The Boston Real Estate Company has asked the Supreme Court for a writ of mandamus to compel the city Board of Health to grant the association permission to use certain premises for a dwelling-house. The place was closed by the Board in February as unfit, unhealthy and not in proper condition. The association have made improvements, but have failed to satisfy the Board, which claims full discretionary power over the matter.

The New Disinfecting Apparatus recently made for the Boston quarantine station has been tested by the Board of Health. The machine is a high cylinder of boiler iron, seven feet in diameter and twenty feet in length. It was put under a pressure of sixty pounds to the square inch and everything seemed satisfactory. The cylinder is fitted with thirty-six cages, twenty inches square and four feet in length. These are filled with clothing to be fumigated. Steam is then inserted from the steamboat and continued at a temperature of 212°, or over, for about twenty minutes.

Scarlet Fever in Waltham. — The epidemic of scarlet fever which we reported a few weeks ago in Waltham, Mass., has not yet subsided, and has caused much excitement in certain parts of the town. The aldermen passed resolutions condemning the Board of Health, in consequence of which the Board have resigned.

Diphtheria in Dorchester. — In reporting the recent ontbreak of diphtheria in Dorchester, the assistant physicians of the Boston Board of Health, after investigating each case individually, find that in October there were 48 cases, which were divided in two groups well separated from each other. One cause of the dissemination appeared to be due to carelessness in not using proper care in the isolation of suspicious cases, or in not isolating a sufficient length of time. They have become convinced that while physicians, as a rule, use great care in the treatment of the throat, and advise many precautions looking to the disinfection of the air and drains, insufficient attention is paid to guarding against contagion through the saliva. The hands of the patient or attendant should receive special care.

Physical Examination of Enlistments in the Massachusetts Volunteer Militia. — It is of interest to note that Lieutenant H. S. Deering, Assistant Surgeon First Infantry, First Brigade, M. V. M., was detailed to examine the enlistment of recruits for the new companies of the Naval Battalion at Fall River. Fifty-two recruits were examined, and four were rejected. In many instances it was found that the pulse was perceptibly quickened owing to the excitement of the examination. All cases were rejected where organic disease was found, and particular attention was paid to the test for color-blindness. It is the intention of the adjutant-general to have hereafter a physical examination of all recruits in the volunteer militia.

NEW YORK.

Bartholomew's Mission, on East 42d Street, has made an innovation by opening a free night dispensary for the poor for the treatment of diseases of the eye, ear, nose and throat.

A House for Trained Nurses. — A movement is on foot for the organization of an association of trained nurses, and two or three meetings have been held for this purpose at the Academy of Medicine Building. Those nurses who have not homes of their own have labored under many disadvantages. As a rule when unemployed they are compelled to live in second or third-class boarding-houses, and they are always regarded with more or less suspicion on account of the fear that they may carry infectious diseases into the household. Much difficulty is experienced also in getting their laundry-work attended to; and altogether they feel the need of a home where they can be comfortable in their leisure hours. The matter has been placed in the hands of a committee, and it is probable that a large house in West 22d Street will be reserved for the association. Besides furnished rooms for such as require them, ample provision will be made for table board, and there will be a well-equipped laundry in connection with the institution. In addition, it is proposed to have a well-selected library and comfortable reading-rooms.

Influenza. — There seem to be some indications of another attack of the grip in New York; and during the past week two deaths have occurred in which it has been assigned as a complicating cause. The health of the city, as a rule, however, still continues excellent, and the mortality for the week ending October 29th was the lowest ever recorded.

Miscellany.

LIBEL AND SLANDER OF PHYSICIANS.

A description of what constitutes libel and slander affecting physicians and surgeons is given by L. D. Bulette, Esq., in the *International Medical Magazine.* Words which cause an appreciable injury to the reputation, if they are false, constitute a libel when written or printed; a slander when spoken. Words which are clearly defamatory are actionable *per se*, without the necessity of proof that any particular damage has resulted from their use; if they merely tend to injure the reputation of another, some perceptible injury must be proved. When the words or language used imply gross ignorance, and unskilfulness in his profession, the medical practitioner may sue. It has been held that to call a physician a "quack" is thus actionable. The same is true of words charging that a physician is "an empiric and a mountebank"; or that "he is no doctor; he bought his diploma for fifty dollars"; or that "he is a quack, and if he shows you a diploma, it is a forgery." It is also actionable, without proof of special damage, to say of a physician, "He has killed the child by giving it too much calomel"; or "He has killed six children in one year"; or "If Dr. X. had continued to treat S., she would have been in her grave before this time."

On the other hand, it is not actionable, without proof of special damage, to say "He is a two-penny bleeder"; or "He is so steady drunk, he cannot get business any more." The same is true of words charging a physician with adultery unconnected with his professional conduct. But it would be otherwise if he had been accused of seducing or committing adultery with one of his patients. It is not actionable to charge one who is not legally authorized to practice physic or surgery or to receive compensation therefrom, with ignorance of the healing art, or with having destroyed human life by misapplied efforts; nor to say of such a person, "He is a quack" or an "impostor."

LUPUS FROM INOCULATION OF TUBERCLE BACILLI.

Wolters[1] reports an interesting case in which typical lupus could be directly traced to infection with tuberculous sputum. Such a case has been previously reported by Jadassohn. In the author's case a medical student received a scalp wound in a duel. While this was healing, he was engaged in the examination of tuberculous sputum. The young man appears to have been in the habit of scratching his wound without previously wiping his fingers.

SURGERY OF THE APPENDIX VERMIFORMIS.

The following praiseworthy and sensible letter is taken from the columns of the *Medical News* of November 5th:

London, October 19, 1892.

Sir: — I have just read with interest a leading article in the *Medical News* for August 6th, on the matter of operative treatment in inflammation of the vermiform appendix.

The fact that I live in a remote island, and, further, that a holiday of two months has taken me away from the haunts of books, must explain this tardy allusion to that paper.

The article discusses the origin of the operation for removing the vermiform appendix, and it is stated that to Dr. Thomas G. Morton belongs the credit of devising this procedure; the suggestion is made that the operation should be called "Morton's operation," and it is asserted that Morton's operation embodies one of the most important and radical advances of modern surgery. Dr. Morton thus becomes the founder of what will, I suppose, be known in the future as "Appendiceal Surgery" — should the present love for ridiculous terms survive.

I gather that Dr. Morton's first operation was performed in 1888, and was reported in the Philadelphia County Medical Society's *Transactions* for that year. The nature of the operation is not stated. Who first excised the appendix vermiformis some musty and forgotten tome will no doubt reveal in course of time. I know that the cæcum was wholly removed (with success, by the by) by Arnaud, in 1732, but I have not yet completed my inquiries into the past surgical history of its appendage. So far as modern times are concerned, I should say that we owe the little item of surgical treatment under discussion to the admirable writings of Fitz, whose chief monograph appeared in 1886. In 1886, a patient with relapsing typhlitis came under my care in the London Hospital, and after due consideration I proposed to "deliberately seek for and remove" his appendix. I operated upon him during a period of apparently perfect health, on February 16, 1887, and was able to correct the distortion of the appendix without actually excising it. He made a perfect recovery. On September 19, 1887, I brought the matter before the Royal Medical and Chirurgical Society. The paper was read in February, 1888. I advised the treatment of selected cases of relapsing typhlitis by the deliberate removal of the offending appendix during a quiescent period. The proposal was not well received. In due course, however, an exuberant reaction took place, and of late years appendices have been removed with a needless and illogical recklessness which has brought this little branch of surgery into well-merited disrepute.

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[1] Deutsche med. Woch., September 8th.

Discussions on questions of priority constitute the most pitiable and petty items in the literature of medicine. Time disposes of all such questions with absolute justice. The object of this letter is merely to bring up from oblivion an unpretending paper which lies buried in the annals of an ancient society. Believe me to remain,

Yours faithfully,
Frederick Treves.

A BACILLUS PRODUCING GAS IN THE BLOOD-VESSELS AFTER DEATH.

Welch and Nuttall[1] have discovered a bacillus which develops rapidly in the blood-vessels after death, and whose development is accompanied by the production of gas. The presence of gas in blood-vessels at post-mortem examinations has frequently been reported; and its existence has been a puzzle, occurring as it may but a few hours after death, unaccompanied by other signs of decomposition. This new bacillus, which has been named by the authors "bacillus ærogenes capsulatus," has been cultivated in agar-agar and other media, and only grows if oxygen is excluded. The growth of the cultures is accompanied by the appearance of bubbles of gas. Cultures of this bacillus are not pathogenic for healthy rabbits under ordinary conditions; but if the animal is killed after intravenous injection, the bacilli develop in the blood-vessels, tissues and organs with an abundant formation of gas. When the animal is killed shortly after the injection into the circulation, and is then kept at a temperature between 30° and 35° C., a development of bacilli and gas goes on with almost startling rapidity. Of all the organs of the body, the liver offers the most favorable conditions for the rapid development of the bacillus, but they first grow in the course of the circulatory channels into which they have been introduced. If the animal is killed one or two minutes after the injection of the culture into a blood-vessel, the development is quicker than if he be allowed to live for one or two days. If the bacilli are introduced at one place in the vascular system soon after death, they develop in the course of the vessels into which they are introduced, and the time required for them to appear, with gas formation, throughout the vessels is at least two or three times as long as when the bacilli have been distributed throughout the circulation just before death. The bacillus may be introduced antemortem as a result of a surgical operation, or in any other condition in which a blood-vessel is opened. They probably do not multiply if the person remains alive, and in a few days disappear. The authors consider that it is probable that many cases reported from the autopsy to have died by the admission of air into the circulatory system have in reality died from some other cause; the gas produced by this bacillus having been mistaken for air.

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[1] Bulletin of Johns Hopkins Hospital, July and August.

THERAPEUTIC NOTES.

Ichthyol[1] is a distillation product of bituminous material containing large quantities of sulphur. It is much used in Germany, especially in the treatment of diseases of the skin, but also in general surgery. The best preparation is sulphichthyolate of ammonium, which is a thick, dark-brown, greasy, bituminous solution, soluble in alcohol and ether, in water and in all oils and fats, and is not readily decomposed, and it is not poisonous. It has some antiseptic power, but its special value lies in the constricting action it exercises upon the vascular system. It has been much used in erysipelas is the form of a thirty to fifty per cent. ointment, or thirty per cent. solution in water, which is painted two or three times a day over the inflammed area. It is said to be valuable for the erythematous swelling around septic wounds, and all surgical conditions associated with dilated blood-vessels. It is also given for acne, both externally and internally; and it may also be used in furunculosis, locally.

The Action of Erysipelas on Malignant Tumors.[2]— Attempts to verify the common impression that an attack of erysipelas produces a curative effect upon malignant cutaneous tumors by different experimenters both with dogs and human beings do not show that any good therapeutic results are obtained. A pure culture of the streptococcus of erysipelas was filtered and a solution containing tox-albumin was used as an injection.

Treatment of Small-Pox by Darkness.— Gallavardin,[3] as the result of his experience since 1876, finds that if patients suffering from small-pox are uninterruptedly kept in a room from which all solar light is excluded, the disease presents no period of suppuration, and that in consequence the subsequent scarring is infinitesimal.

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[1] Therapeutic Gazette, October.
[2] Rev. Gen. de Clin. et de Thérap., August 3d.
[3] Lyon Medical, June 12th.

METEOROLOGICAL RECORD,

For the week ending October 29, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...23	29.74	56	63	49	57	55	56	S W.	W.	11	11	C.	C.	
M..24	29.85	47	53	41	63	52	58	W.	W.	12	7	C.	F.	
T..25	29.85	46	56	36	68	67	68	W	S.E.	8	6	C.	O.	
W .26	29.74	45	48	42	92	85	88	N.W.	W.	6	12	O.	O.	.07
T ..27	29.85	47	56	38	76	54	65	W.	W.	10	3	C.	O.	
F ..28	29.86	47	51	40	63	69	66	W.	N.E.	5	4	C.	F.	
S..29	29.64	48	56	40	65	60	62	S.	W.	9	13	O.	F.	.09
☞	29.79	48	55	41	69	63	66							.023

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 29, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York	1,827,396	631	237	15.52	15.36	3.36	5.92	2.24
Chicago	1,250,000	423	158	19.82	12.27	1.42	10 62	3.54
Philadelphia	1,092,168	417	155	18.72	11.28	2.88	11.76	1.92
Brooklyn	955,333	348	151	25.52	25.52	17.40	10.15	2.03
St. Louis	477,873	—	—	—	—	—	—	—
Boston	469,645	186	53	15.12	16.20	2.03	10.15	.29
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	305,000	105	30	11.40	7.60	4.75	1.90	3.80
Cleveland	281,353	92	31	18.53	9.81	3.27	7.63	5.45
Pittsburg	255,000	88	36	25.00	10.26	5.70	11,36	4.56
Milwaukee	234,440	—	—	—	—	—	—	—
Washington	230,360	111	37	16.20	12.60	3.60	4.50	5.40
Nashville	87,754	16	6	12.50	12.50	—	—	12.50
Charleston	56,048	32	11	12.52	6.26	6 26	—	3.13
Portland	40,000	10	2	—	20.00	—	—	—
Worcester	92,313	26	5	7.70	3.85	—	3.85	3.85
Lowell	82,455	28	6	14.28	7.14	3.57	3.57	3.57
Fall River	82,128	40	16	77.50	2.50	7.50	10.00	—
Cambridge	74,644	34	9	11.76	—	5.88	2.94	2.94
Lynn	60,809	8	2	12.50	12.50	—	—	—
Springfield	47,052	14	7	28.56	7.14	7.14	21.42	—
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	44,947	14	5	14.28	—	7.14	7.14	—
Holyoke	40,099	—	—	—	—	—	—	—
Brockton	32,783	7	—	—	—	—	—	—
Salem	31,495	8	2	25.00	25.00	—	25.00	—
Haverhill	30,065	20	9	5.00	5.00	5.00	—	—
Chelsea	29,479	12	—	8.33	—	—	—	—
Malden	27,252	8	1	—	12.50	—	—	—
Newton	26,498	—	—	—	—	—	—	—
Taunton	26,464	—	—	—	—	—	—	—
Gloucester	26,008	3	2	33.33	33.33	—	—	—
Fitchburg	25,444	6	2	—	—	—	—	—
Waltham	20,942	5	2	—	—	—	—	—
Quincy	18,669	5	2	20.00	—	40.00	—	—
Pittsfield	18,294	5	4	60.00	—	—	—	60.00
Northampton	15,084	—	—	—	—	—	—	—
Everett	14,745	5	2	—	—	—	—	—
Newburyport	14,031	5	1	—	20.00	—	—	—
Amesbury	13,561	1	0	—	—	—	—	—

Deaths reported 2,719: under five years of age 985; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping cough, erysipelas and fevers) 491, acute lung diseases 310, consumption 302, diphtheria and croup 14, diarrhœal diseases 78, typhoid fever 74, whooping-cough 41, scarlet fever 35, measles 15, cerebro-spinal meningitis 11, erysipelas 10, malarial fever 10, small-pox 3.

From whooping-cough Brooklyn 33, New York 5, Cincinnati, Pittsburgh and Washington 1 each. From scarlet fever Chicago 8, New York 7, Philadelphia 6, Boston and Fall River 4 each, Cleveland and Pittsburgh 2 each, Brooklyn and Chelsea 1 each. From measles Chicago 6, New York 4, Brooklyn 2, Boston, Lowell and Fall River 1 each. From cerebro-spinal meningitis Chicago 3, Washington 2, New York, Worcester, Lynn, Brockton, Gloucester and Quincy 1 each. From erysipelas Brooklyn 4, New York and Philadelphia 2 each, Chicago and Boston 1 each. From malarial fever New York and Brooklyn 4 each, Philadelphia and Charleston 1 each. From small-pox New York 2, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending October 22d, the death-rate was 18.0. Deaths reported 3,524: acute diseases of the respiratory organs (London) 267, diarrhœa 94, measles 88, diphtheria 68, scarlet fever 58, fever 46, whooping-cough 29, small-pox (Oldham and Halifax 2 each) 4.

The death-rates ranged from 7.9 in Croyden to 23.0 in Preston; Birmingham 19.4, Bradford 18.1, Huddersfield 15.1, Hull 16.0, Leeds 21.7, Leicester 17.7, Liverpool 19.8, London 17.7, Manchester 19.2, Nottingham 16 0, Portsmouth 17.5, Sheffield 16.8, Sunderland 21 2, West Ham 16.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 29, 1892, TO NOVEMBER 4, 1892.

The leave of absence granted CAPTAIN HENRY P. BIRMINGHAM, assistant surgeon, U. S. A., is hereby extended one month.

FIRST-LIEUT. HARLAN E. MCVAY, assistant surgeon, U. S. A., will proceed from Fort Wingate, New Mexico, to the Camp south of Bisbee, A. T., and report to LIEUT.-COL. J. W. BARLOW, corps of engineers, Commissioner of International Boundary-line survey, for duty, relieving CAPTAIN E. A. MEARNS, assistant surgeon, U. S. A.

PROMOTION.

FIRST-LIEUT. NATHAN S. JARVIS, assistant surgeon, U. S. A., to be assistant surgeon, with rank of Captain, October 14, 1892, after five years' service, in accordance with Act of June 23, 1874.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. – A regular meeting of the Society will be held on Monday, November 14, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. C. W. Townsend: "On the Treatment of Incontinence of Urine in Children."

Dr. E. H. Bradford: "The Symptoms of Acute Rickets."

G. G. SEARS, M.D., *Secretary.*

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. – The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place on Wednesday evening, November 16th, at 8 o'clock.

Subject: "Malaria in Boston and Vicinity," Drs. C. W. Townsend and H. Jackson. Drs. E. H. Stevens (Cambridge), O. F. Rogers (Dorchester), and G. K. Sabine (Brookline) will open the discusion.

Report of the committee appointed to consider "The Desirability of further Sanitary Legislation."

F. C. SHATTUCK, M.D., *Chairman.*
HENRY JACKSON, M.D., *Secretary.*

APPOINTMENTS.

LIEUT. [Junior grade,] JAMES G. MUMFORD, appeared before the Board of Medical Officers, Massachusetts Volunteer Militia, was qualified, examined and passed as surgeon of the Naval Battalion, M. V. M.

DR. L. BOLTON BANGS, has resigned from St. Luke's Hospital as attending surgeon and been appointed consulting surgeon. DR. FRANK H. MARKOE has been appointed attending surgeon, and DR. CHARLES A. POWERS attending surgeon *ad interim.*

BOOKS AND PAMPHLETS RECEIVED.

All Around the Year. Calendar for 1893. Boston: Lee & Shepard.

The Curability of Narcotic Inebriety. By J. B. Mattison. M.D., Brooklyn, N. Y. Reprint. 1892.

The Sanitary Side of the Drink Problem. By T. D. Crothers, M.D., of Hartford, Conn. Reprint. 1892.

Asheville, or the Skyland. By Mrs. Harriet Adams Sawyer. St. Louis: Nixon-Jones Printing Co. 1892.

Local Boards of Health in the State of New York. Issued by the State Board of Health. Albany. 1892.

Transactions of the American Otological Society, Twenty-fifth Annual Meeting, New London, Conn. 1892.

Kentucky School of Medicine in the City of Louisville. Register of Students, 1892. Circular of Information, 1893.

Extirpation du Cancer de L'Estomac Etude Sur un Cas de Guérison. Par L. Defontaine (du Creusot). Reprint. 1892.

Nomenclatura Morborum Auris et Nomenclatura Morborum Nasi et Naso-Pharyngis. By E. D Spear, M.D., Boston. 1892.

Early History of the Retreat, York; Its Object and Influence. By D. Hack Tuke, M.D., LL.D. London: J. & A. Churchill. 1892.

Compressed Air and Sprays in Diseases of the Nose, Throat and Ear. By Seth Scott Bishop, M.D., of Chicago. Reprint. 1892.

The International Magazine Pocket Visiting List. Sixty patients each week. 1893. By J. C. Wilson, M.D. Philadelphia: J. B. Lippincott Co.

Professor Billroth's Surgical Clinic at the Vienna General Hospital. Copy of India-proof engraving. Size 24 by 32. New York: William Wood & Co. 1892.

The Anatomy of the Peritoneum. By Franklin Dexter, M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons. New York: D. Appleton & Co. 1892.

The Physicians Pocket Day-Book. Designed by C. Henri Leonard, M.A., M.D. Daily charges for twenty-five or fifty families weekly. Good for any thirteen months. Illustrated Medical Journal Co., Detroit, Mich.

Diseases of the Chest, Throat and Nasal Cavities. By E. Fletcher Ingalls, M D., Professor of Laryngology and the Practice of Medicine, Rush Medical College, etc. Second edition. New York: William Wood & Co. 1892.

Original Articles.

OPERATION FOR REMOVAL OF THE STAPES.

BY CLARENCE J. BLAKE, M.D., BOSTON,
Professor of Otology, Harvard Medical School, Aural Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

The question of the removal of the stapes in the human subject with a view to an improvement in hearing is one which has been gradually approached both in this country and in Europe through observations upon the effect of operations in the middle ear undertaken for the purpose of increasing the mobility of the sound-transmitting apparatus or of removing such obstructions to the passage of the sound waves as might have occurred as the result of previous disease of the middle ear. These operations have included, from a very early date, incisions of the membrana tympani, and its partial or entire removal, myringotomy, myringectomy, divisions of adhesions or folds, synæchtomy, plicotomy. tenotomy of the musculus tensor tympani, and removal of one or all of the ossicula.

The latter operation when done in a case of suppurative disease of the middle ear, either because of existent caries of the ossicula themselves, or because their removal is necessary to permit access to the carious walls of the tympanic cavity and to facilitate drainage, comes under the head of an ordinary and justifiable surgical procedure.

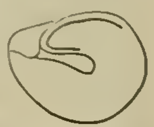
In the case of non-suppurative disease of the middle ear with fixation of the ossicular chain, as the result of thickening of the investing membrane and of changes in the articulations and about the insertion of the stapes the question of surgical interference assumes a different aspect, since it includes the invasion of an aseptic cavity and indirectly the interference with an apparatus devoted not only to the perception of sound but also to the maintenance of equilibrium, and is done, not because of an already existent surgical necessity, but with the view to the improvement of a condition, and should not therefore be undertaken without a full appreciation of its possibilities for better or worse nor without complete antiseptic precautions.

The removal of the membrana tympani, malleus and incus, as proposed by Kessel, an operation which has been much exploited in this country as a remedy for extreme deafness, vertigo and tinnitus aurium in cases of non-suppurative disease of the middle ear, not only offers an unnecessary degree of violence to the middle ear but is unscientific in the sense that it leaves untouched that portion of the ossicular chain, the stapes, which has been justly denominated the key to the labyrinth; experience also indicates that the improvement in hearing in the cases so operated upon has been due, in the great majority of them, to the mobilization of the stapes incident to the removal of the two larger ossicles rather than to the removal of an obstruction presented by these bones themselves, for unless the stapes itself be mobile removal of the membrana tympani and the other ossicula must be in a measure ineffectual. The theoretical objection to interference with the stapes, on the ground that disturbance of intra-labyrinthine pressure would result in more or less disturbance of equilibrium, has at various times been met in the past by practical experience at the hands of different observers in cases of mobilization of the stapes, and of accidental removal of the stapes in the human subject, and recent experiments on the removal of the columella in birds show that vertiginous symptoms are not evoked unless the labyrinth is unnecessarily interfered with. At the same time in performing the corresponding operation on the human subject the question of the possible after-effect, in the more or less protracted vertigo should always be considered.

The operation of stapedectomy, to give it a distinctive name, or of incudo-stapedectomy, in case it is necessary to remove or displace both the incus and stapes is, under favorable circumstances, a very simple one, and easily performed under the necessary conditions of a good illumination, proper anatomical knowledge, and a trained sense of touch.

The instruments need be but of the simplest, and such as are found in any ordinary aural clinic, namely, a paracentesis needle, an angular knife for division of the articulation of the incus and stapes, a small hook, preferably blunt, and a small pair of curved forceps, elaborations of these instruments being added according to the demand of individual cases or the choice of individual operators.

The simplicity of the operation itself does not imply the permissibility of any lack of precaution as regards antisepsis or extent of the interference with the tympanic cavity, in both of these respects every care should be taken and the course of the operation as originally planned and as I have so far practised it may be briefly outlined as follows, it being understood that the ear to be operated upon has been carefully tested as to its hearing power, and carefully examined with reference to the position of the membrana tympani and ossicula so far as ascertainable and the external auditory canal thoroughly washed and scrubbed with a bichloride solution on a cotton-tipped probe. The hands of the operator should be thoroughly washed and dipped in bichloride solution before the operation and in addition to the instruments and a number of cotton-tipped probes, there should be provided a saturated solution of boric acid in alcohol and a two per cent. solution of cocaine sterilized, the former for dipping the instruments before using, and the latter for checking congestion and bleeding.



The patient having previously been etherized, preferably in a sitting position, the incision of the membrana tympani is made with a paracentesis needle from a point at the posterior border of the membrana tympani, and carried upward and forward closely following the periphery until the point of insertion of the posterior ligament of the short process of the malleus is reached, and is then carried downward along the border of that ligament and for a short distance down the manubrium mallei, or if preferred may be made in the reverse direction, the flap so formed falling outward by its own weight and affording a clear view in the great majority of cases of the incudo stapedal articulation; the advantages of this form of cut, the same which I have previously used in the operation for simple mobilization of the stapes, in preference to either the semilunar or the triangular cut, and which is a modification of that used by Miot, are evident on examination in the temporal bone of the relationship which the superior posterior periphery of the tympanic ring bears to the long axis of the fenestra ovalis when viewed from the centre of the auditory meatus, and also on consideration of the fact that it affords a broad field for examination of the stapedal region and may be extended downward posteriorly to include the round window, adhesions or cicatrices, about which are often matters deserving consideration and interference.

Hæmorrhage from the upper edge of the cut is easily stilled by the use of the cocaine solution on a cotton-tipped probe; and the next step in the operation, division of the incudo-stapedal articulation or of the tendon of the stapedius muscle is effected by means of the angular knife or the paracentesis needle.

Where the oval window is in clear view, the division of the joint may precede the cutting of the tendon, the angular knife being carried from behind forward, against the pull of the stapedius muscle for this purpose; where, however, the stapes is less accessible, the division of the stapedius muscle should precede disarticulation.

So soon as the union between the incus and the stapes is divided, the counterbalancing weight of the body of the incus above its axial line of longitudinal suspension, a proportion of eighteen to seven, throws the body of the incus inward, and its descending process correspondingly outward and forward away from the stapes, while, if the stapedius muscle is intact, the head of the stapes released from its attachment to the incus, is pulled forcibly backward, as shown by Eysell, toward the posterior border of the stapedal niche; under these conditions unless the anatomical relations be such as to leave the stapes plainly in view, division of the stapedius tendon is much more difficult than if undertaken before the section of the articulation.

The concluding step in the operation, removal of the stapes, should be preceded by the division of any adhesions between the stapes and the walls of the niche; and by gentle mobilization. For this purpose the small angular knife used for dividing the articulations may be passed between the crura, and the stapes moved gently backward and forward. The blunt hook is then substituted, inserted under the head of the stapes in the same manner and by means of gentle traction the stapes is, *if possible*, extracted. The above proviso as to possibility is advisedly made, because it is by no means always possible to remove the stapes entire, a common fracture, where such occurs, being, as shown in experiments on the cadaver, as well as in some of the cases in which I have operated, the breaking of one crus near the head and the other near the base plate of the stapes. Extraction from the oval window and the niche, moreover, does not necessarily imply removal from the middle ear, since a few remaining fibres of the stapedius muscle, or the existence of a firm and undivided reduplication, may serve to pull the stapes when released from its fenestral attachment, backward and out of sight. Under these conditions, I am inclined to believe that, the object in the extraction of the stapes from the oval window having been accomplished, it is better to leave the stapes alone than to make protracted attempts at its discovery and removal.

After the operation, the ear should be carefully wiped dry, and stopped with a pledget of absorbent cotton, which may remain untouched for a period of two or three days, unless there are indications for its renewal and for further cleansing of the ear.

The vertiginous symptoms and the muscular contractions of the upper extremities which I have previously noted as a symptom in cases of mechanical mobilization of the stapes without ether are represented in the stapedectomy cases under ether by an almost invariable slowing of the pulse with, occasionally, twitching of the fingers at that moment when the separation of the stapes from its fenestral attachment causes the greatest variation in the intra-labyrinthine pressure.

That so profound a disturbance of the labyrinthine apparatus, especially where the stapes comes away with difficulty, would cause more or less protracted vertigo is to be expected; and this contingency is one which should always be placed before the patient, for while, as a rule, the vertigo is of short duration, there is always a possibility of its being a serious after-effect, a contingency which can only be properly estimated after a careful observation of many cases.

In conclusion, it may be said that while, as has been stated, this operation is a simple one, this assertion applies only to those cases in which the anatomical conditions, as permitting free access to the parts, are favorable; otherwise, the operation may have to be done, or at least completed, mainly by sense of touch, and is under these circumstances both protracted and difficult. Taking into consideration the clinical experiments of Lucae and others, it is perhaps needless to say, that, while this operation presents a possible means for amelioration of a class of difficult cases and opens a field for scientific research, long and careful observation and comparison of individual experiences will be necessary to place it upon its true basis of value and to determine the special class of cases to which it is applicable.

CONTRIBUTIONS TO AURAL SURGERY.[1]

BY D. B. ST. JOHN ROOSA, M.D., LL.D., NEW YORK.

A CASE OF EXOSTOSIS OF THE EXTERNAL AUDITORY CANAL; REMOVAL; CONSIDERABLE IMPROVEMENT IN THE HEARING POWER.

MRS. M., of Huntsville, Ala., consulted me, April 20, 1892, on account of a closure of the right auditory canal, and great impairment of hearing on that side. The patient was forty-six years of age, with rather delicate general health. She thinks her lungs are not sound, and she states that she had a pulmonary hæmorrhage sixteen years ago. She also says that she has had some trouble in her right ear, since she was twenty-five years of age, and that impairment of hearing has existed, on that side, for a long time, and that it is gradually increasing. She has tinnitus aurium referred to the right ear, and, at times, pain in both ears. A year ago she had an abscess in the right ear. A tumor in the auditory canal in that side, was discovered two years ago. The patient gives a very vague account of previous attacks of pain and discharge from the same ear. Her hearing distance is R $\frac{c}{40}$. L $\frac{40}{40}$. Her bone construction is longer and louder than the ærial on the right side. The pharynx is slightly granular. On examination, the right auditory canal at the junction of the osseous and cartilaginous portion, is closed, by a hard growth, evidently bony, almost hermetically. A very fine probe cannot be introduced between it and the anterior wall. It is sensitive to the touch. It was impossible for me to determine, by examination with the probe, whether this was a general filling up of the canal, or a plate of bone, stretching as a bridge or shelf across it. The patient consulted two aural surgeons besides myself, in New York, in regard to the removal of the obstruction in the canal. She has received conflicting advice, as to the necessity and propriety of an operation in other cities. Yet, according to the patient, the majority had favored removal of the growth. One authority, in consultation with me, wrote as follows:

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[1] Read before the American Otological Society, July, 1892.

"I am disposed to advise, in Mrs. M's. case, that nothing be done with the bony growth until its removal, or the equivalent mastoid operation, becomes a necessity through the development of a purulent otitis media. If she were stronger, and cared very little about the annoyances attending and following such operation, I should consider the question somewhat differently."

I unhesitatingly advised an attempt at a removal of the tumor. In this advice, I was strongly backed by my colleague, Dr. Emerson, of this Society. Our reasons for this were:

(1) The patient was suffering considerably from the sense of fulness, tinnitus and loss of hearing on that side.

(2) An otitis media was very likely to recur, and an obstruction in the outlet of the pus, would surely be dangerous and possibly fatal to her life.

I was not at all certain that the growth did not extend from the tympanum and fill up the whole canal. I informed the patient that the operation might be a tedious and difficult one, and that the relief might not be all we hoped. In short, in this uncertainty as to the extact origin and size of the growth, I gave no flattering prognosis; but I stated decidedly that, in my opinion, the patient should be put under ether, and an attempt at removal of the obstruction be made. The operation was desired by the patient, and it was undertaken four days after I first saw her. I was assisted by Dr. Emerson and Dr. Frank N. Lewis. A sharp gouge and hammer were used. After division of the integument over the growth, five or six taps of the hammer on the gouge, were sufficient to detach the growth from the posterior canal, when it was easily removed with a strong hook. Very slight hæmorrhage followed. The obstruction was found to consist of a plate of bone, about one-twenty-fourth of an inch in thickness, fully closing the canal. I was not able, immediately after the operation, to determine whether the membrana tympani did or did not exist. The patient remained in bed two or three days. She had very little pain. The hot douche was used every three hours, until it subsided. The patient steadily improved, and on May 6th, eight days after the operation, I was able to determine that the drum-head existed, and that the canal was healed and entirely free from any obstruction. The hearing distance became $\frac{6}{40}$, and the subjective symptoms were declared to be much alleviated.

Remarks. — The Society may recall the writings of Blake and myself on this subject of exostosis, in which the etiology of the growths is fully discussed. Although judging from the writings of George P. Field and others, I have no such abundant opportunities to study their growths as are had in England, where they seem to be much more frequent, I have enough to cause me to adhere to my first opinion, that they are essentially local in origin, and not particularly dependent upon any dyscrasia, such as gout or syphilis. The first process is probably a periostitis, induced by local irritation, which is intensified by want of proper antiphlogistic and cleansing treatment. This case, it seems to me, is plainly one of this character, although there may be congenital cases.

WOUND OF THE LATERAL SINUS DURING AN OPERATION UPON THE MASTOID PROCESS, IN A PATIENT WITH PHTHISIS PULMONALIS; SEPTICÆMIA; RECOVERY.[2]

Mary D., age twenty-three, was placed under my care, at the Manhattan Eye and Ear Hospital, on May 11, 1891, by Dr. E. A. Davis, who had been the family physician of the patient. The history of the case is, that the patient who is a delicate young woman, with a cough, had an attack of acute suppurative *otitis media* in the left ear, about fifteen months since. She recovered from the acute symptoms in a week; leeches were used and a paracentesis of the drum-head performed. One year ago, she began to have pain and tinnitus aurium in the right ear, which improved under treatment; she, however, had recurrent attacks during the year. She is now again suffering from this ear, and with an additional symptom — slight tenderness of the mastoid process. She has now had pain for three weeks, the first of which she ascribes to exposure to a draught.

There is tenderness and swelling of the mastoid and neck. The tenderness is most marked at the apex of the mastoid process. The auditory canal is red and swelled, the drum membrane perforated. The hot douche and poultices were used, but, relief not being had in two days, an operation of opening the mastoid was decided upon, and was performed on May 12th. Wilson's trephine was used. After boring for one-sixteenth of an inch, the cells were reached. A slight flow of venous blood followed the withdrawal of the trephine. An opening, carious in character, was found immediately beneath the surface of the bone, which involved a large part of the cells, a Bowman's probe passing freely in and about. The drill was being used to enlarge the opening, when a great gush of venous blood occurred. It was so large and so persistent that a tent of oakum was quickly plugged into the cavity, and the whole wound closed with the same dressing. Borated cotton was firmly applied on this, and a bandage over all. The patient was put in bed, and at 10 P. M. morphia was given on account of pain and throbbing in the ear.

May 13th. The patient has had a good night. Her pulse and temperature have been normal, the bandage was removed, but the dressings were left undisturbed, and a bandage not so tightly applied. At 9 P. M., on this day, the temperature was elevated for the first time (100°); pulse 80; slight headache.

May 15th. Patient has some pain in the ear. Temperature 99°. Her wound was now dressed, and nearly all the oakum removed, but a small part of the tent was left behind. There was no bleeding. The wound looks well. It was cleansed and iodoform gauze applied. On the next day the wound was again dressed by Dr. Frank N. Lewis. (Dr. Lewis had the main charge of the treatment of the case, in connection with the house-surgeon, Dr. A. E. Davis, until June 21st, and after that, the sole charge until the patient left the hospital.) The remainder of the tent was then removed. It had a very offensive odor. About a drachm of dark-colored blood oozed from the cells. The wound was then washed with hot water, and again dressed with iodoform gauze and borated cotton. At 5 P. M., three days after the operation, the patient had a chill, which lasted a little more than half an hour.

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[2] Read before the American Otological Society, July, 1892.

The patient states that she began to be chilly immediately after the dressing. At 5.30 P. M. she vomited. Her pulse was 134 and weak; temperature 104.2°. At 9 P. M. the temperature and pulse were about the same. She had copious movements from the bowels, given in the morning.

May 17th. The temperature after midnight receded to 101°. The wound was redressed, and a light poultice applied. The patient had a chill at 10.45 A. M., and the temperature and pulse again went up. The patient could take no nourishment on account of sickness of the stomach. Champagne and whiskey were given during the day, the latter hypodermically. Her pulse during the day reached 200, but came down to 120.

May 18th. The patient rested better. Pulse 120, temperature, per rectum, 100.2°. A watery evacuation from the bowels. The poultice was removed from the mastoid. The patient took peptonized milk during the day. She had a slight chill at 10.30 and at 8 P. M. Movements of the bowels occurred frequently, and were checked when excessive, by starch and opium enemata.

May 19th. Patient is resting better. She takes some nourishment by the mouth and peptonized milk per rectum. The morning temperature was 99.5°, evening 102.5°. She had a severe chill at 8.45 P. M. Complains of pain and hardness in the right knee.

May 20th. The chills continue to recur at irregular intervals. The knee is better, but she complains of pain immediately below, and to the outer third of the left clavicle. There is frothy expectoration. The temperature is 101.2°. She is taking a fair quantity of nourishment and two-ounce injections of peptonized milk, per rectum, every two hours.

May 21st. The chills continue. The wound looks well. Takes milk and whiskey, the former with limewater. The bowels moved freely.

May 24th. The chills continue, but not severe ones. Temperature generally lower, highest 103°.

May 30. Pulse 100, temperature 100° to 103°. Respiration 40. Sleeps better. Chills continue, but are not severe.

June 6th. The wound has healed. The patient is nauseated constantly and vomits occasionally. All food is taken by the rectum. Pains under clavicle and in knee and in chest. Dr. A. H. Smith, in consultation, advised morphia every hour to control vomiting. It had no effect.

June 12th. There is still no change in the persistent nausea. The patient is losing flesh rapidly. A small quantity of coloring matter of the bile was found in the matter vomited, on examination by Dr. Reyling, besides epithelium from mouth, fat globules, starch granules, half digested mucous fibres and putrefactive bacteria.

June 15th. Patient is still vomiting, but retained a drachm of clam-juice given every two hours.

June 20th. The patient continues the same. Retains no nourishment, except that given per rectum. Pulse and temperature a little above normal.

June 27th. The patient has a normal temperature to day. She has nutritive enemata, but retains nothing taken by the mouth. The next day she had a natural movement of the bowels. The temperature was again above normal 101.5°, pulse 100.

June 30th. She retained for a short time artificial food taken by the mouth (sarco-peptones).

July 8th. The patient has retained no food taken by the mouth until to-day, when she asked for toast and an egg, which were given, and which were retained. She is sleeping well, and has no fever. She has made a decided turn for the better. This has been evident for ten days.

July 15th. It is now a little over two months since the operation upon the mastoid. The patient is taking nourishment every three hours, and is retaining it. She takes coca wine, *Vin Mariani*, two-ounces three times a day. She continues to improve, to take solid food and to go about the hospital. Her weight increased. In a few weeks after she looked as well as when she entered the hospital. She had no pain in the ear, no redness or suppuration from the canal, and on July 25th, 74 days from the opening of the mastoid, she was discharged. In the winter of 1891–92 she went to the Adirondacks on account of her cough; and in May, 1892, she was still there, but not materially improved. Her ear continued well, and she was not losing flesh. Dr. Trudeau is hopeful for her. The patient is in his sanatarium.

Remarks. — It is not possible to say positively, that the lateral sinus was wounded in this case, but all the probabilities are in that direction. The patient had had a chronic suppurative abscess for some months when the mastoid process was opened; and an irregular, carious cavity, in which there was inspissated pus, was found. It is probable that the wall of the sinus had been invaded by this carious process, so that the sinus was ready to open on very slight provocation. As will be remembered, the trephine was used to open the cells, then a Bowman's probe was employed to explore the cavity. It was while a probe was being used to enlarge the opening that the profuse and alarming hæmorrhage occurred. This was so great as to forbid anything but the use of the tampon.

Several cases of wound of the sinus have been reported, a notable one by Knapp. In none of them, I believe, has a fatal result occurred as a result of the lesion of this blood-channel. In the case now presented, the septicæmia was probably due to the entrance of the pus into the circulation, at the time of the operation. Such a carious cavity as this mastoid was, is pretty certain, unless well cleared out, to produce septicæmia, sooner or later. This was not as grave a case as the one of pyæmia, reported by the late Dr. Edward T. Ely,[3] which was under his care and mine, but the patient who recovered from pyæmia, after an operation upon the mastoid, as described by Ely, was in much better general health than the patient whose case is now reported. The patient was delicate and had a cough, when operated upon. She was found by Dr. West Roosevelt, to have phthisis pulmonalis when she recovered from the septicæmia, but she looked well and weighed as much, or more, than when the operation was performed. I am constrained to believe from what has been reported, that a wound of the lateral sinus, much as its occurrence is to be deplored, is by no means generally a fatal accident.

The difficulty of determining beforehand, just what we shall find on opening the mastoid process of an ear that has for a long time been the seat of disease, is clearly illustrated by this case, as it has been in so many others. There was no good reason for believing that we should find an extensive carious process on opening the bone. But the indications for this operation and the signs which indicate about what we shall find, have not yet been made everywhere clear. The operation has been too recently adopted into surgery for this. It is only since 1871, in this country, that it has been clearly set forth as an operation that is often required; that we were about as early in its recognition as an indispensable thing to be done, as any civilized people, the history of the operation shows. It is safe to predict that in another decade, the indications for its performance will be as clearly laid down, as it will be possible to give the rules for operations upon closed parts of the body. The concluding history of this patient is interesting. Whether the operation and the subsequent blood-poisoning has any bad influence upon her general health must, I think, remain an open question. She was certainly a delicate person, and had a cough when I first saw her, but it is said, that she never had night-sweats until her entrance into the hospital.

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[3] Roosa, on the Ear, 7th edition, p. 567.

There are points in the therapeutics of this case worthy of remark. When it was known that septicæmia had set in, as was shown by the irregular chills, the redness and tenderness of the popliteal space, and under the clavicle and in the lungs, fortified by past experience, to which allusion has already been made, it was resolved that no medicines intended to directly combat the disease should be given. I believe that the only hope in pyæmia or septicæmia is that the poison may be elimited through the bowels, the kidneys and the skin. The antipyretics generally, and especially quinine, shut up the enunctories, partially at least, and in so far interfere with the only means of cure. Not a grain of quinine, of antipyrine, phenacetine, or any such drug, was given. An occasional laxative, with anodynes to a very moderate degree, were given in the beginning; morphia, and per rectum injections of bromide of sodium, were tried with the hope of lessening the vomiting. The laxatives were thought to be very useful; but the bromide of sodium injections and the hourly use of morphia were useless, and were discontinued after a short trial. I think if the fear of high temperature in various diseases could be lessened, in the minds of the profession at large, that much good would be done. I think that the benefit from its supposed reduction by the antipyretics is often illusory. In erysipelas, occurring after serious surgical operations, in my own practice and that of my colleagues, I have seen a temperature of 106° become normal, without the aid of any drug whatever, in twelve hours. Dr. Emerson's case, also reported to this Society at this meeting, adds to the testimony now accumulating, as to the uselessness of drugs to reduce temperature and eliminate the poison in pyæmia and septicæmia.

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A CASE OF METASTATIC ABSCESS OF THE BRAIN; OPERATION; DEATH.[1]

BY G. L. WALTON, M.D.,
Physician to the Neurological Department of the Massachusetts General Hospital.

T. F., thirty-five years of age, a brakeman, was first seen by me in consultation with Dr. Duff, of Charlestown. The history given by Dr. Duff was as follows: He was well up to last July. On the 22d of July he went to bed with pulmonary symptoms, remaining there two days. On the 28th he was in bed again, with symptoms of pneumonia of a fetid character. The convalescence was fair up to August 17th, when he came home reeling, and dropped upon the sofa unconscious (embolus). There was frothing of the mouth and twitching of the hands and feet. He had three or more of these attacks in the course of that day, unconsciousness lasting in the first one about twenty minutes. A numbness of the right arm supervened, which quickly passed away. He was treated with carbonate of ammonia, digitalis, brandy, and warmth to the feet and cold to the head. He had another attack at midnight. Examination of the urine proved negative. The next morning at five another seizure occurred. From all these attacks he recovered without loss of power or permanent loss of sensation. On the fourth day he had another attack, and within the following week three more. The history of all those attacks was the same with the exception of the last. In all except the last he had a peculiar sensation, which started at the ribs on the right. The patient described this as a tickling sensation. This rose to the shoulder, then spread down the arm to the hand, when he lost himself. Severe headache followed the last attack. After the first attack there was copious bloody expectoration. In the last the sensation went first down the leg, then up to the shoulder and down the right arm. Both legs and both arms twitched in all these attacks, but in some the twitching began in the right arm, and in all the right arm has been most affected. For the last two days there has been severe headache, principally on the left side.

The physical examination at this time showed a patient with considerable emaciation, of good intelligence, complaining of a dull headache, principally in the left temporal region. There was no loss of motion or sensation, no irregularity of pupils or reflexes — a normal tendon reflex on the left, an exaggerated reflex on the right — and no drawing of the face, or other sign of affection of the cranial nerves. Examination of the heart was negative.

That night an attack followed of more serious nature than any preceding. The right arm and right foot were attacked with violent convulsive movements without any loss of consciousness. A motor paralysis of the right arm followed, which lasted a few hours. The patient was then recommended to enter the hospital with a question of operation, the diagnosis of abscess being assured. He entered the hospital on September 2d in the service of Dr. M. H. Richardson. The pulse was at this time 52, full; the temperature 97.4°; and the mind clear. There was profuse sweating. The patient continued to complain of pain in the temporal and occipital regions, principally on the left. The pupils, which the day before were equal and moderately dilated, were now considerably contracted and reacted to light. The knee-jerk was very active on the right, with a tendency to ankle-clonus. On the left the reflex was normal. The movements of the right leg were somewhat impaired, and very decidedly ataxic. The sensation of the left leg was normal, as of the right. There was no absolute paralysis of any muscle or group of muscles in the legs. The movements of the right hand were decidedly ataxic. He could not button his shirt with this hand, nor touch his nose, excepting by fumbling. This difficulty was apparently in part through lack of coördination, and partly through numbness. That there was absolute loss of power was shown by the feeble grasp, although there was no complete paralysis of any muscle distinguished. No paralysis of the face was noticed at this time. There was a decided loss of tactile sensation over the right hand to the wrist. Although his mind is apparently clear and he answers questions with intelligence, his mental processes appear somewhat sluggish.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, October 19, 1892.

Examination of the lungs by the house-officer: The examination is difficult on account of pain in the head increased by movement. Respiration very superficial in the right lung; fine and coarse râles at the apex and in front under the clavicle. The rest of the lung is dull, with no evident respiratory murmur. A question of pleuritic effusion on account of flatness and absence of voice-sounds low down in the axillary line in this side. Examination of the left lung is negative.

Examination of the heart negative.

Urine normal, acid, 1,022, a trace of albumen, calcic oxalate, normal and abnormal blood, a few fatty renal cells, leucocytes.

An ice-bag applied to the head and hot water to the feet, and the patient put upon liquid diet. A sixtieth of a grain of sulphate of strychnia four times a day was given. In the afternoon eight grains of phenacetin, with fifteen grains of bromide. The patient rested quietly all night.

Operation was seriously considered at this time, but it was thought best by Dr. Richardson, Dr. Carter and myself to postpone interference until more urgent symptoms appeared. These symptoms appeared on the following day, in the afternoon, when vomiting began at about three o'clock with intense headache, described by the patient as if the bones were splitting, and sufficiently severe to cause him to cry out. His pulse dropped to thirty during this attack, and he was covered with profuse perspiration. A quarter of a grain of morphia subdued the pain, and his pulse rose to sixty. He was comfortable until nine that evening, when another similar attack occurred, with pain and vomiting. During the night he vomited three times, and complained of intense headache. Two injections of morphia, each an eighth of a grain, were required to stop the pain, whereas the night before eight grains of phenacetin sufficed.

There was obstinate constipation after, as well as before entrance to the hospital. During the night the patient was dull and apathetic. His four hourly temperature varied little from 97°. His pulse varied from 50 to 60, once only rising to 80. When I saw him the following morning, the pulse was 52. The patient was lethargic; the numbness in the right arm extended to the elbow; and the movements of the right arm were very weak and fumbling, he being hardly able to find his nose at all with his right hand. The right corner of the mouth drooped slightly, and when one of the fingers was inserted between the lips they were not so firmly compressed upon the right as upon the left. The wing of the nose was not elevated as well upon the right as upon the left; the patient could, however, whistle. There was no affection of the upper branches of the facial nerve. Dr. Cheney's examination of the fundus showed no optic neuritis. A consultation with Doctors Gannett, Cutler, and Conant was held, in which the question was considered whether the urgency of the symptoms did not demand immediate operation, Dr. Richardson being away. It was decided best to operate at once, and this was done by Dr. Conant, who was substituting at the time.

OPERATION (DR. CONANT).

The patient was shaved; the scalp scrubbed with green soap, permanganate of potash and oxalic acid. A corrosive poultice was applied of 1–1000. The fissure of Rolando was marked out, a point was chosen at about its middle, and a circular flap turned down, The hæmorrhage was arrested with forceps and sponges. The periosteum was retracted and a one-inch trephine applied. The bone was not very thick. There was no notable bleeding from the skull. The dura mater was found tense and bulging, dull in color, non-pulsating. There was a small hæmorrhagic spot in the dura mater. A circular incision was made at the lower segment of the opening; and upon raising the dura mater, the brain bulged out, was non-pulsating, and revealed distinct fluctuation. There were minute hæmorrhagic spots in the pia mater. There was no sign of meningitis. A fine aspirating needle was plunged directly down, without result. It was then withdrawn and passed more forward, with the result of withdrawing a suspicion of fluid. Pressed more deeply in the same region, aspiration was followed by free evacuation of puriform fluid, with broken-down brain-tissue and a little blood. There was about an ounce removed. The opening in the skull was enlarged downwards and forwards by the Rongeur forceps. The brain, which previously to the evacuation of the pus protuded freely and was non-pulsating, receded and pulsated normally. The pulse rose from 40 to 100. A portion of the gray matter was removed with the scissors to allow of more complete drainage. This was followed by a lively hæmorrhage, which required the ligation of a branch of the middle cerebral artery. The finger being introduced a large cavity was distinctly felt. The wound was packed with sterilized gauze, which led through the opening. The dura was then coapted around the gauze with two fine silk sutures and the skin flap coapted with interrupted silk sutures. The drainage was left at the posterior end of the incision. A sterilized absorbent dressing was applied. The patient after operation was in fair condition; pulse 90, strong; respiration good.

The operation lasted an hour and a half. After it the patient was given a sixth of a grain of morphia suppository. The pulse was strong and full, but slightly intermittent.

5.30, P. M.: The ice-bag has been kept to the head. Respiration 40, irregular. 6 P. M.: Inhalations of oxygen, five minutes in every twenty. 7.15, P. M.: Began to be very restless. Complains incessantly of feeling cold. An enema of brandy, warm milk, salt and laudanum. 8 P. M.: A subcutaneous injection of a sixth of a grain of morphia; five minutes later a sixtieth of a grain of atropia. 11.30, P. M.: Seemed to be fully conscious and would answer questions. One minim of croton oil. 11.45, P. M.: Vomited about a drachm.

September 4th. 12.30, A. M.: Respiration became very labored and superficial. The face is drawn, and the eyes show a tendency to roll upwards. A sixtieth of a grain of strychnia subcutaneously. 2 A. M.: Vomited two ounces. 2.15, A. M.: Respiration less labored. 3 A. M.: Enema of peptonized milk, brandy and Carnipeptones. 4.30, A. M.: Vomited three ounces. Condition improved. Respiration easier; color better. During the night slept about two hours in short naps. Was restless most of the time. 9 A. M.: Gradually losing ground. Intellect much less clear. Dressing changed; very little staining. Some free blood escaped in removing the superficial packing. The gauze drain was not touched. 10.45, A. M.: An enema of peptonized milk, brandy and Carni-peptones. 1 P. M.: An enema of Epsom salts, glycerine, aloes, turpentine and water, given high, was retained three-quarters of an hour and voided in bed, with a little fæcal matter. 2 P. M.: Seemed to rally for a short time. During the latter part of the afternoon the respirations became shallow and irregular, color much cyanosed, and strong odor to breath. Took no notice of anything. 7.10, P. M.: Nitro-glycerine, two minims subcutaneously. 7 P. M.: Enema repeated. Became comatose; sank slowly; died at 10.40, P. M.

During the time after operation, motion was confined to the left arm and leg. The reflexes at the knee were normal on both sides. The pulse full and strong to the end. No autopsy allowed. The finger introduced through the wound showed the abscess-cavity and another abscess higher and towards the median line from the wound, apparently situated near the ascending frontal convolution, the cavity the diameter of a robin's egg, and running from that downwards, inwards and backwards. The index finger could just reach the end of the cavity.

Examination by Dr. Whitney showed pus-cells and disintegrated brain-tissue in the substance evacuated at the operation.

The literature on the subject of operation for metastatic abscess in the brain is very meagre, this being, as far as I can ascertain, the first recorded case of successful diagnosis and evacuation of this variety of abscess. The operation has, however, been successfully performed in abscesses resulting from trauma, as well as from middle-ear disease, a result which renders operative procedure in metastatic abscess imperative where such a diagnosis has been arrived at. By far the most satisfactory treatise of this subject in its surgical bearing is that of von Bergmann,[2] from which I draw largely in the following *résumé*.

Probably a quarter to a half of all cerebral abscesses are due to extension of suppurative process from the skull, more especially resulting from middle-ear disease. Of the remainder, a large portion are due to trauma, leaving only a comparatively small number resulting from either tuberculosis or from metastatic processes. In a certain number of these cases the pus-formation in the brain is a part of a general process, as in pyæmia, there being a similar deposit in the joints, the lungs, the liver and the kidneys. In the latter case the cerebral lesion forms so small a part of the general clinical picture as to render operative procedure hardly worthy of consideration. In the case of tuberculous abscess the promise is hardly greater. As regards the metastatic abscesses, with which we have here immediately to do, these were first demonstrated by Virchow as resulting from gangrene of the lung. Biermer demonstrated similar trouble after bronchiectasis, and Näther[3] reported cases as following pulmonary abscess, gangrene, impaction, pneumonia, wound of the lung with exudative pleurisy, and empyema. The latter author found these eight cases by autopsy among one hundred cases of pulmonary gangrene, fetid bronchitis and bronchiectasis.

The chief difficulties in the way of operating for metastatic abscesses are, in the first place, the difficulty of diagnosis and localization; in the second place, the probability that such abscesses are multiple (von Bergmann).

Näther found in only one of the eight cases above mentioned a solitary abscess. The fact, however, that we may hope to find such a condition in one out of eight cases renders the operation not only justifiable but imperative when we consider the absolutely hopeless prognosis of abscess of the brain when treated expectantly or in any way other than by operative procedure. The hope that an abscess may become encapsulated, and hence become indefinitely latent, or that it may undergo cheesy degeneration and become innocuous, is practically *nil*, the tendency of abscess of the brain being in all cases either eventually to burst into the ventricle or into the vault, or to set up a diffuse meningitis. Even where the abscess has become encapsulated the tendency, as von Bergmann states, is to eventually break into the ventricle none the less. The futility of the hope that spontaneous evacuation may occur, either through the skull or into the ear, nose or other cavity, has been also dwelt upon by the same author. We have here, then, every reason for resorting to operation when the disease has become recognized and its localization made evident as being within the reach of the knife. We can offer, of course, very little encouragement in a case of this sort as regards the eventual result. Without operative interference, however, we can offer absolutely no encouragement, the fatal prognosis being practically certain.

As regards the diagnosis of abscess, the most important point is that of etiology. The number of idiopathic abscesses reported have been so greatly narrowed that it may be considered that the authentic cases are reduced almost to nothing, and even in those cases which are apparently idiopathic a more or less remote injury to the skull may be probably traced as the cause, if not one of the other sources already mentioned. Von Bergmann was sufficiently assured upon this point to decline to operate in a case referred to him for operation by a distinguished neurologist, simply upon the ground of lack of etiology, an opinion which proved to be justified by the autopsy, which showed a diffuse inflammation, inaccessible to the knife.

In our case the etiology was evident. It is true that tumor or other disorder might chance to arise at this time and give somewhat similar symptoms. The burden of proof, however, would rest upon any other diagnosis than that of abscess. The diagnosis rests principally between abscess and new growth. In favor of abscess were the sub-normal temperature, the absence of choked disc, which, to be sure, occurs exceptionally in abscess, but far less frequently than in tumor. Certain authors have denied that subnormal temperature is characteristic of abscess, but it seems to me that a sufficient number of cases have been recorded to justify the opinion that this is an extremely characteristic symptom. The presence of chill and marked variations of temperature would have been even more diagnostic. These, however, failed completely in our case, the temperature running a more or less even course varying from subnormal to normal (from 97° to 98.5°), although it was taken every four hours to show variations had they occurred. The factor in diagnosis upon which almost absolute reliance was placed was the etiology, and the result certainly proved the wisdom of being thus guided. With regard to the size of the abscess, it could not be, of course, determined accurately whether a large or small one existed before operation. The chances were, however, in favor of a fairly large one, inasmuch as an abscess of this sort is apt to have grown to considerable dimensions before any localizing symptoms are produced, even though it may be directly in or very near the motor region. I remember one case in which the autopsy, after a case of gangrene of the lung, revealed an abscess occupying nearly the whole of the white matter of one hemisphere, in which absolutely no cerebral symptoms had appeared, the patient dying of the pulmonary affection.

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[2] Archiv. f. klin. Chirurgie, 1887, xxxiv, p. 759.

[3] Deutsch. Archiv. f. klin. Med., bd. 34, s. 169.

Senator[4] has reported a case as similar to ours as any with which I am familiar. In that case lung trouble had existed for six months previously, with dulness of the right upper lobe and copious expectoration with evening fever. There was a paralysis of the right arm ascending from the fingers to the upper arm; five days later an epileptiform attack, beginning in the right hand and spreading to the arm, without loss of consciousness; on the eighth day paresis of the right lower facial branches; on the ninth day, of the leg, especially in the foot; on the thirteenth day marked ataxic aphasia; and on the seventeenth, death. Autopsy revealed several cavities in the lung and numerous peribronchitic foci of inflammation. In the left hemisphere there was an abscess containing fifty grammes of pus, without any marked capsule. This nearly broke through the cortex. The convolutions from the fissure of Rolando forward into the frontal region were flattened and of a greenish discoloration, especially in the posterior part of the third frontal lobe. Von Bergmann in quoting this case states that operation was omitted on account of the rarity of single abscesses of this nature. The autopsy, however, showed that a solitary abscess really existed in this case, although the post-mortem results showed that the operation would have been futile on account of the still-existing pulmonary lesion.

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REMOVAL OF THE STAPES IN CHRONIC CATARRHAL OTITIS MEDIA AND IN CHRONIC SUPPURATIVE OTITIS MEDIA.[1]

BY FREDERICK L. JACK, M.D.,
Assistant Aural Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Instructor in Otology, Boston Polyclinic, etc.

(Concluded from No. 19, page 447.)

Case V. Male, about forty years old. He gave a history of having had chronic suppurative inflammation of the right middle ear for twenty-five years. He had been very hard of hearing in the ear ever since that time, and said he considered the ear "dead." Complained of a disagreeable pressure on that side of the head. Examination of the ear showed extensive destruction of the membrana tympani. Malleus retracted and firmly adherent to the inner wall of the middle ear. The long process of the incus was not visible. Head of the stapes covered with a thick cicatricial membrane. Hearing very defective.

For H., $\frac{0}{60}$, contact; whispered voice not heard; ordinary voice, one foot; König's rods, 35,000; tuning-fork by air, 5″, bone, D. plus.

Operation, June 20, 1892. A triangular opening was made in the membrane over the stapes. A very slender knife was carried around the head, and the tendon of the muscle divided. Owing to the prominence of the head, it was grasped with small forceps and all but about one-half of the foot-plate was removed. This piece remained in the fenestra and was easily felt afterwards with a probe. This being the state of affairs, it was a surprise on the morning after the operation to find a marked improvement in all but one of the tests of hearing previously tried.

H., $\frac{1}{60}$; loud whisper, two feet; ordinary voice, nine feet; loud voice, 20 feet; König's rods, 30,000, a loss of 5,000.

Four days after returning home, his hearing remained the same and the pressure previously complained of in the head had disappeared. He volunteered the story that before the operation his wife had complained very much of the squeaking made by a pair of new slippers. He failed to hear the noise at that time, but on his return home he, also, found them too noisy.

July 8, 1892. Said he had thrown the new slippers away. Hearing remained good and practically the same as when last tested. The ear was perfectly healed. The membrana tympani had somewhat contracted from the fenestra ovalis and was adherent to the inner bony wall of the middle ear. The anterior segment of the membrane was somewhat more sunken than when seen shortly after operation. This condition made no apparent difference in the power of hearing and did not tend to produce the pressure in the head complained of before.

Case VI. Female, twenty years of age. Deafness due to the effects of a chronic suppurative inflammation. No discharge from either ear for two years. Said she could not hear anything in the left ear. Everything had ulcerated away except the stapes, the head of which was made out through a somewhat thick cicatrix. Hearing in the left ear as follows:

Whispered voice, not heard; ordinary voice, not heard: loud voice, one foot; H. A. S., $\frac{0}{60}$; tuning-fork, by air, not heard; by bone, in the better hearing ear.

Operation, June 11, 1892. Head of stapes loosened and stapedius muscle divided. A hook readily brought away the bone. June 20, 1892. No pain or vertigo, hearing greatly improved.

Whispered voice, one foot; ordinary voice, 15 feet; loud voice, 20 plus; tuning-fork, air, two inches; bone, still heard in better hearing ear; H. A. S., $\frac{1}{60}$.

One month after the operation, hearing remained as when last tested. Ear perfectly dry with no crusts. Said she could now carry on her work of stenography without trouble.

Case VII. A boy, eighteen years of age. Patient was first seen on June 19th, for deafness in the right ear. Upon examination the right drum-membrane was found partially destroyed and the remaining portion was calcified. Thick tissue over the fenestra ovalis. Ear had ceased discharging some years ago and the hearing had been gradually growing worse.

Hearing, H., $\frac{c}{60}$; König's rods, 35,000; ordinary voice, nine feet; tuning-fork, R. plus by bone.

Operation, June 20, 1892. Head of stapes found with difficulty after cutting almost calcereous bands of tissue. The bone was very firmly held in place. Crura were found so firmly fixed in the window that only portions could be removed. The head of the bone came away readily. The pulse was noticed to be slower upon moving the stapes.

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[1] A paper read before the American Otological Society, July 19, 1892, with a few subsequent additions.

[4] Berl. klin. Woch., 1879, Nos. 4–6.

June 21, 1892. No pain complained of. Hearing much improved. Tests as follows:

H. A. D., $\frac{8}{60}$: König's rods, 40,000; whispered voice, four feet; ordinary voice, 30 feet plus.

Only slight redness observed at seat of operation.

Case VIII. Girl, seventeen years of age. Deafness in the right ear due to the effect of a chronic suppurative inflammation. A large perforation was found in the posterior half of the membrana tympani, through which the head of the stapes was distinctly seen. Complained of a buzzing tinnitus.

Hearing for whispered voice, four feet; ordinary voice, 20 feet; H. A. D., $\frac{5}{12}$; König's rods, 35,000.

Operation, June 21, 1892. The head of the bone was thoroughly separated from adhesions and easily removed by means of a small hook inserted behind the head. No bleeding. Pulse was perceptibly slower while moving the stapes. June 22d, no symptoms.

Hearing, H., $\frac{13}{60}$; loud whisper, 15 feet; ordinary voice, 25 feet plus; König's rods, 30,000.

June 29th, hearing remained good and tinnitus nearly gone. No moisture in the ear. Improvement in hearing noticed by members of her family and friends.

Seventeen days after the operation, ear was perfectly healed. Less tinnitus. Hearing the same as when last tested, except for the watch. Here there was apparently a loss of ten inches.

Case IX. Male, thirty-five years old. Deafness in the left ear since boyhood, the effects of a chronic suppurative inflammation, following an attack of scarlet fever. A large perforation was found in the posterior upper quadrant of the drum-membrane. Head of stapes easily seen and removed in the manner previously described. Hearing before the operation:

H., $\frac{1}{60}$; whispered voice not heard; ordinary voice, two feet; loud voice, 12 feet.

On the morning after the operation, the patient complained of slight dizziness when sitting up in bed. Hearing for the voice improved.

June 27th, no dizziness. Hearing better than immediately after the operation; no signs of inflammatory reaction in the ear. Can now hear:

Whispered voice, one foot; ordinary voice, 25 feet plus; tuning-fork by bone, D. plus; tuning-fork, air, 35″; H., $\frac{c}{60}$; König's rods, 30,000.

He was last seen nine days after the operation and was found to hear as well as when previously tested.

Case X. J. M., nineteen years old. She had been troubled with chronic suppurative inflammation off and on for fifteen years and had had trouble in hearing for two years. The posterior segment of the membrana tympani had ulcerated away. The round window and the long process of the incus were easily seen.

Hearing for H., $\frac{4}{60}$; whispered voice, two feet; ordinary voice, six feet; tuning-fork, bone, D. plus; König's rods, 30,000.

Operation, June 22, 1892. Stapedius muscle was first cut and then the incudo-stapedial joint. Some trouble was experienced in removing the stapes from behind the long process of the incus. The incus was found so loose that in passing a hook above the head to remove it, it fell from its position to the bottom of the middle ear behind the drum-membrane and could not be removed with any instrument at hand. It was finally removed by syringing. On the following day she complained of some dizziness. Hearing better, except for watch, which could not be heard on contact.

Whispered voice, three feet; ordinary voice, nine feet; loud voice, 25 feet; tuning-fork, vertex, S. plus, T. D. plus.

July 1st, slight dizziness; hearing the same; slight moisture in the ear. In two weeks the wound was found perfectly healed. Hearing remained good.

Case XI. Female, thirty-five years of age. This case is one of the most interesting in the series. She gave a history of sudden loss of hearing in the left ear, six months before, accompanied with tinnitus and vertigo. Membrana tympani somewhat thickened. The hearing of this ear was very carefully tested by Dr. Bryant and others, and found to be absolutely gone for all sounds, except a very loud shout through a conversation tube. Tuning-fork by bone heard only in the right ear. The operation for removal of the stapes was performed on the morning of June 23, 1892. In the evening, much to our surprise, she could hear the voice in the ear, but the hearing was not carefully tested until the next morning, when it was found as follows:

H. A. S., $\frac{c}{60}$, lightly; whispered voice, seven feet; ordinary voice, 10 feet; loud voice, 20 feet; tuning-fork, vertex and T., S., plus, air, T., 15″; König's rods, 45,000.

The patient was tested by the same gentlemen who saw her before the operation, with results practically agreeing. She was entirely free from dizziness and tinnitus.

July 8th, fifteen days after the operation, the hearing remained good. Tuning-fork by bone now heard louder in the ear which was operated upon. Has had no attacks of dizziness and tinnitus. Wound perfectly healed.

Case XII. F. D., twenty years old. For some years her hearing, in spite of treatment for the nose, as well as the ears, had been growing slowly worse. It was the result of chronic non-suppurative inflammation of both middle ears. The left was the worse, — ringing tinnitus at times in the left ear. No history of otorrhœa, but a small cicatrix was observed directly over the head of the stapes on the left side. Her hearing in the right ear was fair, and in the left ear as follows:

Ordinary voice, about one foot; loud voice, four feet; H. A. S., $\frac{2}{60}$; tuning-fork, air, 15″, through teeth in left ear; König's rods, 30,000.

Operation, June 26, 1892. Triangular cut through the cicatrix, head of stapes separated from all attachments and the bone removed in one piece from the fenestra ovalis. No change in the pulse-rate was noticed.

June 28th, complained of slight pain in the ear. Seat of operation covered with a dry clot of blood. Was somewhat dizzy on moving the head quickly. Temperature night before, one degree higher than normal. Said she had noticed a great improvement in hearing. It was found to be as follows:

Low whispered voice, one foot; ordinary voice, 10 feet; loud voice, 18 feet plus.

Tuning-fork by bone heard louder in right ear; just the reverse was found before the operation. H. heard only on contact; König's rods, 30,000.

July 1st, still a little dizzy. Hearing the same. Ear a little tender to touch and secreting slightly a thin bloody fluid.

Ten days after the operation the hearing for the voice was found much better than when last tested. Could now hear whispered voice, 12 feet; ordinary voice, 30 feet. Other tests about the same. No vertigo or tinnitus.

July 10th, two weeks after the operation. Dry clot of blood covering seat of wound. A little tinnitus at times. Said that hearing had improved greatly since the operation. On returning home, could hear sounds of teams on the road much better than she had ever heard them before. Friends and relatives all noticed great change.

H., $\frac{c}{60}$; tuning-fork, air, 50″, bone, S. plus; whispered voice, 18 feet.

Since the publication of this report the right ear of Case XII has been operated on. The results in this case show conclusively the great value of the procedure. The patient returned to the Infirmary in September of her own accord and asked for the operation on the right ear. This was done on September 27, 1892.

Results as follows: Before, whispered voice, six inches; moderate voice, 10 feet; watch $\frac{c}{60}$. After, whispered voice, six feet; moderate voice, 30 feet; watch $\frac{c}{60}$.

The peculiar value of this case as evidence lies in the fact that there is no stapes in either ear. In each instance immediate great improvement followed the removal. Further, the conditions in the two ears were different, the left having had a suppurative inflammation and the right a chronic catarrh.

CASE XIII. A. C., sixteen years old. Increasing deafness for two years. Worse in the left. Diagnosis, otitis media insidiosa (sclerosis).

H. A. S., $\frac{c}{60}$, lightly; tuning-fork, air, D. plus, vertex and teeth S. plus; König's rods, 35,000; whispered voice, two feet; ordinary voice, four feet; loud voice, 10 feet.

Left drum-head quite transparent. Long process of incus made out with difficulty.

Operation, June 27, 1892. Triangular opening made through the drum. Long process of incus found firmly adherent to the inner wall. On being released by introducing a bent knife behind the process, it sprang outwards and backwards, probably by the action of the stapedius muscle, which, as we shall see, was a powerful one. The operation might have stopped here and been followed by marked improvement in hearing. The stapedius muscle was next separated, as was supposed, and the articulation with the incus divided. A small hook brought the stapes from the oval window, when the stapedius muscle immediately pulled it out of sight. This accident occasioned no end of trouble and portions of the bone were left in the ear as less likely to cause subsequent trouble than further manipulations. A little dizziness was experienced after the operation, but for a few hours only. A slight exudation was noticed for a few days. The hearing was greatly improved.

Whispered voice, seven feet; ordinary voice, 12 feet; loud voice, 20 feet; tuning-fork by bone in the left ear; H. A. S., $\frac{c}{60}$; König's rods, 45,000.

July 5th, eight days after the operation, the hearing was as follows:

Whispered voice, five feet; ordinary voice, 15 feet; tuning-fork, bone, S. plus; H., $\frac{2}{60}$; König's rods, 50,000.

CASE XIV. A lady forty-five years old. She had been very deaf for twenty years, the result of otitis media insidiosa (sclerosis). The membrana tympani looked fairly well, though somewhat dull in color.

Whispered voice, not heard; ordinary voice, six inches; loud voice, five feet; ordinary voice, only five feet through large ear trumpet; tuning-fork by bone and air in the right; watch not heard in close contact; König's rods, 20,000.

Operation June 28, 1892. Small triangular opening made in the drum-membrane. Stapedius muscle was first divided, and then the incudo-stapedial joint. A few adhesions were also separated from the head of the bone. The stapes was removed in the usual way. Examination showed the absence of foot-plate. No attempt was made however to remove it, for a case already reported was in mind, where, with a portion of the foot-plate remaining, marked improvement in hearing resulted. Patient was up and dressed the next morning, having experienced no dizziness or pain. Hearing considerably improved.

Whispered voice, one foot; ordinary voice, seven feet; loud voice, 20 feet; tuning-fork, vertex, S. plus; teeth, D. plus; König's rods, 40,000; H., $\frac{0}{60}$, contact.

Said she could hear voices much clearer than before. No sign of inflammation in the ear. Nine days after the operation the hearing was found the same as when last tested, except for tuning-fork and rods. Tuning-fork by bone was now heard alike in both ears. König's rods only 30,000. Ear perfectly dry.

CASE XV. Female. Effects of suppurative inflammation. In this case the stapes was not found. What was supposed to be the long process of the incus, proved to be the displaced handle of the malleus. The end was somewhat bifurcated. The bone was freed from its attachments and removed, after which careful search with the probe failed to discover any trace of the incus or stapes. Slight dizziness was complained of for twenty-four hours.

Nine days after the operation, by careful tests the hearing was found improved six inches for the watch, and a few feet for the ordinary voice. The slight improvement was probably due to the loosening of the tissues about the oval window. Slight discharge from the ear, but less than three days before.

CASE XVI. Miss K. M., aged forty-seven. She had been gradually growing deaf for five years, the result of a progressive non-suppurative inflammation of both middle ears. Both drum-membranes were somewhat thin and lacked lustre. The incudo-stapedial joint seen in both ears.

In the right ear she heard loud voice only at three feet; watch not heard at all; tuning-fork, air, about 3″, bone, D. plus; König's rods, 30,000.

The usual operation was performed on June 30, 1892. After removing the stapes the incus seemed to drop down from the attic and, being very loose, was removed. On the next day hearing for voice had wonderfully improved.

Whispered voice, six feet; ordinary voice, 19 feet; loud voice, 30 feet; tuning-fork by bone heard equally well in both ears; by air, in the right, 10″; H. D., $\frac{0}{60}$, contact; König's rods, 35,000.

No inflammatory reaction in the ear. Said she was made dizzy by lying on the right side. In a week the dizziness had disappeared and hearing for the voice seemed to have improved still more.

While recognizing the possibility of error in all human calculations, the results obtained in these cases are of such a nature as to lead one to be very hopeful of the future possibilities of the operation. Any fear of danger connected with it is obviated by the fact, that even in two of the above mentioned cases where there was considerable suppuration at the time of operating, there were absolutely no bad results, but on the contrary, one of the ears healed entirely within four or five days, and the other was greatly improved. In three cases, the patients complained of vertigo, which, however, entirely disappeared within four or five days. In general, the cases showed very little tendency toward inflammatory reaction, and the ears were, after a few days, entirely dry.

FIG.

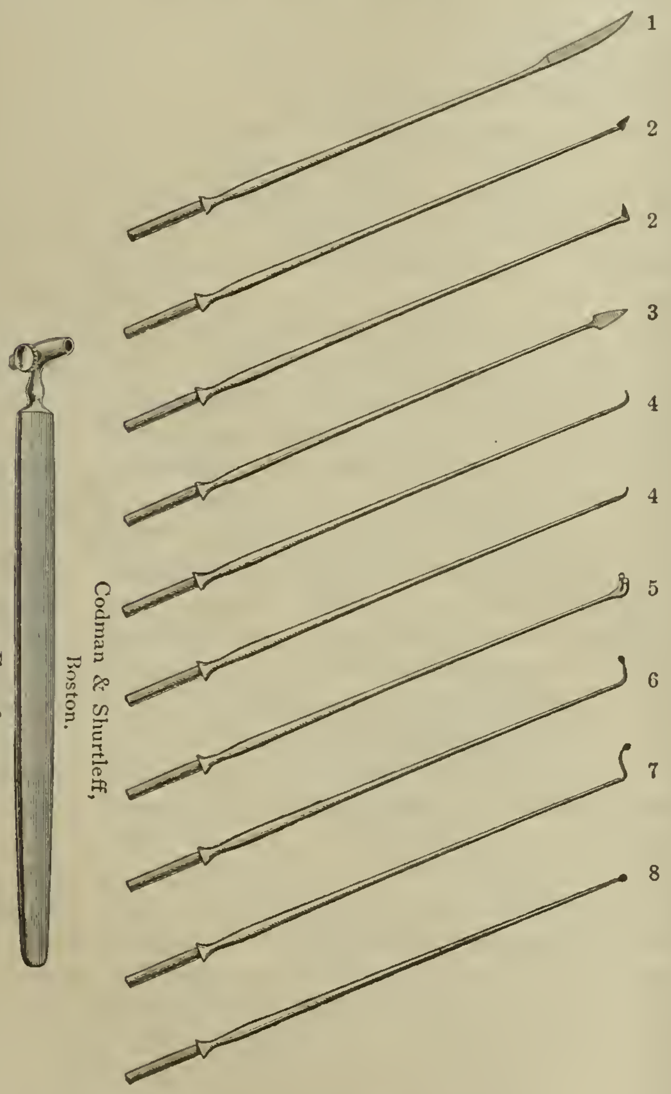

FIG. 1. Knife for tenotomy of the stapedius muscle.
FIG. 2. Four angular knives, one right and three obtuse, for dividing the incudo-stapedial articulation and adhesions around the long process of the incus.
FIG. 3. Knives for incision of the drum membrane, three sizes, the smaller of which can be used for dividing adhesions around the head of the stapes.
FIG. 4. Stapes hooks, three sizes, to extract the stapes by passing behind the head between the crura.
FIG. 5. Straight incus hook with two blunt tips, for removal of the incus.
FIG. 6. Incus or malleus hook (bullet tipped).
FIG. 7. Two incus hooks, a right and a left (bullet-tipped).
FIG. 8. Probe (bullet tipped).
FIG. 9. Three adjustable handles. Aseptic.

Many of the cases also have been seen since writing this paper. The hearing power in all is as good as when reported and in some a still further improvement has been noticed.

The effect of the operation on the hearing, as tested by the watch, in some was not marked in either way, indicating in some cases a slight gain, in others, a slight loss. No attempt is made to explain this but the peculiarity if sought for among deaf persons is frequently observed.

The test by König's rods met with a similar result. In one of the above cases a curious fact was brought to light. During the bone test with the tuning-fork, before the operation, the patient entirely failed to hear it in the worst ear, but on a repetition of the test after the operation, she heard it better in the ear operated on than in the other.

Many of the cases were tested, both before and after the operation, by others than myself, with nearly corresponding results.

There still remains to be mentioned the one result of this operation which gives it its importance, and that is, the very marked improvement in hearing the human voice which is thereby obtained. If persons who have heretofore heard only with difficulty, can be made to hear with ease, by treatment unattended with danger, the operation as above described which has accomplished this result, is certainly worth consideration. As to the reason why this effect is produced, I have no theory to offer other than the simple supposition that it is by the removal of a mechanical obstruction to the sound-waves.

The results obtained are strangely at variance with the statement of most authors on diseases of the ear, that expulsion of the foot-plate of the stapes destroys the power of hearing.

Advances in aural surgery in the last few years have been gradually leading up to this step and now this last advance opens up a new field and seems to offer a more encouraging outlook for permanent relief to the deaf than any operation heretofore done.

NOTE.—A more complete set of instruments for the operation, the cuts of which have only just been finished, is shown in the preceding column.

The knives and probe are old, but the others, so far as known, are new. Although seemingly a good many instruments, practically there will not be found too many.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

THE THERAPEUTIC EMPLOYMENT OF ANTITOXINES IN TETANUS.

THE deductions which are drawn from a study of immunity in animals has given rise to the practical application of these observations to the treatment of tetanus. Tizzoni and Centanni have isolated from the serum of immunified animals the anti-tetanus principle, and Tizzoni claims a successful result in the treatment of tetanus. Schwarz[1] records a case of cure from tetanus in the human being by the use of tetanus antitoxine. Finotti, in the surgical clinic of Nicoladoni, Innsbruck, has recorded another case of cure of tetanus after twenty-eight injections.[2]

DEATH FROM COCAINE.

Richardiere records an accidental death from this drug, and states that he has made autopsies in eleven cases in which death has resulted from the injection of cocaine.[3] In his case death followed the injection of half an ounce of a one and one-half per cent. solution of cocaine into the tunica vaginalis testis, preparatory to the injection of iodine for the cure of hydrocele.

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[1] Centralblatt f. Bakt. u. Parisitenkunde, Bd. x, No. 24.
[2] Medical News, March 19, 1892.
[3] Medical News, April 2, 1892.

The solution of cocaine was withdrawn after less than a minute and the iodine injected. In a little while the patient returned, complained of great weakness, had clonic and then tetanic convulsions, became comatose, and died with cardiac syncope.

At the autopsy there was found general congestion of the meninges and lungs, mitral insufficiency, and alcoholic lesions in the viscera. The tunica vaginalis did not communicate with the peritoneal cavity.

SURGERY OF THE TONGUE.

In a paper contributed to the American Surgical Association, Dandridge[4] comes to the following conclusions:

(1) Sufficient experience has been accumulated to show that the removal of cancer of the tongue prolongs life and adds to the comfort of the patient and farther affords a reasonable hope of a permanent cure.

(2) All operations should be preceded by an effort to secure thorough disinfection of the mouth and teeth.

(3) In the treatment of continued ulcers and sores on the tongue caustics are to be avoided, and all sources of irritation removed.

(4) Persistent sores on the tongue should be freely removed by knife or scissors if they resist treatment.

(5) When the disease is confined to the tongue, Whitehead's operation should be employed for its removal.

(6) In this operation the advantage of preliminary ligature of the lingual artery is not definitely settled, but the weight of authority is against its necessity.

(7) The advantage of leaving one-half the tongue in unilateral disease must be considered undetermined, but the weight of positive experience is in its favor. In splitting the tongue into lateral halves, Baker's method of tearing through the râphe should always be employed.

(8) A preliminary tracheotomy adds an unnecessary element of danger in the removal of the tongue in ordinary cases.

(9) When the floor of the mouth has become involved or the glands are enlarged Kocher's operation should be performed, omitting the spray and preliminary tracheotomy.

(10) Removal of the glands by a separate incision after the removal of the tongue must be considered insufficient.

(11) Volkmann's method still rests on individual experience. Its just value cannot be determined until it has been subjected to trial by a number of surgeons.

(12) Thorough and complete removal should be the aim of all operation, whether for limited or extensive disease.

(13) By whatever method the tongue is removed the patient should be up and out of bed at the earliest possible moment, and should be generously fed.

PARTIAL PNEUMONECTOMY FOR GANGRENE OF THE LUNG.

Delangeniere reports[5] a successful operation in a man of thirty years. In these cases the author urges as complete extirpation of the gangrenous area as possible. It is necessary in every instance to open the pleura freely, and to resect several ribs if free access cannot be secured otherwise.

INTESTINAL ANASTOMOSIS AND SUTURING.

Abbe[6] considers the different methods for accomplishing this purpose in an article in which he objects to the use of plates of bone, potato or catgut, and considers that they are foreign bodies and may cause obstruction, and leakage may occur. The few extra minutes required in suturing adds to the security against leakage and blocking. He considers that lateral anastomosis should be done by making incisions four inches in length in the sides of the adjacent bowel. The technique of simple suturing is thus described: Bring the two surfaces that it is proposed to unite well up in the wound, and surround them by small compresses of gauze, towels, or flat sponges wrung out of hot water. Have at hand half-a-dozen fine cambric needles threaded with the ordinary finest black embroidery silk that has been well boiled and kept in alcohol. Cut in lengths of not more than twenty-four inches, and tie with a single knot at the eye of the needle, with one end cut to within two inches. Apply two parallel rows of continuous Lembert sutures a quarter of an inch apart, and an inch longer than the proposed cut. Leave each thread with its needle attached at the end of its row. Now open the bowel by scissors, cutting a quarter of an inch from the sutures, both rows of which are to remain on one side of the cut. Make the bowel opening four inches long. Apply clamps temporarily to several bleeding points, pinching the entire cut edge without hesitation. Apply no ligatures. Treat the apposing bowel in the same manner. The clamps remaining *in situ*, the parts are quickly rinsed with water. Another silk suture is now started at one corner of the opening, and unites by a quick overhand the two cut edges lying next the first rows of sutures. The needle pierces both mucous and serous coats, and thus secures the bleeding vessels, from which the clamps are removed as the needles reach them. This suturing is then continued round each free edge in turn, and all bleeding points thus secured more quickly than by ligature. The serous surfaces around these buttonholes are then rapidly secured by a continuation of the sutures first applied, the same threads being used, the one nearest the cut edge first. The united parts are again rinsed with water and dropped into place.

His conclusions are as follows:

(1) That the attempt to simplify the technique of lateral anastomosis by bone plates and other devices has not improved it.

(2) That lateral anastomosis properly done is eminently the safest and best method of restoring the canal in most cases.

(3) That simple and thorough suturing with a fine silk continous suture, applied after the manner detailed, is most satisfactory.

(4) That in order to allow for the inevitable tendency to stenosis, an aperture four inches long should be made.

(5) That scarifying apposing surfaces is entirely unnecessary to quick and solid repair.

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[4] Annals of Surgery, August, 1892.

[5] La Semaine Méd., 1892, No. 19; American Journal of the Medical Sciences, September, 1892.

[6] Medical Record, New York, vol. xli, No. 14; American Journal of the Medical Sciences, vol. ciii, No. 6, June, 1892.

LEFT INGUINAL COLOTOMY.

Allingham records[7] fifty cases of left inguinal colotomy. He considers that for every reason this operation is superior to lumbar colotomy, except in a few selected cases. The author's method of performing this operation is as follows: An incision not more than two inches in length is made about one and one-half inches inside the left anterior superior spine of the ilium. The abdominal cavity is opened, and a sponge introduced to keep the intestines and omentum from prolapsing while the parietal peritoneum is stitched to the edges of the skin wound. A good loop of the sigmoid is then drawn out and a stitch put through the skin on one side, then through the mesentery, and tied to the end of the suture which has passed through the skin. When this is tightened, the peritoneum of the mesentery is brought in contact with the parietal peritoneum, and adhesion quickly takes place. The gut is then fixed by sutures passed through the peritoneal and muscular coats, to the margin of the skin wound. On the following day the gut is opened, or if there be no distention it may be left three or four days, according to the condition of the patient. In a week's time, if the walls of the divided gut be too prominent they may be cut off with scissors even with the skin.

The supplementary operation, as the author calls it, is done to prevent prolapse of the gut through the opening. In drawing the loop of the bowel through the incision it should be pulled taut both from above and below. At the end of a week all the gut outside of the body is clamped close to the skin with the author's spiked clamp, and the portion above cut away. The clamp is removed at the end of twenty-four hours. To prevent the passage of fæces beyond the opening, a good spur is necessary. If fæcal matter passes into the distal portion of the gut the result of the operation has been a fæcal fistula instead of an artificial anus, and the pain and irritation of the diseased bowel, due to the presence of fæces, is not relieved.

Of the fifty recorded cases, thirty-six were inguinal ordinary operations, and in fourteen the supplementary operation was done. In seventeen cases the mesentery was long (at least five inches); in twenty-five cases it was medium (two to three inches), and in eight it was short. Prolapse took place in seventeen cases; in five of these from the upper end alone, in six, from the lower end alone, and in six from both ends. In seven of the cases the loop was twisted when fixed to the inguinal incision, as was shown by the bowels operating from the lower of the two openings. It may be considered that if the patients live two weeks after operation they have recovered from the effects of the surgical interference *per se*. But two cases died within this time. In one of these the fatal result was due to the gut tearing away on account of excessive coughing. Peritonitis rapidly developed, and with a fatal result. The other case was one in which obstruction had lasted for five weeks, and the author thinks the lumbar operation would have been much better here. The bowel could then have been opened extra-peritoneally. As it was, much difficulty was experienced in bringing the distended bowel well into the small inguinal incision, and also in stitching the thinned walls to the skin. In consequence of vomiting, the small intestines were forced through the wound, tearing away the stitches.

HEPATIC ABSCESS.

In a paper representing a study of this condition, and based upon the analysis of 108 cases, Dabney[8] arrives at the following conclusions:

(1) That hepatic abscesses rarely occur as a result of injuries or diseases of the bones or other parts of the body, except those directly connected with the portal system of veins, or immediately adjacent to the liver.

(2) Ulceration of the bowels is a common cause of hepatic abscess, but neither the morbid changes nor the symptoms are those of simple dysentery. It is probable that in most cases, at least, when the hepatic abscess is due to dysentery the latter disease is amœbic in character.

(3) An hepatic abscess may appear in two weeks from the commencement of the dysenteric attack, but the usual time is from four to twelve weeks. It is impossible to say how long a time must elapse after an attack of dysentery before all danger of hepatic abscess is past.

(4) Abscesses originating in the bile-duct and those due to injuries of the liver itself, seem to be of comparatively rare occurrence. When due to injury, the abscess usually appears in a few days.

(5) Abscesses occurring in connection with general septicæmia or pyæmia are probably nearly always multiple in number and small in size, but in rather more than half of all other cases the abscess is single and comparatively large. Abscesses due to gall-stones, however, are usually multiple.

(6) Aspiration occasionally fails to reveal an hepatic abscess, because the needle may not enter it, or the contents of the abscess may be too thick to flow through the needle.

(7) There are no means of determining with certainty the presence or absence of adhesions in a given case; pain, tenderness, and œdema over the seat of the liver suggest the presence of adhesions, but are by no means certain proof of their existence. Even the up-and-down movement during respiration, of a needle inserted into the liver, is not a conclusive proof that adhesions do not exist, as was shown by a case recently under my care.

(8) Of the symptoms and signs of hepatic abscess, pain, tenderness and swelling in the hepatic region are by far the most important. Fever is present in a large proportion of cases, is intermittent in character, and except in pyæmic cases rarely rises above 102.5 or 103 degrees. Jaundice and ascites nearly always denote the presence of dense adhesions or gall-stones. Dyspnœa and cough are frequently present.

(9) It is doubtful whether absorption of the contents of an hepatic abscess ever occurs; bursting is of frequent occurrence, the most usual direction being into a bronchus or the pleural cavity. Under expectant treatment death occurs in a large proportion of cases before bursting.

(10) With respect to treatment, free incision and drainage give far better results than any other mode. The results of aspiration are rarely satisfactory. nor is aspiration itself entirely free from danger.

SURGERY OF THE GALL-BLADDER.

Abbe reports four cases of biliary obstruction which were subjected to operation, the patients all recovering.[9] The details are very interesting. All four of these cases were of obstructive disease, and were all progressing to a fatal end, but by an operation were restored to health.

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[7] British Medical Journal, May, 1892; American Journal of the Medical Sciences, September, 1892.

[8] American Journal of the American Sciences, August, 1892.

Gay [10] reports two cases of cholecystotomy. In one the operation was successful. In the other, firm adhesions existed everywhere, profuse hæmorrhage took place, and as the patient was failing the wound was packed with gauze, at the autopsy in ten days, a calculus the size of a hazel-nut was found in the common duct.

Richardson [10] reports six cholecystotomies for gall-stones, five of which made good recoveries; the sixth died from sepsis. In his paper much weight is placed on the history in making a diagnosis on gall-stones, while but little is attached to the physical examination. The incision recommended by Richardson starts a little to the left of the linea semilunaris, an inch from and parallel to the margin of the ribs, and carried across the fibres of the external oblique. The gall-bladder is stitched to the abdominal wall before being opened. Siphonage is occasionally made use of.

Cabot [11] reports two cases of operations on the gall-bladder. The gall-bladder was stitched to the abdominal wall. Both cases made a satisfactory recovery.

Mixter [11] reports a case of retention cyst of the gall-bladder. The cyst was stitched to the abdominal opening, and the fluid drawn off. A glass drainage-tube was inserted. The patient made a complete recovery.

Terrier,[12] in considering surgical operations upon the biliary ducts, arrives at the following conclusions:

(1) Surgical intervention when medical treatment has been ineffectual is indicated in the chronic cases of cholelithiasis, calculous tumors, hydrops and empyema of the gall-bladder, and for the temporary or permanent lesions of the cystic and choledic ducts.

(2) The operation is relatively harmless when every antiseptic and aseptic precaution is observed.

(3) Usually the surgeon should avoid doing a primary cholecystectomy, at least if not absolutely indicated, as in the case of malignant tumor of the gall-bladder.

(4) Ordinary cholecystotomy with the establishment of a cystocutaneous fistula is a harmless operation, which may advantageously replace primary cholecystotomy in the cases in which this is not indicated. Should the fistula persist beyond a reasonable time and if the obstruction in the biliary duct is not relieved, secondary cholecystotomy may be performed.

(5) The ideal cholecystotomy is preferable to all other operations when the walls of the bladder are not altered, and when the ducts are permeable. Under these conditions the operation is one attended with very little gravity.

(6) Cholecystenterostomy is indicated only in cases of irremediable occlusion of the choledic duct and in persistent fistulæ following ordinary cholecystotomy, when neither extirpation of the bladder nor cure of the fistula is possible.

(7) It is necessary in every instance to open the bladder, since external exploration is sufficient in most instances to enable one to accurately determine the condition present. Catheterization is a difficult and dangerous operation, rarely followed by beneficial results.

CATHETERIZATION OF THE BILIARY DUCTS.

Terrier and Dally [13] have formulated the following conclusions:

(1) In general the catheterization is easier under pathological conditions, especially when the ducts are dilated by a stoppage in the valves or at the distal end of the cystic canal.

(2) Nevertheless, in many cases, owing to the curvatures in the canal, the persistence of the valves or the opening of the duct upon the lateral wall of the sac, the catheterism is difficult.

(3) Often the difficulty is insurmountable, often there is none.

(4) Rules for the passage of the catheter are impossible, owing to the variations in the anatomical relations. The only way is to attempt the catheterism with a clear idea of the normal relations for a guide.

(5) Forced catheterism, even with a finger externally to direct the instrument, is difficult and in all cases dangerous.

(6) The treatment is not well enough understood as yet for its value to be appreciated.

(7) The instruments to be used are olive pointed bougies and Benique's catheters, with or without stylets. Liver catheters are of rare use.

(8) In all these operations strict antisepsis must be observed.

(To be continued.)

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

A. N. BLODGETT, M.D., SECRETARY.

Regular Meeting, Wednesday, October 19, 1892, Dr. E. G. Cutler in the chair.

Dr. G. L. Walton read a paper on

A CASE OF CEREBRAL ABSCESS RESULTING FROM PNEUMONIA; TREPHINING; EVACUATION; DEATH.[1]

Dr. Morton Prince: There is very little for me to say regarding the case beyond congratulating the reader upon his successful diagnosis. Metastatic abscess of the brain must be very rare indeed. Personally I have never seen a case; but when such cases occur, I agree with the reader that there can be no question of the desirability of operation. The prognosis, if the case is left to itself, is certainly fatal, and the only possible chance that we can give the patient would be to operate; and if that chance is only one out of a hundred, I think it is our duty to take it.

As the reader stated, abscesses due to trauma and extension of inflammation from different parts of the cranium are comparatively common; and a good many have been operated on with success, especially when the abscess was due to extension of ear disease. Under such circumstances the lives of a number of persons have been saved, and in cases of this kind described by the reader it would seem that our duty should also be to operate. But, as the reader says, the abscess being only part of a general metastatic process or pyæmia, the chances of recovery are still further reduced from this cause; still I think we should always take it. The fact that the reader was able to localize the abscess as well as to diagnosticate it shows what can be done in the way of neurology and surgery.

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[9] New York Medical Journal, vol. lv, No. 5; American Journal of the Medical Sciences, October, 1892.

[10] Boston Medical and Surgical Journal, 1892, No. 17; American Journal of the Medical Sciences, October, 1892.

[11] Boston Medical and Surgical Journal, 1892, No. 17; American Journal of the Medical Sciences, September, 1892.

[12] La Semaine Med., 1892, No. 19; American Journal of the Medical Sciences, September, 1892.

[13] Revue de Chirurg., 12e annee, No. 2; American Journal of the Medical Sciences, vol. civ, No. 2, July, 1892.

[1] See page 473 of the Journal.

Dr. S. G. Webber: This is an interesting subject, and it seems to me that there is a possibility that in the future more may be done than in the past. Brain surgery is a comparatively recent addition to our means of helping patients. The whole subject of cerebral localization is decidedly modern. Broca published his first communication in regard to the localization of speech centres, I think, about thirty years ago when I was a student, and the whole thing has come up since then: so that I think we may look forward in the future to being more successful than we are now, and such cases as Dr. Walton has reported will help towards solving questions which still remained to be solved. The unsuccessful cases teach us as certainly as the successful ones, sometimes even more so.

As I understand it, there were two abscesses here only one of which was reached at the operation; and, of course, that made the case even more hopeless than if there had been the one with lung complication. It seems to me that, in deciding the question of operating, there are two parties to take into account. We should consider what doctors will think, what influence the operation will have upon the medical profession in advancing the science. There is no question now that operations upon the brain are proper and ought to be performed. We have also to take into account the view which laymen will take of the operation; and if the larger proportion of cases prove fatal, and are unsuccessful, the laity will be less inclined to allow operations. So I think that for a while a certain amount of caution should be used until cerebral surgery is more fully established. I cannot say, of course, that Dr. Walton did not use sufficient caution. I am speaking in general terms in regard to operations upon the brain. I think there is a tendency among some physicians to operate hastily in cases where it is quite evident that it will do no good. In such cases I think it would be better not to operate for the reason, as I have said, that a large number of unsuccessful operations coming together would prejudice the laity against this class of operations, and so would rather retard advancement. The favorable cases would be less likely to be operated upon on account of the objection made by friends. I do not mean to apply that to this case. Each case has got to be decided by itself, only it occurred to me that that perhaps ought to be taken into account. I congratulate Dr. Walton on his success in the diagnosis of the locality of the lesion. I did not hear the whole of the paper. I do not know what the symptoms were; but certainly he was very successful in finding the abscess.

Dr. J. J. Putnam: I have talked with Dr. Walton about the case once or twice, and have seen it once. We have been long looking for abscesses that might be operated on at the Massachusetts General Hospital, and I am glad at last Dr. Walton found one and localized it successfully and made the diagnosis accurately. I take it that the metastatic abscesses are harder to deal with, or less satisfactory to deal with, for the reason they are multiple, as I believe Dr. Walton said. They are occasionally single; but in the greater number of cases multiple. My attention has been called to this part of the subject recently, because I have been interested in a case of encephalitis leading to abscess, the symptoms following influenza. There, although the symptoms sometimes have been sharply localized, the lesions have usually been diffuse and quite widespread or else multiple.

Cases of abscess are especially confusing because of the long time that may elapse between infection and symptoms. In cases where acute fever has occurred, it might be different. Under certain circumstances the interval seems to be long and the source of the infection not easily defined always. I saw some years ago a patient whom I advised to enter the hospital, suffering at that time with intense headache and convulsions and seemed to have a certain degree of localizing character, but which proved on more careful study to be at times bilateral and changing in character and sometimes general. She went into the hospital and improved to a certain extent, except that her eyesight, which was impaired by neuritis, failed, and she became practically if not wholly blind. On leaving the hospital some months afterwards, she was suddenly attacked with some symptoms for which I was called to see her. I found her when I arrived better, having had a sudden discharge of fetid pus from the nose and mouth; and after that she had been very much relieved. The stench was described as intensely powerful and disagreeable, and it seemed more probable that it had been connected in some way with the ethmoid bone. She had later a second gush of pus in this way and died. Unfortunately we had no examination.

Dr. Mixter: I should like to say something on the surgical side of the question of cerebral abscess; and I will say the cases I have had have been mostly those that have arisen from inflammation in the middle ear and extending either to the brain or to the meninges, and in two of these cases that I have operated on it was supposed that an abscess would be found in some definite position. In neither of the cases were we successful in saving the patient. In one case it is possible that an opening in a different position might have evacuated the pus which was at that time I am quite sure in a sac formed in an enclosed place shut off from the rest of the surface of the brain and between the dura and the pia. The opening was not made at that point, and the pus was not found until autopsy. In that case the perforation was through the membrani tympani, and anterior to the position where it was supposed to lie.

In regard to the operative interference in these cases, it should be borne in mind, I think, that although it is very easy to open the skull and to open the dura — and if we find pus at that point we can evacuate it, or if it lies not too deeply in the brain and can be found by an exploring-needle, that the abscess-cavity may be drained — it must be remembered that the operation is not one which is devoid of danger, and which in certain cases presents most unpleasant features. In one case where there was supposed to be an abscess a large piece of the skull having been removed and the dura opened, the brain was found to be pulseless; and without wounding the pia at all, the brain was pushed up into the opening; the pia split from the pressure within, and the brain actually rolled out through the opening in the skull. The pressure could not be relieved. No abscess was found; and — I think Dr. Putnam will remember that case — the exploring-needle was passed in several directions. The patient lived two or three days. In that case, before death there was an enormous sloughing mass of brain-tissue, which was something like two or three inches long and an inch and a half wide and at least an inch above the surface of the skull. This cranial pressure is one of the important factors in all of these operations on the brain; and it must be remembered that this is present in so much more marked degree in cases where there is an inflammatory process than in the case of tumors or cysts. In case the pressure is not very great, it is not only possible but advisable to remove a large amount of the skull in the neighborhood, if the seat of the trouble is not discovered by the first small opening; and this can be done without danger in case the pressure I speak of is not present; and in cases of hæmorrhage that I think is especially true; and there is no reason to stop after the trephine has been applied once or twice, but an enormous amount of bone may be removed, I think, with safety, and the patient is in no greater danger from the presence of a clot increasing in size and pressing on the brain, than from any opening which may be made in the skull.

Dr. M. H. Richardson: I was sorry not to see this case at the time of the operation. I was away the day the symptoms came to a focus, and so was unable to be present. I remember this case very well indeed; and what impressed me then and what has impressed me since in the light of subsequent events, was the good condition of the man on the day I left him, which I think was Saturday. This man was lying in bed, and seemed to be very comfortable, and there seemed to be no urgency at all about operation. Had there been any such urgent symptoms we should have operated on Saturday.

This case seems to me to be another of the numerous cases of cerebral surgery where even the most judicious interference is not followed by recovery. It seems, however, if any case of cerebral drainage is to be successful, a case of this kind ought to be such. The localization and its thorough drainage would seem to be one of the most favorable conditions; and yet I think we see constantly in all acute conditions, whether of inflammation or pressure, that so much damage is done before we are aware of it that the prognosis becomes grave and that the mortality is very high. I recall a number of cases of cerebral inflammation, either where there has been an abscess or where there has been a diffused meningeal affection, where the prognosis and the result has been almost invariably fatal. Take the simple cases of fracture with slight meningeal inflammation, perhaps with moderate amount of pus under the dura mater, and I think in most of the cases I have seen the result has been just the same. I don't like to say this with any disparagement of interference because the conditions are such that we ought to be able sometime to remedy them by prompt interference

In regard to the technique of drainage or the best method of drainage, it seems to me that we have in the gauze, in cerebral surgery as in abdominal surgery, one of the best methods of drainage, as we have a constant capillary attraction which will carry off all thin fluids, and I think if we can combine the capillary drainage with the drainage-tube, we have the most perfect drainage that can be established.

Another thing I have observed in the operations themselves on the brain, which have made them in my experience very unsatisfactory, has been that unless we come down immediately and directly upon the lesion, explorations do a great deal of harm. In the abdominal cavity we can explore to the arm's length, and get a good idea of the whole abdominal cavity. In cerebral surgery we can only explore the parts directly under the trephine hole without doing great damage to the brain itself. The brain, even in the healthy condition, is soft. You explore with the finger or with instruments; and such explorations, it always seems to me, are followed by total destruction of the parts explored.

I think the work being done in this direction is encouraging; but, as I have said once or twice before — I do not refer now to abscess, to the subject of the present paper, which ought to be and seems to be the most favorable of most forms of cerebral surgery, but to cerebral surgery in general — the results have been to me very disappointing. I do not mean to say we should relax our efforts in this direction, but in my hands it has been one long series of disasters with very few exceptions; therefore, I think, for our own protection in cases of this kind, we ought to present to the patient or to his friends the facts of the case, and throw upon them the burden of decision without urging very strongly interference. In fact, I do not think we are called upon to urge our patients under any circumstances, but more especially in brain surgery, where the results are frequently, and you might say generally, so disappointing to the physician and to the friends of the patient.

Dr. Putnam: One word more about this matter of localization of lesions from symptoms confined to one part of the body, and not attended by loss of consciousness. I wish to relate in a few words a case I did not see myself but the post-mortem examination of which I witnessed. An elderly lady had a well-marked attack of influenza, from which she had recovered so that she was able to sit up. Suddenly she had a spasm in the left hand, without loss of consciousness. Twenty minutes later she had another attack which extended more up the arm; and eventually the whole arm and side of the face was involved. Thirty-six hours afterwards she had loss of consciousness, although these attacks were occurring every twenty minutes. It seemed like a case where a well-localized lesion might be expected; and we were disappointed at the examination to find only œdematous condition of the brain and with apparently no localizing lesions. On subsequent microscopic examination, it turned out that the case was probably one of encephalitis of infectious origin, with minute multiple hæmorrhages and disintegration of the tissue around them. The case seemed to me interesting as bearing out the view that diffuse lesions may cause localizing symptoms on account of the different irritability of different areas of the cortex, the most irritable area discharging more easily than the less irritable area.

I would like to express my sympathy with what Dr. Mixter has said about the propriety of making a number of openings rather than trying to do much exploration from one of them. The loss of bone is a matter of trifling moment, it seems to me; and the advantage which we gain in the way of getting a larger field for observation, with less mutilation of the brain, is certainly very great.

Dr. Cutler: I wish to present the thanks of the Society to Dr. Walton for his paper; and I think I voice the general sentiment of the Section when I present their congratulations on the success of his diagnosis.

* * *

Recent Literature.

The Microscope and its Revelations. By the late William B. Carpenter, C.B., M.D., LL.D., F.R.S. Seventh edition, in which the first seven chapters have been entirely rewritten and the text throughout reconstructed, enlarged and revised by the Rev. W. H. Dallinger, LL.D., F.R.S., etc. Philadelphia: P. Blakiston, Son & Co. 1891. 8vo, pp. xviii, 1099. Twenty-one plates.

Dr. Dallinger's edition of Carpenter's standard treatise is a welcome and valuable addition to scientific literature and is well calculated to assist all who have to use a microscope. The volume is well printed and is richly, one might almost say luxuriously, illustrated, and, what is more, a large number of original figures have been added by the editor, who indeed must have spent careful labor on every part of the volume. A large part of the text is entirely new, the editor being in reality the author to a great extent of the present edition.

The cumbersome size of the volume is due chiefly to the prolix style. It would have been easy to cut it down a quarter or a third without omitting any of the information and sacrificing the clearness of the explanations. For example, six pages are devoted to describing tables upon which a microscopist may work! On one of these pages (346) is a picture of the editor at work, with one of those microscopes which only an Englishman could tolerate, and so high, that it can be used only by putting it on a triangular stand between the observer's knees; in the picture the editor is drawing or writing, while looking through the instrument, and his left hand rests on his knee not on the fine adjustment. The picture indicates some of the characteristics of the whole book. A person professionally trained to use the microscope, always uses the fine adjustment, because it is indispensable in observing to incessantly shift the focus; an amateur rarely acquires this habit, and in the pictured attitude of Dr. Dallinger we may see the indication of the fact that he is an amateur microscopist, and that to him the performance of the instrument, its magnifying and defining powers are of prime interest and prominence. Were he a professional biologist or geologist, his attitude would be changed and the microscope would become to him all that it ever ought to be — a means of research. The same picture shows also the persistence of an unreasonable prejudice in favor of the very inferior English patterns of microscope, a prejudice which has misled the editor into a diatribe against the "continental" stand. The latter is the model of microscopes, which is steadily ousting all others the world over, and which ought to do so, because it is the best adapted for the vast majority of persons who use a microscope. The English model is fundamentally bad, and has been rejected by the world at large because it ought to be rejected. All that can be said is that some of the mechanical contrivances first introduced on English microscopes are valuable, and have been adopted because in a very limited number of special researches they are convenient. Were Dr. Dallinger more than an amateur, and familiar with the traditions and experience of scientific laboratories, he would have renounced many of the opinions he has expressed about the construction of the microscope, and thereby increased the value of his work in a very high degree, and have corrected that crudity of judgment which now mars the chapters he has written.

Yet as a whole the book deserves the most cordial praise. The introductory chapters on the optics of microscopy are probably the best treatment of the subject in English, and the descriptions of accessory apparatus deserve praise. The chapter on microtomes needs an improvement very much, for neither of the two best microtomes are mentioned; namely, Schiefferdecker's microtome for large objects and Zimmermann's automatic microtome for ribbons of sections cut in paraffine. One must not pass by this part of the work without especially commending the admirable and very interesting history of the microscope, a record of progress which on the whole has been slow and is due more to manufacturers than to scientific men.

Rather more than half the bulky volume is devoted to microscopical objects of all kinds, and embodies in a discursive manner a great deal of well selected information, which will be of help, not only to the amateur, but also to beginners in various fields, and to specialists, who may wish to apply their instrument to other branches of study than those they are familiar with. Most attention is given properly to the microscopic forms of vegetable and animal life, but the higher plants and animals are noticed for their histology as fully as practicable, while the rotifers, mites and other animals, which are small enough to be studied whole under the microscope receive fuller notice. One brief and inadequate chapter deals with the "Application of the Microscope to Geological Investigation."

In sum: the book is to be cordially praised and shows throughout great and conscientious labor, well directed, but it is a book for amateurs written by an amateur, whose opinion and knowledge would be rectified by a thorough professional training and experience in scientific research. "Microscopists" do not exist in the front ranks of science, because no man who puts his instrument above the knowledge he can gain by it, possesses the capacity to carry out the higher kinds of investigations. C. S. M.

The International Magazine Pocket Visiting-List, 1893. By J. C. Wilson, M.D. Philadelphia: J. B. Lippincott Company.

This visiting-list consists of 330 pages, of which the first 35 are devoted to condensed tables, useful for immediate reference. Space is given for sixty patients a week, each week occupying four pages, each entry running over two pages, thus giving room for a short memorandum, and reference to the page of the ledger. Half a dozen double pages at the end are reserved for obstetric engagements, and a few pages for vaccination and record of deaths, the whole ending with spaces for addresses, and thirty pages for cash accounts.

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CONGESTION OF THE LIVER, ITS ETIOLOGY AND TREATMENT.

In recent conferences delivered in Cochin Hospital, Dujardin-Beaumetz treats of congestions of the liver and their treatment.

His classification is as follows:

(1) Hepatic congestions of gastro-intestinal origin.

(2) Congestions of infectious origin (including malarial congestions).

(3) Diathetic congestions (gout, diabetes, etc).

(4) Mechanical congestions (type, the cardiac liver).

Under the first head, or hepatic congestions of gastro-intestinal origin, he admits three subdivisions; (*a*) congestions of purely alimentary origin — meats too excitant, food badly masticated, alcoholic stimulants; (*b*) congestions due to toxines whether these toxines result from bad digestion, or whether they depend on the aliment itself; (*c*) poisoning by lead, arsenic, phosphorus, etc., which cause congestions of the liver.

As for congestions of purely alimentary origin, they are among the most frequent, and all free livers and hard drinkers are subject to them. Fast eating and incomplete mastication, by favoring gastro-duodenitis, predispose to congestions of the liver by the intermediation of the bile-ducts, which become inflamed. But alcohol, of all the ingesta, is the most irritant to the liver; being absorbed by the radicles of the portal vein, it exercises its influence directly on the parenchyma and its circulatory vessels. In the same way, lead, arsenic, copper, phosphorus, by fixing themselves in the liver, determine congestions of this organ which may become chronic.

To the same head belong those congestions which succeed the penetration of toxines contained in the food; spoiled fish, stale oysters, tainted game, etc. The mechanism of such congestions is evident; they attend tha tincreased afflux of blood which is produced by the exaggerated function of the hepatic cells.

In other cases, the toxines which cause the congestion come not directly from the ingesta, but are engendered in the alimentary canal. Thus, in dilatation of the stomach vicious fermentations take place, and the mal-elaborated products of digestion are absorbed from the surface of the intestine, pass into the liver and produce congestion of that organ. In intestinal derangements, putrid products are often taken up by the intestinal veins and carried to the liver; to the sum of pathological phenomena thus produced, Bouchard has given the name of *Stercoræmia.*

Under the head of congestions of infectious origin, come the bilious congestions of typhoid fever, of malarial fever, of eruptive fevers in general, of puerperal fever, of pyæmia and of cholera. Hepatic congestion is at least in certain countries a constant attendant on dysentery and malarial poisoning. In dysentery, the augmentation of volume and the pain in the right hypochondrium are symptoms from the first day of the infection. In malarial poisoning, hepatic tumefaction is a constant symptom of the grave forms, and in the larvated forms, the simultaneous swelling of the liver and spleen are important diagnostic signs.

Certain diatheses are also believed to cause congestions of the liver. Both Dujardin-Beaumetz and Labadie-Lagrave insist on the reality of these "dyscrasic" congestions, due to a poison in the blood of an "arthritic," "scorbutic," "herpetic" nature which affects the liver as do other poisons which have been mentioned.

Next in order are the congestions of mechanical origin. These are the congestions dependent on cardiac and cardio-pulmonary disease. Admittedly the affections of the right heart are the most speedily accompanied by this mechanical congestion and in tricuspid insufficiency hepatic hyperæmia is the rule, but a valvular lesion, of the left side of the heart, by producing first stasis of the pulmonary circulation, then passive distention of the right auricle, just as surely results eventually in hepatic engorgment. All asystolic patients have a sub-icteric tint characteristic of hepatic congestion; they have weight and pain in the liver, and there is tenderness on pressure over the right hypochondrium.

Passing over without mention those temporary congestions which are of nervous or reflex origin, such as the fluxion of menstrual periods, of the menopause, and of suppressed hæmorrhoids, and concerning all of which there may be some doubt, Dujardin-Beaumetz takes up the subject of treatment. Here we must recognize two great divisions: (1) Active, (2) passive hyperæmia. The latter division comprehends only the congestions by mechanical disturbance of the circulation, above alluded to.

For the active congestions, our main reliance is on revulsion, intestinal antisepsis, and diet. This clinical authority is a firm believer in the utility of revulsion in congestions of the liver. He recommends especially, large blisters and punctiform cauterizations. Wet cups he would discard.

Hydrotherapy, in the form of douches over the liver, is sometimes an admirable method of treatment in chronic cases. Cold irrigations are also to be commended, as "it seems demonstrated that these lavements augment the secretion of bile and decongest the liver." About a quart of cold water, in which five grains of alpha-naphthol has been dissolved, is allowed slowly to penetrate the rectum by a fountain syringe; the patient retains it a few minutes and then passes it. These cold rectal douches are especially valuable in cases of congested, torpid liver with atonic, torpid bowels.

The question is asked whether there are any medicines which have a direct "decongestive" action on the liver? This writer does not think that there are any; nevertheless, there are medicines which have an indirect action. Such are the alkalies, iodide of potassium, and certain diuretics. Calomel, in which our fathers had so much faith, he would give only "exceptionally" for its purgative effect, and when other laxatives cannot be borne: it is inferior, in his estimation for ordinary purposes, to sulphate of soda and to euonymin, podophyllin, and cascara. Laxatives certainly have an important office in the treatment of hepatic congestions: they eliminate toxines from the intestines; by the intestinal secretion which they promote they decongest the portal system; and lastly, by increasing the flow of bile, they produce a favorable effect on the liver. Some of the sodic-sulphate mineral waters are useful.

Alkalies promote nutrition in general, and combat congestions of the liver. On this fact are based the favorable results which are obtained from the alkaline thermal waters of Vals, Vichy, Carlsbad, Marienbad, and especially Chatel-Guyon. The salts of soda are especially indicated in hepatic congestions. Iodide of potassium seems to do good by some not as yet well understood mechanism in hepatic congestions.

Dujardin-Beaumetz dwells at considerable length on the efficacy of intestinal antisepsis in hepatic congestions. The hyperæmia, in fact, so modifies the functions of the hepatic cells as to destroy the antiseptic properties of these cells, so that the liver no longer constitutes a living barrier which opposes the penetration into the organism of toxines absorbed from the surface of the intestines. A special treatment is therefore required to reduce to their minimum these toxines. This treatment is partly medicinal and partly dietetic.

As for medicines, he recommends the administration three times a day of the following powder, which may be given in capsule:

℞ Salol,
Salicylate of bismuth, } . . . . . . āā grs. v.
Bicarbonate of soda,

In this formula, benzonaphthol, in the same dose, may be substituted for the salicylate of bismuth if there be constipation.

As for diet, the vegetarian regimen in all its rigorousness is recommended. The patient should live on milk, starches, green vegetables and fruits. If animal food is allowed at all, the gelatinous meats (calf's head, pig's feet, *bœuf à la mode*, etc.) should be preferred and the meat should be well cooked. The crust of bread is better than the crumb, and milk is the preferable drink; no alcoholic beverage is permitted excepting a little white wine diluted with Vichy.

The passive congestions demand something that shall tone up the heart. Here the principal reliance must be placed on digitalis and digitalin, strophanthus and caffeine. Dujardin-Beaumetz prefers digitalin, which he gives in the dose of one-third milligramme three times a day. His formula is as follows:

℞ Crystallized digitalin, soluble in chloroform, 1 centigramme
Alcohol (90 °) . . . . 9 grammes
Glycerine . . . . 6 " M.

Sixty drops of this solution represent one milligramme of digitalin. The dose is twenty drops.

To this treatment (which is sometimes varied by the substitution of strophanthus and caffeine), is added a strict vegetarian diet, and the judicious administration of drastic purgatives.

"MERCANTILE MEDICINE."

It is often no easy matter to decide whether a certain advertisement is permissible in the advertising columns of a conscientious medical paper. The temptations which beset medical publishers and editors, where the latter have any voice in the matter, are not appreciated; but little credit is given for this sort of chastity, but, if in a moment of weakness one gives way, the fall from grace is patent to the world.

A sixteen-page essay, extolling the merits of a sure but secret cure for many diseases has recently offered itself freely through the country. In spite of its character it was accepted by some susceptible journals. This is merely one of several ways in which the medical profession, in America at least, is assaulted by money-making schemes, which are trying to establish a relationship with legitimate medicine, in order to beguile the general public.

The *Medical News*, in commenting on this advertisement, asks the editors of the papers which have accepted it, whether they consider it a proper and professional thing to do, and says that the whole affair is another sad evidence of the seriousness and virulence of the parasitic disease afflicting the American medical profession.

A medical publication under medical control can take but one course in such a matter, and when by such a publication the bribe is accepted, the greater harm is done. In this instance, we are glad to note that the journals owned and published by the great firms publishing medical books — whose policy is sometimes supposed to be dictated mainly by financial considerations — have taken a stand which would have been even more becoming in other less sensitive medical contemporaries.

As we began by saying, there are some things in regard to which honest, conscientious judgments may differ, and we have no desire to pose as a medical Pharisee, especially at a time when so many of the descendants of Israel are in such bad odor; but the particular broadside of advertising nonsense to which reference is here made, is at once one of the best baited and most offensive traps in which publishers, proprietors or editors have allowed themselves to be caught. We do not see how there can be two honest opinions about this. It is as bad as the worst recklessness of the religious or lay papers, of which so many medical journals and medical men have so justly had to complain.

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MEDICAL NOTES.

THE INFLUENCE OF CHOLERA ON PRICES OF DRUGS. — The marked value of opium has in this country risen but little, although its use in Russia and India during the past summer has been enormous. Ergot has risen in price on account of the cholera in Russia, which has prevented the gathering of the spurred rye. All the principal disinfectants increased in price suddenly during the time when cholera was most feared, but prices have declined since then.

THE ALVARENGA PRIZE. — The College of Physicians, of Philadelphia, announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1893, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in Medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1893. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within it the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1892 has been awarded to Dr. R. H. L. Bibb, of Saltillo, Mexico, for his essay entitled "Observations on the Nature of Leprosy."

CHOLERA. — The epidemic in Russia has abated in some districts, but in others the mortality continues as high or higher than it was some weeks ago. In the province of Kieff, during the week ending October 26th, there were 1,200 cases, with 453 deaths. A smaller number were reported from Samara, Tamboff, Lublin, and Saratoff. The disease exists in different parts of Turkey, but as yet not as a dangerous epidemic. The official returns state that up to October 28th, 136 cases of cholera have occurred in Austria since the outbreak of the disease — 130 of them in Galicia and Cracow and its environs. No official report on the statistics of the number of deaths from cholera in Hungary has appeared as yet, but the daily number of cases at Budapest and in the provinces may be estimated as between 30 and 40. A few cases have been reported in Vienna, but there appears no evidence that it has spread there at all. An official announcement declaring Hamburg free from cholera was published on November 1st. Official statistics show that the recent epidemic of cholera there had resulted in 17,972 attacks and 7,610 deaths. It is reported by cable that during the past week cases have occurred at Etaples, Courtville, Calais, Arras, Boulogne, Avion and elsewhere in the north of France and that there are several new cases in Holland. An official return of the Municipal Health Department at Havre — whence the cholera has now entirely disappeared — has been published. It embraces the period from July 15th to October 15th — that is, from the first outbreak of the epidemic up to a month ago — and shows that the total number of cases was 1,298, and that of the deaths 523. The disease was throughout almost entirely confined to the old parts of the city.

AMERICAN CATTLE IN ENGLAND. — The British Board of Agriculture have decreed that all cattle imported from Canada shall be killed as soon as they are landed, on account of the supposed danger of pleuro-pneumonia. This board has the power, under the Contagious Diseases of Animals Act, to declare that animals imported from foreign countries are dangerous to the health of the domestic stock. This treatment of Canada in the same way that the United States has been treated, has aroused protests both in Canada and by the Canadian representatives in London. There appears to be a feeling that this prohibition is founded, partially at least, upon the desire to prevent competition from abroad.

EXERCISE. — The Right Honorable Joseph Chamlain in a speech at Birmingham in England in presenting the prizes after an athletic competition, told his audience that he, personally, did not much believe in exercise. He then went on to say that he never rode a bicycle or a horse, or played cricket or foot ball or tennis, or even golf, in spite of the fact that the latter game was considered almost indispensable for British statesmanship. He does not even walk if he can help it, and in fact, takes no exercise at all, in spite of which there is no doubt that he is in as good physical condition as could be desired.

THE SULTAN'S PHYSICIAN. — Mavroyeni Pacha is said to have been his Sovereign's trusted friend and confidant since his childhood. In spite of this fact he has now been arrested because his wife, for purposes of revenge, sent to the sultan her husband's diary, in which daily notes were made of the variable conditions of the sultan's mind.

THE NAMING OF DISEASES FROM THE VICTIMS. — In an address at the opening meeting of the Medical Society of London, Mr. Jonathan Hutchinson, in speaking of medical nomenclature quoted a remark of Dr. Billings, that if a man has an interesting and new malady he is very probably photographed, then showed before a society, possibly even a bit cut out of him for the microscope, and after all the disease is named for his doctor, whereas it would be much more fair that it should have the patient's name. Mr. Hutchinson said that he had long been in the habit of naming diseases which were new to him from the names of the patients who first displayed them. For instance, he habitually thinks of a certain disease as "Mrs. Brandford's legs," and of another as "Mabey's disease." The *British Medical Journal* thinks that Mr. Hutchinson's idea of naming diseases from the original patient is not altogether a happy one, since it is very possible that Mrs. Brandford may be of such a retiring disposition that it would offend her to have a peculiarity of her legs go down to posterity with her name attached.

Opium in India. — As has already been mentioned in the Journal, a controversy is now taking place in India on the subject of opium. There appears to be an anti-opium party in Great Britain, which is making efforts to restrict or, as much as possible, prohibit the habitual use of opium in the East. On the other hand, many in India, including a large part of the medical profession, believe that the habitual use of opium in India is no more serious a matter than the use of alcohol, or even perhaps the use of tobacco in the West, and that the restriction of its use would entail unnecessary hardship upon a large number of people. Several life insurance companies have been asked whether a moderate use of opium shortens human life or not, and these companies have answered decidedly in the negative.

NEW ENGLAND.

A Site for the New Hospital for Lunatics in Boston has been selected by the Commissioners of Public Institutions at the corner of Canterbury and Walk Hill Streets. The lot contains about thirty-five acres and has a frontage on Canterbury Street of 2,250 feet. It was purchased from Nelson Pierce.

The Portland Quarantine Station. — The United States Government has given the city of Portland permission to use House Island in the harbor as a quarantine station, and the city council has placed $5,000 at the disposal of the city board of health with which to establish a disinfecting plant.

NEW YORK.

Mortality for the Week. — The deaths reported for the week ending November 12th were 620, as against 738 during the week ending November 5th. This shows a weekly mortality of 115 below the average of the corresponding weeks of the past five years, and represents an annual death-rate of only 17.48 to every thousand of the estimated population; which is the lowest death-rate that has ever been recorded in the city of New York. *La grippe*, with its complications, was assigned as the cause of death in four cases.

An Old Family Mansion on lower Fifth Avenue, occupied by the late Dr. Frederick Bedford, has been torn down to make place for a large business establishment. The property was purchased in 1848 by Dr. Bedford's distinguished father, Dr. Gunning S. Bedford. He had at that time founded the medical school of the University of the City of New York, and had established the first clinic, exclusively for women, in the world.

Academy of Medicine. — At a meeting of the surgical section of the New York Academy of Medicine, held November 14th, Dr. John A. Wyeth read a paper on "Lesions of the Appendix Vermiformis and Cæcum demanding Surgical Interference, with Report of Recent Cases, and Deductions." On Thursday evening, November 17th, Dr. Lewis A. Stimson will deliver before the Academy and its invited guests the anniversary discourse for 1892. His subject is "Pasteur's Life and Work in Relation to the Advancement of Medical Science."

Charles A. Seeley, Ph.D., died at Mount Vernon, New York, on November 4th. Dr. Seeley was born at Ballston, New York, November 28, 1825. He graduated from Union College in 1847, received from his alma mater the honorary degree of Ph.D. in 1878. He was appointed Professor of Chemistry and Toxicology in the New York Medical College in 1859, and for many years was employed as an expert in poisoning cases.

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Miscellany.

AMBERGRIS.

This peculiar base for perfumes is, as is well known, an abnormal product of the intestines of the sperm whale. It consists of acicular crystals with a considerable proportion of blackish pigment and a certain quantity of excremental matters characterized by the presence of beaks of cephalopods.[1]

The microscopical and chemical examination of this product has led S. Jourdian[2] to regard it as analogous to intestinal calculi, but what particularly attracted his attention was the presence of a large number of the jaws of cephalopods, either entire or in fragments. Some of these animals exhale a strong odor, which does not disappear after death or on drying. This peculiar perfume, modified by the biliary products of the sperm whale, constitutes the odor of ambergris. The black coloring matter of the latter is likewise due to cephalopods, which contain it in considerable quantities.

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THE TEETH OF SCHOOL CHILDREN.

The necessity of more careful supervision of the teeth of young children is discussed in a paper by Brunsmann,[3] who advises that children in the schools be taught how to take care of their teeth, as well as other hygienic subjects. A better result would be obtained if a periodical inspection of public schools by a dentist could be made. He suggests that those having the care of children should be impressed with the following facts. Care of the teeth, that is, regular cleaning of them must be begun in the third year of life. Milk teeth should be filled as well as permanent teeth, at least with a temporary filling. All severe pain in teeth during the act of chewing is liable to produce serious damage indirectly to the general health. It is better to keep the six-year molars until the eleventh year even if they are carious, unless the jaw be very narrow, in which case they had better be extracted even if they are sound. By careful daily cleansing, the formation of cavities can be lessened or entirely prevented. Caries is commonly due to the formation of acids in the mouth which attack first the enamel, and then the tooth itself. The holes thus formed become filled with micro-organisms. It is consequently better, not only to brush the teeth, but also to use some mouth-wash to neutralize the acidity. No proprietary compounds should be used, nor any sharp instruments. The sooner a cavity is filled, the more likely is the tooth to resist further destruction.

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[1] American Journal Pharmacy, November.
[2] Jour. de Phar. et de Chim., August 25.
[3] Deutsch Monat. F. Zahnheilk.

FLIES AND CHOLERA.

The part played by flies in the dissemination of cholera has been the subject of study both in Hamburg and Berlin. Simmonds[1] caught several flies in the vicinity of dejections and autopsy tables, and from them made cultures. He found that the comma bacillus could be cultivated from flies for an hour or two after they had been in contact with infected material. Infected flies were put into a box with others non-infected. An hour and a half later the infected flies had infected every single fly in the box. The danger of the spread of contagion by flies so impressed itself upon the authorities in Berlin that a police regulation was made that every one should do his utmost to destroy these insects, and that any dealer in food-supplies who neglected to kill all the flies that he could should be fined, and in case of continued neglect, imprisoned.

TRANSITORY DULNESS AT THE APICES OF THE LUNG.

Kœnig[2] has noticed frequently a marked dulness at the apices of the lung unaccompanied by auscultatory signs, in cases which later at autopsy presented nothing abnormal in the lung. This occurs nearly always in persons suffering from some exhausting disease, and is often so marked as to be very misleading. As it often happens that in incipient phthisis dulness on percussion is the only suspicious physical sign, it must be borne in mind that a diagnosis should not be made from this alone without careful study. The explanation, the author believes, is to be found in the incomplete filling of the apices of the lungs with air, and occurs especially in patients who have lain in bed for some time. Such patients are, however, not the only ones in which he has noticed this condition, but except in such patients he has seen it only in women and among hospital patients. Cases are given, in which it occurred in connection with typhoid fever and influenza.

INHIBITION OF GROWTH IN SHEEP AFTER THYROIDECTOMY.

Dr. von Eiselsberg, assistant of Professor Billroth, in continuing his researches on the influence of the extirpation of the thyroid gland on the growth of animals, has found considerable differences in the development of sheep after thyroidectomy.[3] In two lambs soon after birth the thyroid gland had been extirpated, and now, after eight months, the animals showed the following differences from two other lambs of the same age: The bodily weight was only 10 and 14 kilogrammes in the operated animals, while it was 35 and 27 kilogrammes in those not operated upon. The hind part of the head and the abdomen of those operated on are considerably enlarged and gives to them a peculiar appearance, their tails are only rudimentarily developed, their testicles are atrophied, their fleece is bad, their intelligence is lower than in the normal animals and they are suffering from chronic bronchial catarrh with viscous secretion similar to that which is often observed to occur in human beings after thyroidectomy. Various therapeutical experiments will shortly be made on these animals which were demonstrated at the last meeting of the Vienna Medical Society.

TWISTING OF THE UMBILICAL CORD.

In man and many mammals, the umbilical cord is twisted, but the twisting may be either right or left handed, and the number of turns may vary. To explain this, several hypotheses have been advanced, the last being that of Prof. F. J. Allen.[1] The twisting consists in the twining of the two arteries about the single vein of the cord, and this involves an increase in length of the arteries greater than that of the vein. To test this Allen devised a model of rubber tubes and cord, and found that the hypothesis was fully supported by the model. It is not easy to see what is the gain to either fœtus or mother by this twisting.

A STUDY OF SEPTIC BULLETS.

Assistant-Surgeon L. A. Lagarde of the United States Army, in an interesting paper with the title "Can a Septic Bullet Infect a Gunshot Wound?"[2] gives the result of a series of experiments and arrives at the following conclusions:

The vast majority of cartridges in original packages are sterile and free from septic germs. The sterile condition of the cartridges is due to the thorough disinfection and absolute cleanliness observed in the process of manufacture. The disinfection with heat, acids, and alkalies, and the rigid rules of cleanliness used in the process of manufacture, are employed to exclude grease and dirt, as the latter impair the keeping qualities of the powder and disturb ballistic values. The majority of gunshot wounds are aseptic, because the vast majority of the projectiles inflicting them are either sterile or free from septic germs. Cartridges out of original packages show micro-organisms upon them, and these are not entirely, if at all, destroyed by the act of firing. Anthrax, when applied to the projectile of a portable weapon, is seldom if ever entirely destroyed by the act of firing. When a gunshot wound is inflicted upon a susceptible animal by a projectile infected with anthrax, the animal becomes infected with anthrax and dies in the vast majority of instances from said infection. The heat developed by the act of firing is not sufficient to destroy all the organic matter on a projectile, the cherished notion of three centuries and more to the contrary notwithstanding. The results, as set forth in the foregoing paper, justify the assumption that a septic bullet *can* infect a gunshot wound.

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[1] Deutsche med. Woch., October 30th.
[2] St. Petersburg med. Woch., No. 26.
[3] Lancet, October 29th.

[1] Journal of Anatomy and Physiology, xxvi, 300, 1892.
[2] New York Medical Journal, October 22d.

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THERAPEUTIC NOTES.

A Simple Tracheotomy-Tube. — A note in the *British Medical Journal* suggests the use of a piece of India-rubber drainage-tube, prepared by making two longitudinal cuts, their length varying with the depth of the wound. In the lateral flaps made by these longitudinal incisions holes are punched for tapes. This tube may be fenestrated if it is considered advisable. Such a tube is said to fit well and to be generally acceptable, but its use is especially to be borne in mind in cases of emergency where more othodox tubes are not at hand. It is also useful where a silver tube has been worn for a few days and is not satisfactory.

The Injection of Iodoform Oil for Cold Abscess. — Redard[1] introduces a thoroughly sterilized trocar into the cavity, and draws off the pus. The cavity is then washed out carefully with the following solution:

℞	Naphthol	10 grms.	
	Alcohol	5 "	
	Distilled water	ad. 100 c. c.	M.

The following is then injected and continued until there is a return flow.

℞	Iodoform	10 grms.	
	Sterilized olive oil	ad. 100 c. c.	M.

The puncture is then closed with iodoform collodion, and a bandage with moderate compression is applied. Two or three injections are generally sufficient.

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Correspondence.

LONDON LETTER.

[From our Special Correspondent.]

Miss Cobbe, Mr. Horsley and the Anti-vivisectionists. — The Over-laying of Children. — A Home for the Dying. — St. John Ambulance Association.

London, November 5, 1892.

Mr. Editor: — The special subject of medical comment and discussion in London, at present, is the late vivisection controversy at the Church Congress. Mr. Victor Horsley, in showing up the misstatements which had been published under ægis of the anti-vivisectionists, much of which was from the pen of the now famous Miss Cobbe, allowed his temper to get away from his judgment, and called Miss Cobbe a liar. This ungallant and unparliamentary remark appears now to be the principal weapon in the hands of the enemy, since it became evident to unprejudiced persons that the vivisection party had by far the best of the argument. But this little word has added renewed popular interest to the whole affair, and certain editors, aided by the more prominent members of the Victoria Street Society for the Prevention of Vivisection, regard Mr. Victor Horsley's ungallant remark as the result of brutality, due to many hours of gloating over the agonies of vivisected animals. Miss Cobbe finally declined to continue the discussion with one whom she calls a "bravo of science." Professor Horsley's opinion of his opponent is summarized in the following letter: "Further, I have purposely employed this plain language in order to make it clear to the public that Miss Cobbe is unworthy of the customary courtesies of debate. Miss Cobbe has, ever since this agitation began, systematically employed the weapon of deceit, professing, as in the present instance, to quote the whole truth, but in reality suppressing or falsifying the essential particulars. This line of conduct deprives Miss Cobbe of all credit, and renders it impossible for me to extend to her the consideration which would otherwise have been due to her sex. I have documentary (printed) proof that she has chosen for sixteen years or more to take an immoral course, namely, accusing medical men of murder, cruelty, falsehood, etc., and, in fact, almost every crime in the calendar, while supporting such charges by frauds of the kind I have now exposed. I cannot, therefore, treat her as I would wish to do; I can in this matter only deal with her quite impersonally so far as her sex is concerned."

The whole history is beautifully dramatized by *Punch*, who in a few lines tells the whole story:

A Modern Scientific Discussion.

"—— Animis Cœlestibus Iræ!"

Miss Fanny (*a gentle and most veracious child*): "Yah, you cruel coward! you and your friends skinned a live frog!"

Master Victor (*an industrious but very touchy little boy*): "You're a liar! The frog was dead, and you know it!"

Miss Fanny: "Boohoo! Whether it was dead or not, you've got no right to call names; 'cos I'm a girl, and can't punch your head."

Master Victor: "It's just because you're a girl that I can't punch yours! You should have thought of that before you called me a coward!"

One of the prominent members of the Anti-vivisection Society, a short time ago, was bitten by a dog, which was supposed to be mad, and which was immediately killed. The frightened member consulted his medical adviser, who told him that the only way of determining whether the dog had rabies was by inoculations in lower animals. The prominent member commanded that this be done, and did it in a way which gave the impression that he granted a special dispensation for this one occasion only.

The Labor Commission have been listening to the evidence of Dr. Ogle on early marriages and mortality. Several facts, already well-known, were again brought to light, as that early marriages tended to make large families, and that clergymen were particularly long-lived; but another fact, also known before, was emphasized, that an enormous number of children are annually killed in the city by being overlaid — smothered in bed. This goes hand in hand with the appalling amount of drunkenness among women, and it is significant that by far the larger number of these cases occur on Saturday nights.

"Friedenheim," a large mansion standing in two acres of ground, opposite Swiss Cottage Station, in Upper Avenue Road, is intended to be a last home for dying men and women. Dr. Alfred T. Schofield, chairman of the executive committee, and honorary physician, states that it constitutes, with trifling exceptions, the only provision in London for dying, as distinguished from incurable cases, that are not of the pauper class. The Duchess of Teck, who is to be accompanied by Princess May, will formally open the institution on the seventh.

At a meeting of the St. John Ambulance Association, presided over by the Lord Mayor, Sir V. Kennett-Barrington, chairman of the district, said that in London the number of fatal accidents was greater than occurred on all our railways, and as great as occurred in all the mines of England and Scotland. The knowledge imparted by the Association was at no time more valuable than when it caused nothing to be done pending the doctor's arrival. A sharp bone recently stuck in a man's gullet, and serious consequences would probably have resulted had not those about him known that the best aid they could render was to do nothing. The speaker had received an official announcement that when the recent railway accident occurred at Bishopsgate Street, a number of the Association's pupils were on the spot within four minutes of the crash. Immense good had resulted from the instruction that had been given to the police.

(To be continued.)

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[1] Gaz. med. de Strasbourg, September.

METEOROLOGICAL RECORD,

For the week ending November 5, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...30	29.98	47	53	41	68	67	68	N.W.	W.	16	12	C.	C.	
M..31	30.20	46	55	37	69	46	58	W.	S.W.	10	13	C.	O.	
T.. 1	30.18	50	54	46	64	76	70	S.W.	N.E.	7	11	O.	O.	
W. 2	30.20	45	50	40	81	100	90	N.E.	W.	25	12	O.	R.	0.20
T.. 3	29.88	46	51	40	93	70	82	W.	W.	2	17	R.	C.	0.39
F.. 4	29.73	47	51	43	66	72	69	S.W.	S.E.	2	7	F.	R.	
S.. 5	29.68	34	37	30	95	73	84	W.	N.W.	20	23	N.	C.	0.15
☞	29.98	45	50	40	76	72	74							0.74

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 5, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	738	252	15.82	19.46	2.80	6.44	.98
Chicago . . .	1,250,000	413	148	22.56	12.00	.72	13.20	5.76
Philadelphia .	1,092,168	380	126	16.90	10.14	2.86	10.92	.78
Brooklyn . .	955,333	327	126	11.16	15.50	1.55	6.82	.62
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	182	43	11.55	15.95	1.65	5.50	1.65
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	85	21	10.62	15.34	3.54	5.90	1.18
Cleveland . .	281,353	82	25	20.91	3.69	2.46	12.30	4.92
Pittsburg . .	255,000	103	47	28.13	10.67	3.88	15.52	5.82
Milwaukee . .	234,440	—	—	—	—	—	—	—
Washington .	230,360	95	27	11.55	9.45	4,20	3.15	3.15
Nashville . .	87,754	32	10	12.52	18.78	3.13	3.13	3.13
Charleston . .	56,048	44	4	4.54	2.27	—	—	—
Portland . . .	40,000	7	1	—	14.28	—	—	—
Worcester . .	92,313	24	7	16.64	12.48	8.32	4.16	—
Lowell . . .	82,455	22	9	—	31.85	—	—	—
Fall River . .	82,128	24	6	16.61	8.32	—	4.16	4.16
Cambridge . .	74,644	17	1	17.64	11.76	5.88	5.88	5.88
Lynn	60,809	11	1	18.18	9.09	9.09	9.09	—
Springfield . .	47,052	12	4	25.00	—	—	16.66	—
Lawrence . .	45,910	20	8	10.00	—	—	5.00	5.00
New Bedford .	44,947	7	0	28.56	28.56	28.56	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	7	1	14.28	—	—	14.28	—
Salem	31,495	13	1	7.69	23.07	—	—	7.69
Haverhill . .	30,065	3	1	33.33	33.33	—	—	—
Chelsea . . .	29,479	11	0	9.09	—	—	—	9.09
Malden . . .	27,252	—	—	—	—	—	—	—
Newton . . .	26,495	—	—	—	—	—	—	—
Taunton . . .	26,464	10	3	10.00	10.00	—	—	—
Gloucester . .	26,008	8	0	25.00	25.00	—	—	—
Fitchburg . .	25,444	5	2	20.00	20.00	20.00	—	—
Waltham . .	20,942	9	0	22.22	—	—	—	11 11
Quincy . . .	18,669	3	0	—	—	—	—	—
Pittsfield . .	18,294	3	0	—	—	—	—	—
Northampton .	15,684	3	1	—	33.33	—	—	—
Everett . . .	14,745	2	0	—	50.00	—	—	—
Newburyport .	14,031	7	2	—	—	—	—	—
Amesbury . .	13,561	2	0	—	—	—	—	—

Deaths reported 2,723: under five years of age 882; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 430, acute lung diseases 379, consumption 314, diphtheria and croup 218, diarrhœal diseases 63, typhoid fever 61, scarlet fever 34, whooping-cough 14, malarial fever 12, cerebro-spinal meningitis 9, measles 8, small-pox 6, erysipelas 5.

From scarlet fever New York 10, Philadelphia 6, Boston 4, Pittsburgh 3, Chicago, Brooklyn and Fall River 2 each, Cleveland, Springfield, Taunton, Gloucester and Waltham 1 each. From whooping-cough New York 8, Chicago 2, Philadelphia, Brooklyn, Boston and Nashville 1 each. From malarial fever New York 8, Brooklyn and Charleston 2 each. From cerebro-spinal meningitis Chicago 3, New York and Brooklyn 2 each, Washington and Worcester 1 each. From measles New York and Chicago 3 each, Philadelphia 2. From small-pox New York six.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending October 29th, the death-rate was 19.5. Deaths reported 3,808: acute diseases of the respiratory organs (London) 296, measles 96, diphtheria 82, scarlet fever 78, diarrhœa 75, fever 37, whooping-cough 36, small-pox (Halifax and Bradford 1 each) 2.

The death-rates ranged from 12.3 in Croydon to 33.5 in Salford; Birmingham 21.1, Bolton 13.0, Bradford 18.1, Hull 25.2, Leeds 19.4, Leicester 17.7, Liverpool 22.3, London 18.5, Manchester 22.7, Newcastle-on-Tyne 19.8, Norwich 17.8, Sheffield 19.0, Sunderland 13.3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 5, 1892, TO NOVEMBER 11, 1892.

Leave of absence for four months, with permission to apply for an extension of two months, is granted **MAJOR JUSTUS M. BROWN**, surgeon, U. S. A.

CAPTAIN EUGENE L. SWIFT, assistant surgeon, U. S. A., is granted leave of absence for one month to take effect upon expiration of present sick leave.

ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

ROME, SEPTEMBER 24 TO OCTOBER 1, 1893.

The American Sub-Committee has the following membership: W. T. Briggs, Nashville, Tenn.; H. P. Bowditch, Boston, Mass.; S. C. Busey, Washington, D. C.; C. Cushing, San Francisco, Cal.; N. S. Davis, Chicago, Ill.; A. Jacobi, New York, Chairman; Norman W. Kingsley, D.D.S., New York; Wm. Osler, Baltimore, Md.; Wm. Pepper, Philadelphia, Pa.; F. Peyre Porcher, Charleston, S. C.; Charles A. L. Reed, Cincinnati, O.; D. B. St John Roosa, New York; Alex. J. C. Skene, Brooklyn, N. Y., and James Stewart, Montreal, Can.

The Secretary-General informs the Committee, that the French Railway Company has offered to the members of the Congress a reduction of fifty per cent. on its fare.

RECENT DEATHS.

WALTER CARPENTER, M.D., of Burlington, Vt., died November 9th, aged eighty-four years. He graduated from Dartmouth Medical College in 1829.

EDMUND T. EASTMAN, M.D., M.M.S.S., died in Boston, November 7th, aged seventy-three years. He graduated from Harvard College in 1846, and from the Medical School in 1850. He was a member of the Board of Overseers of the Poor for three years, and of the school committee for eleven years, and served two years in the State legislature.

WILLIAM DWIGHT, M.D., M.M.S.S., of North Amherst, Mass., died November 13th, aged seventy-one years. He was a graduate of Amherst College, and received the degree of M.D. from the Berkshire Medical College in 1843.

ABRAHAM REEVES JACKSON, M.D., died in Chicago, November 12th, aged sixty-five years. He was president of, and professor of gynecology in, the College of Physicians, and was widely known as a writer on gynecology.

BOOKS AND PAMPHLETS RECEIVED.

Short Talks on Character Building. By G. T. Howerton, M.S. New York: Fowler & Wells Co. 1892.

The Royal Road to Beauty, Health and a Higher Development. By Carrica Le Favre. New York: Fowler & Wells Co. 1892.

Circular No. 9. Department of Liberal Arts, World's Columbian Exposition. The Bureau of Hygiene and Sanitation.

Transactions and Complete List of the Officers and Fellows of the American Surgical Association. Vol. 10. Edited by J. Ewing Mears, M.D. 1892.

Manual of Practical Medical and Physiological Chemistry. By Charles E. Pellen, E.M., Demonstrator of Physics in the College of Physicians and Surgeons, etc. New York: D. Appleton & Co. 1892.

Kirke's Hand-book of Physiology; Hand-book of Physiology. By W. Morrant Baker, F.R.C.S., and Vincent Dormer Harris, M.D., F.R.C.P. Thirteenth edition. Philadelphia: P. Blakiston, Son & Co. 1892.

Accidents and Emergencies, A Manual of the Treatment of Surgical and Medical Emergencies in the Absence of a Physician. By Charles W. Dulles, M.D., Physician to the Rush Hospital, etc. Fourth edition. Philadelphia: P. Blakiston, Son & Co. 1892.

Address.

THE NECESSITY OF A PROPERLY ORGANIZED HOSPITAL CORPS IN THE NATIONAL GUARD.[1]

BY LIEUT.-COL. CHARLES R. GREENLEAF,
Deputy Surgeon-General, U. S. A.

Gentlemen of the Medical Staff. — The busy hours of your short encampment, filled as they are with drills, guard duty, parades and reviews, give no opportunity for inquiring into the administration, or even the functions, of the several staff departments upon whose labors depend your comforts in the way of food, shelter, military supplies, and last, but by no means least, the health to enjoy these comforts, and to perform the duties which on these occasions you so cheerfully and loyally render to your State.

Concerning the Medical Department, the natural reply of a majority of military men to the question "What are its duties?" would be, "to care for the sick and wounded"; which reply would be quite as incomplete as to say that the duties of the soldier were to fight, or that those of the Quartermaster Department were to furnish quarters. The *least* duty of the medical officer is to care for the sick. His *greatest* duty is to keep the men from getting sick — to preserve the health of the command. In other words he is the sanitary officer of an army.

I need not remind the military student that the most disastrous campaigns recorded in history, involving the practical annihilation of whole armies, were the result of the ravages of disease; and when I tell you that nearly all diseases incidental to military life are *preventable*, you will, I am sure, appreciate the character of the services rendered by that department which may eliminate so serious a factor of defeat from the calculations of a military commander.

As it is the duty of the Engineer Department in advising a commander of the strategic points in a desired position, so it is the duty of the Medical Department in advising him of its sanitary condition. In the selection of sites for camps to see that they are not swept by winds passing over malarious swamps, that the surface drainage is such as to secure dryness, and that the water-supply is abundant and of good character; that suitable provision is made for the disposal of excreta and other harmful matter; that the food is abundant, of good quality and properly cooked; that the tents are not overcrowded and the men obliged to sleep in a vitiated atmosphere, and that the personal hygiene of the soldier is preserved by cleanliness of body, sufficiency of clothing, etc.

In the permanent stations necessary in the time of war, as depots for recruits, hospitals, etc., it is to see that by proper methods of heating and ventilation pure air is supplied to, and is constantly changed, in these structures; that the plumbing and sewerage is adequate and properly planned, and that the air-space is sufficient for their intended occupancy.

During active operations in the field it is to be ready with its properly instructed and systematized corps, to care promptly for the wounded; not alone as professional men, but as tacticians, by skilfully and quickly removing the non-effective from the effective forces, and preserving the integrity and mobility of the fighting line.

To the State, the Medical Department stands in a most important relation as the guardian of both the entrance to, and the exit from its military service; its officers should reject not only the applicant for enlistment, but the applicant for a commission, who is physically disqualified to perform all the duties of a soldier; and should set their faces against the discharge of any who, having once entered the service, are still capable of doing duty in its ranks. In this day of reward, in the shape of pension or otherwise for service to the State, it is a grave responsibility that rests upon the department, to pass judgment which may involve the expenditure of large sums of money for such purposes.

Functions so essential to the welfare of an army, and that are largely scientific in character, require for their efficient administration, a definite legal recognition not only of the office to which they pertain, but of the officer who performs them; and in the laws organizing the military establishment, Congress has made the Medical Department an integral factor of the staff, fixing the status of its *offices* similarly with those of the other staff departments, and investing its *officers* in like manner with a military rank, thus securing for the *office* the dignity that pertains to all other military offices, and for the *officer* the respect which is inherent to rank. Recent legislation has removed certain restrictions that had lain upon the scope of duty to which a medical officer might be assigned, and he is now the peer of any commissioned officer, and his co-equal in rank. It is therefore his duty, when entering upon the functions of his office, to leave behind him both the dress and the title of the civilian, and to assume those prescribed for the military; that is, the uniform and the title of rank. The title of the "doctorate" has clung with singular peristency to the medical officer; it is nowhere mentioned in the law or in the regulations; on the contrary, the latter enjoins upon officers the use of their military titles; yet to this day the laity, and I am sorry to say a large number of professional men, continue to speak of the medical officer as "the army doctor." This may seem a trifling matter, but when I shall have explained the full scope of military duty now required of the medical officer, you will see that the military title is of vital importance in the maintenance of discipline.

In the regular army, therefore, the *Medical* is one of the *Staff Departments;* that is to say, its officers are segregated from the line of the army and are organized into a corps; while under the laws of many States, and under so much of the national law as relates to volunteers, they are a part of the *regimental* organization. So far as efficient administration is concerned there can be but one reply to the relative merits of the two organizations, and that is in favor of the former; in fact our modern field tactics for the Medical Corps are drawn upon that basis. As arguments in its favor I may claim:

First: Entire freedom from local influence as regards appointment and duty. In the appointment of regimental medical officers preference is liable to be given on account of friendship, or otherwise, to men who are not fitted, either by education or habits, for the position. Personal feeling or other interests may lead regimental commanders to disregard recommendations as to the physical condition of officers and men, or as to sanitary matters that may be of vital importance to a command, which the medical officer is unable to resist, holding as he may his position measurably at the will of his commander. If, however, the plan is one of assignments, the State is able to secure the best of professional talent through competitive examination, and the officer, untrammelled by local attachments, and freed from personal influences is in a position to perform his duties without fear or favor.

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[1] Read before the Medical Staff of the First Brigade of the Vermont National Guard at its Annual Encampment, August 23 to 27, 1892.

Second: Prompt assistance and efficiency in the care of the wounded in action. Here an independent untrammelled force is absolutely essential in order that inequality of service may be avoided. A line of battle may be suddenly and vigorously assailed at a particular point, and an individual regiment in a few moments lose a large number of its men, throwing upon its medical officers an amount of work that is impossible for them to accomplish. Neighboring regiments cannot assist because they may be in a similar condition at any moment, and require their own officers and supplies. The result is the neglect, suffering and death that have furnished material for so many gruesome tales of the horrors of war. With an independent corps, an adequate force of medical officers can be promptly sent to any, one or many, points of a line that may be attacked; even as the general strengthens it with reserves, or shifts the positions of his troops with the varying conditions of the action. There is no exhaustion of force at one point, while at another there is a surplus; but from a central point, an equal distribution may be made, or special necessities be met. Again, the personal equation of the medical officers can be taken advantage of without interference with a regimental organization; the expert surgeon is assigned to the operating table, he who is a statistician takes charge of the records, the one having executive ability is given charge of the field hospital, while the military officer commands the men of the Hospital Corps.

Third: Economy of administration. Under the regimental system officers and men are trained to rely upon the Medical Department of their own regiment; each command must retain its supplies for a time of necessity, that may never come, and cannot assist its neighbor without danger of serious embarrassment. There is also waste in opening large packages of supplies for small wants, and in occupancy of space in transportation for unnecessary things, when those necessary must be accommodated. The sick of the regiment become an incumbrance; or, in serious cases and deaths, produce a depressing effect upon the well; and upon the march the ambulances of one regiment may be empty while those of another are overloaded; loans of public property, even when made to save life, involve embarrassment in the settlement of property accountability, and friction and confusion result, when there should be harmony and order. Under a central administration all this is avoided; the sick are removed to brigade field hospitals, freeing the regiment from this encumbrance; supplies are distributed when and where needed, and ambulances used for the general good.

The enlisted force requisite in this service was, until a very recent period, and still is in many of the States, that of Vermont included, drawn by detail from the companies of the line, supplemented in some instances by the members of the band; a procedure that in actual service was objectionable alike to the companies furnishing the men, to the Medical Department which used them, and in many instances to the men who were detailed. Company commanders objected, and with good reason, to the depletion of their ranks, and often furnished men who were valueless by reason of vicious habits or general worthlessness. Medical officers objected to receiving such men, and even when the best was given, were embarrassed by their ignorance of the duties to be performed, while many of the men gave but a perfunctory service in work which was distasteful to them, or for which they were wholly unfitted. The result was a general inefficiency, dissatisfaction and lack of harmony that early in the War of the Rebellion called forth the organization of our Ambulance Corps, the operations of which excited universal commendation, its essential features having been adopted by the armies of nearly every civilized country. The weak point in this admirable organization was its fountain of supply. Carrying out the then existing ideas, it was made up by details of officers and men from the regiments comprising a brigade, which were accordingly depleted proportionately with their casualties by sickness and wounds; it was also incomplete in that it made no provision for the immediate care of the wounded on the firing line, and a further cause of depletion existed in the assistance of that line to their stricken comrades, which too often afforded an excuse for straggling.

The present organization of this force, known as the Hospital Corps, meets all these objections and supplies a body of men in excess of, and supplementary to, the combatant force, who being selected on account of special fitness, are drilled in tactics which enable them to perform their duties under most trying circumstances almost by intuition, and who are in reality an assistance instead of an encumbrance to the line of the army.

The Hospital Corps consists of a body of men enlisted for service in the Medical Department, "not included in the effective strength of the army nor counted as a part of the enlisted force provided by law." It is graded into Hospital Stewards and privates, such of the latter as have reached a certain degree of efficiency being detailed as Acting Hospital Stewards, the number of men who may be enlisted into the corps being determined by the needs of the service.

Supplementary to this corps are men known as Company Bearers; every company having among its members four men, who are especially instructed in methods of rendering first aid, and who are the only men in the company authorized to leave the firing line in time of action for this purpose, or to render any assistance to the wounded; their duty is only a temporary one, and does not relieve them from their status as combatants; they wear a *brassard* of red cloth on the left arm to distinguish them from other combatants who are not authorized to leave the line.

The men of the Hospital Corps are drilled by the medical officers in the school of the soldier in a manner similar to that used for the enlisted men of the line; they are especially drilled in the use of the litters, in the methods of handling the injured who are to be carried on them, and in ready methods for rendering first aid. The litter drill, which has the essential features of the drill with a rifle, is necessary to thoroughly familiarizing them with that part of their work, so that under conditions of the greatest danger they may be able to do the right thing mechanically, and by a system which soon becomes a second nature. At first sight the handling of a litter appears to be a very simple affair, and the placing upon it of a wounded man equally as simple; so it appears to handle a rifle and fire it, but when the attempt is made by one uninstructed in the use of either article, the fallacy of this apparent ease is evident. It is a maxim in military matters that "all things should be done decently and in order"; and the discipline that requires the thumb to be at an exact spot on the rifle in the manual of arms, is quite as essential as that which requires obedience to an order for going into action. Order and system are vital to success, and without them an army would be a mob. So the discipline which requires a soldier to open a litter, or place it in an ambulance in the prescribed way, is essential to the orderly care and successful disposition of the wounded.

Of all the cares with which the military commander is burdened, that of the wounded excites his greatest solicitude, touching closely his humanity and his reputation, for he who leaves them to the care of an enemy suffers a blot upon his escutcheon that nothing can efface. The value of this organized care of the wounded was strikingly shown after the action last year with the Sioux Indians, known as Wounded Knee, where we had a relatively large number of men disabled in a very short time. The command was surrounded by Indians in numbers sufficient to annihilate it, and its only safety was in a night retreat; time was short, but what was to become of the wounded? To leave them meant their murder at the hands of the Indians; to stay with them meant the addition of the effective command to the death roll. While the commander was debating, the Hospital Corps was quietly doing its work; the men, trained to prompt action in first aid, were putting temporary dressings to broken limbs, bandaging flesh wounds and checking hæmorrhage from bleeding vessels. Others were improvising rude beds from gun-slings, blankets, etc., while others were gently and carefully placing the wounded in the few ambulances and wagons that were with the command. In one short hour the senior medical officer reported his part of the command as ready to march — the question was solved — the wounded men were saved and the command rescued from its perilous position; a feat impossible to have been accomplished without order and system, or without men who had been trained in litter drill. This well merited and complimentary statement was made to me by the officer then in command, General Forsyth of the Seventh Cavalry.

In any service with civilized combatants such an alternative would not be possible, although situations are very likely to occur where a rapid disposal of the wounded might be essential to the success of particular military movements. The disabled among civilized combatants are now protected by the articles of the Geneva Convention, of which I will read to you those that relate to armies: —

ORIGINAL CONVENTION.

Article I. Ambulances and military hospitals shall be acknowledged to be neuter, and, as such, shall be protected and respected by belligerents so long as any sick or wounded may be therein.

Such neutrality shall cease if the ambulances or hospitals should be held by a military force.

Art. II. Persons employed in hospitals and ambulances, comprising the staff for superintendence, medical service, administration, transport of wounded, as well as chaplains, shall participate in the benefit of neutrality, whilst so employed, and so long as there remain any wounded to bring in or to succor.

Art. III. The persons designated in the preceding article may, even after occupation by the enemy, continue to fulfil their duties in the hospital or ambulance which they serve, or may withdraw in order to rejoin the corps to which they belong.

Under such circumstances, when these persons shall cease from their functions, they shall be delivered by the occupying army to the outposts of the enemy.

Art. IV. As the equipment of military hospitals remains subject to the laws of war, persons attached to such hospitals cannot, in withdrawing, carry away any articles but such as are their private property.

Under the same circumstances an ambulance shall, on the contrary, retain its equipment.

Art. V. Inhabitants of the country who may bring help to the wounded shall be respected, and shall remain free. The generals of the belligerent Powers shall make it their care to inform the inhabitants of the appeal addressed to their humanity, and of the neutrality which will be the consequence of it.

Any wounded man entertained and taken care of in a house shall be considered as a protection thereto. Any inhabitant who shall have entertained wounded men in his house shall be exempted from the quartering of troops, as well as from a part of the contributions of war which may be imposed.

Art. VI. Wounded or sick soldiers shall be entertained and taken care of, to whatever nation they may belong.

Commanders-in-chief shall have the power to deliver immediately to the outposts of the enemy soldiers who have been wounded in an engagement, when circumstances permit this to be done, and with the consent of both parties.

Those who are recognized, after their wounds are healed, as incapable of serving, shall be sent back to their country.

The others may also be sent back, on condition of not again bearing arms during the continuance of the war.

Evacuations, together with the persons under whose directions they take place, shall be protected by an absolute neutrality.

Art. VII. A distinctive and uniform flag shall be adopted for hospitals, ambulances and evacuations. It must, on every occasion, be accompanied by the national flag. An arm badge (brassard) shall also be allowed for individuals neutralized, but the delivery thereof shall be left to military authority.

The flag and the arm badge shall bear a red cross on a white ground.

Art. VIII. The details of execution of the present convention shall be regulated by the commanders-in-chief of belligerent armies, according to the instructions of their respective governments, and in conformity with the general principles laid down in this convention.

ADDITIONAL ARTICLES.

Art. III. Under the conditions provided for in Articles I and IV of the Convention, the name "ambulance" applies to field hospitals and other temporary establishments, which follow the troops on the field of battle to receive the sick and wounded.

Art. V. In addition to Article VI of the Convention, it is stipulated that, with the reservation of officers whose detention might be important to the fate of arms and within the limits fixed by the second paragraph of that article, the wounded fallen into the hands of the enemy shall be sent back to their country, after they are cured, or sooner if possible, on condition, nevertheless, of not again bearing arms during the continuance of the war.

Now, gentlemen, what should be the policy of the National Guard in the matter of assimilating its administrative methods with those of the regular army? We assemble in these encampments for the purpose of learning, through object lessons, the art of war;

and unless the modern text is followed our labors will be futile, and in the day of trial we will be as novices — indeed in worse case than they, because we must undo old methods before attempting to learn new ones. We must not forget the lessons of our own war, nor disregard those that have been set before us by wars among foreign nations. The military world is progressing quite as rapidly as is the civilized world, and while its modern inventions for the destruction of life, by long range weapons having marvellous accuracy of fire, by smokeless powder, by improved tactical movements and by applied electricity, etc., are promptly adopted as matters of imperative necessity to the military body, no effort should be left undone to secure ample recognition of modern methods for the saving of life, and for the preservation of the health of men who are willing to serve their State in the National Guard.

It may appear a useless task to appeal to legislative bodies for changes in time-honored laws, but nothing can ever be done without the trial, and I am satisfied that when the economy of hygienic and sanitary methods is understood by these bodies, to say nothing of their increased efficiency over old methods, that success will eventually crown such efforts. Let us have the Guard so organized that it can join hands with its professional brothers and meet any emergency without a cross-purpose in administration.

Original Articles.

HYPERÆSTHESIA OF THE VAGINAL ORIFICE A CAUSE OF REFLEX PELVIC PAIN.[1]

BY CHARLES P. STRONG, M.D.,
Physician to Out-Patient Department, Massachusetts General Hospital; Assistant Surgeon, Free Hospital for Women, etc.

THE existence of pain in the female pelvis finds today so ready an explanation by disorders, functional or organic, of the uterine appendages that the attention of the general practitioner is frequently diverted from other anomalous conditions which are in themselves potent in the induction of reflex symptoms. Among enumerated causes, I have never seen mentioned that condition of the vaginal introitus of which the prominent symptom is hyperæsthesia or excessive irritability of the vaginal orifice, or, as more commonly called, vaginismus. While the marital state offers, naturally, the more ready detection, yet in virgins its existence is accompanied by manifold symptoms. Richly supplied by nerves, even more so than the uterus itself, any disturbance here induces, through the sympathetic system, changes in the circulation which may lead to protracted and chronic changes in the pelvic circulation, a result that has pain as its prominent symptom.

I have the records of a very considerable number of patients in whom I have found the results of chronic hyperæmia of the pelvis, but who have been cured by treatment of the hyperæsthesia of the vaginal outlet solely; that is, that portion of the vulva which includes the hymen and the fossa lying between its lower posterior boundary and the fourchette. A typical case occurring in a virgin is the following:

Miss H., thirty years of age, consulted me in September, 1888. She was of extremely nervous temperament, a teacher in a young ladies' school. She has been compelled to abandon her literary work a portion of every year because of pain in the pelvis over the so-called "ovarian regions" and other accompanying reflex disturbances of the sympathetic nerves. She had received advice and treatment from skilled specialists in New York and other cities, with but temporary relief. Dysmenorrhœa and general debility formed part of her troubles..

I found no organic disease, but the organs in the pelvis were hyperæmic in the extreme — the ovaries large, soft and tender; varicocele of the broad ligaments; passive conjestion of the uterus attended with enlargment of that organ and profuse muco-purulent discharge. The vulva was reddened. Numerous bright-red elevations (the size of a pin head and smaller studded the membrane between the fourchette and the remains of the hymen. At this point the irritability was so marked that I was unable to secure a thorough examination without ether. Treatment had for years been directed to the improvement of the above-mentioned lesions, *except* the condition of the vaginal orifice; and it was at first my own intention to endeavor to relieve by some means the pelvic congestion, but at the outset I was defeated in this because the passage of a speculum or even a syringe-nozzle caused such excessive pelvic pain.

The operation, being practically alike in all cases, may be described here. It differs from that in ordinary practice in that it is much more thorough. I remove completely the hymen and underlying subcutaneous tissues, extending the dissection down to the outside skin, including all the portion lying between it and the fourchette. Then divide the perineal muscles until the vulva can be widely stretched, the incision varying from one-half to five-eighths of an inch in depth. The edges of the mucous membrane and the skin are then approximated, also the cut surface of the perineal muscles, laterally, leaving only a small portion to heal by granulation. There usually is but little pain, and convalescence is complete in about a week. The glass plug is worn both day and night at first, but afterward only at night and inserted once during the day.

An examination, in the case above related, at the end of a month, showed decided improvement. The ovaries were no longer lying loosely in the cul-de-sac; the general flabby condition of the broad ligaments had disappeared; the uterus was involuting, and exercise or mental strain no longer induced pain in the pelvis. For nearly a year the dilator was employed systematically. I had a letter from this patient last summer, saying she was perfectly well locally except for dysmenorrhœal pain, but that her nerves were worn out again, and she wished to come to the city for general treatment this winter. This statement disproves the possibility of neurasthenia being the cause of her suffering and pelvic pain four years ago.

CASE II. Mrs. A., age twenty-four, married four years, consulted me in July, 1884. An unfruitful marriage, the result of dispareunia, brought her to me. She was a finely developed woman, but the victim of the most intense vaginismus I have ever seen. Touching either lightly or firmly the same region described in Case I, caused intense tonic spasm of the vaginal muscles followed by pain over the uterus and both ovaries. Attempts at coitus had long been abandoned. I operated as in Case I, and the records of the examination made at that time show substantially the same pelvic lesions present, in addition to chronic endometritis. Immediate relief was as marked as in the previous case. All attempts at coitus were prohibited for three months. A letter from her husband dated shortly after that time stated that if pregnancy could only take place their happiness would be complete, as in all essentials their marital relations were perfect. The patient was confined two years ago.

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[1] Read before the Boston Society for Medical Improvement, October 10, 1892.

Case III. Mrs. B., age thirty-two, married eight years, multipara. Perfect coitus had never taken place. Each attempt induced great and prostrating pain locally and also in the right ovarian region, which confined her to bed. I could detect nothing abnormal except a congenitally small vagina and uterus in addition to an excessive hyperæsthesia of the same portion of the introitus as described above. A similar operation to that mentioned before was performed, but less satisfactory as the congenitally undeveloped condition permitted of much less degree of dilatation. However, this was sufficient to permit of carefully conducted coitus; and for about four months there was marked improvement in the pelvic pain. A prolonged absence from home and neglect to use the glass dilator allowed a decided return to a contracted vagina and coincidently a return of the pelvic pain of the right side. At my last examination, in June, 1892, about eighteen months after the operation, I advised a repetition of the same operation. I have reported this case because, although not so happy in the termination, it shows even more conclusively than the others the relation of cause and effect between the hyperæsthetic condition of the introitus vaginæ and pain in the pelvis, and that the vaginismus was a primary not a secondary symptom.

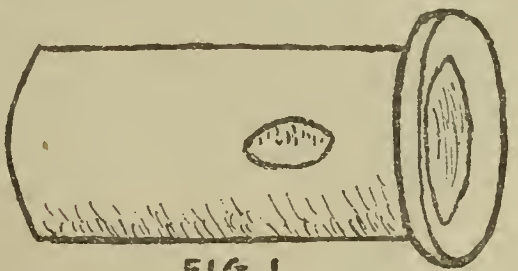

FIG-1

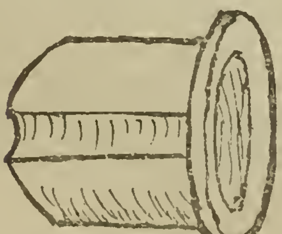

FIG-2

Fig. 1. Usual form of glass vaginal plug.
Fig. 2. Modified form of glass vaginal plug.
These cuts are one-half the actual size.

To render the convalescence less painful, I have so modified the glass dilator or vaginal plugs as to avoid pressure against the uterus or against the urethra. This was accomplished by making them shorter and extending the urethral groove the entire length of the plug. As commonly made, they are from three to four inches long. I have reduced that to one and one-fourth inches. The ordinary urethral groove is a depression of about one-half inch, making a dent into which the urethra prolapses and strangulates; but in my modification absolutely no pressure is brought upon the urethra, which lies easily in the sulcus.

Clinical Department.

TWO CASES OF MALIGNANT ENDOCARDITIS.[1]

BY E. G. CUTLER, M.D.

Case I. J. R., aged eighteen, born in Nova Scotia and living in Winchester, a carpenter by trade, was admitted to the Massachusetts General Hospital on July 5, 1892, with the following history: The father is strong and well; mother died of inflammation of the bowels; two sisters living; one brother died of croup. Does not use alcohol or tobacco, and denies venereal disease. Has had the usual diseases of childhood. Never sick before, always strong. Had been feeling ill for five days, when six days ago at night had a bad pain in the back and legs. Next day, on rising, was weak and dizzy; and because of the pain in the back and general illness, has since remained in bed. No chill; no diarrhœa. Bowels moved with medicine. Slight cough. Nose-bleed this morning. Backache is severe now.

Examination shows the face to be flushed, the patient to be slightly stupid and to have a stupid look. The tongue trembles when protruded; has a white rather dry coat, and a median fissure. Abdomen is distended and tympanitic. Spleen not felt. Area of splenic dulness not increased, but thought to be masked by distention. Few doubtful rose-spots on the back. Heart and lungs negative. Pulse of fair strength and character, 100 in the minute; temperature 101.9° F.; respiration 34. Urine scanty, high-colored, acid, 1,027, slight trace of albumen, no sugar, sediment slight and consists of squamous epithelium only. No diazo reaction.

The patient remained about the same for the next two days as regards symptoms, except the fever got a little higher and a distinct diazo reaction appeared in the urine: also it became necessary to pass the catheter, twice a day. He was believed to have typhoid fever. After about a week the pulse became dicrotic slightly, the abdomen remaining distended; and the stools became typhoidal in look, and numbered from one to three or four daily. Ten days after entrance a sore spot was found over sacrum, not red, which healed readily.

From the thirteenth to the twentieth of the month (fifteenth to the twenty-second day since going to bed, twentieth to twenty-seventh of illness) the symptoms all improved and the temperature steadily declined, the patient appearing better in all ways. That night, however, he became slightly delirious, and the pulse got irregular and more dicrotic. Next day the patient was rational, but picked at the bed-clothes and sweat freely. At night much more delirious, but next day and night seemed much better. Urine the same as at entrance, practically, containing a trace of albumen, a few clumps of pus, some normal blood, one pure hyaline and a doubtful fine granular cast, amorphous urates.

By the twenty-sixth day of his taking to bed he got to looking very badly, with hollow eyes and collapsed countenance; he failed steadily through the day, and died at one o'clock at night. Repeated examination of the heart up to the last two days of life revealed nothing.

The autopsy, by Dr. F. B. Mallory, fifteen hours after death was as follows: Body well developed, fairly well nourished; rigor mortis present; lividity of dependent portions. Head not opened. Heart of normal size; aortic valve incompetent; small masses of soft gray and reddish vegetations on two of its cusps, one of which had ulcerated along its line of attachment on one side and was torn from the wall; other valves and cavities normal. Lungs. dependent portions injected and œdematous. Spleen large, fairly firm on section; surface purplish; follicles distinct, in places appearing larger and softer than normal (embolic abscess); some increase in pulp. Capsule of kidneys pealed off readily, showing a few purplish areas, largest three-quarters of an inch in diameter, studded with yellow points out of which pus could be squeezed. Similar points and streaks were found, on section, in the pyramids. Kidney substance less translucent than normal. Ureters considerably dilated. Stomach normal. On the intestine, Peyer's patches showed a fairly well-marked shaven-beard appearance; solitary follicles moderately swollen; no ulcerations. Two or three mesenteric glands in the ileo-cæcal region were as large as small beans. The rectum and bladder were pushed forward by a retro-peritoneal fluctuating tumor which nearly filled the pelvis. On opening there escaped over half a pint of greenish-yellow offensive pus. The walls of the abscess were rugged and shreddy. The pus had burrowed beneath the psoas muscle on the left side along the sacral nerves and behind the sacrum. Three fingers could be passed through an opening in the left side of the pelvis into a sinus over the great trochanter and down behind the head of the femur as far as could be reached. Rectum, bladder and prostate normal. No erosions on bones could be found, although sacrum and last lumbar vertebræ were removed. In the right common iliac vein was a thrombus, about two and a half inches long, half filling the lumen and adherent to the inner wall. The central portion was yellowish and soft. Liver was pale and opaque; lobules indistinct; surface dry.

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[1] Read before the Boston Society for Medical Improvement, October 10, 1892.

Diagnosis: Unsufficiency of aortic valve; vegetative and ulcerative (malignant) endocarditis; rupture of cusp of aortic valve; œdema of lungs; acute splenic tumor (with miliary abscesses [?]), embolic abscesses of kidneys; granular degeneration of kidneys and liver; retro-peritoneal abscess (pelvic); abscess over head of left femur; septic thrombus of right common iliac vein.

I was inclined to consider the case, from a clinical standpoint, as typhoid fever, with the endocarditis and abscesses as secondary to it; but Dr. Mallory found no evidence of typhoid, and careful consideration has since convinced me that he is right, and that the cause of the endocarditis is unexplained unless the pelvic abscess developed first.

Case II. June 30, 1892. P. J. D., age eighteen, Boston, clerk in registry of deeds. Family history unimportant. Good habits, and aside from a lung fever ten years ago, has been perfectly well. Five days ago eat ice-cream, soon had vomiting of a greenish character; pain in the epigastrium, no diarrhœa, but slight fever. Four days ago had fever and shivering, not followed by sweating, after which felt weak and ill. Since then has had several of these "chills," coming on at any time in the day. No headache, backache or other symptom. Bowels have moved daily by the aid of medicine. He is well developed and fairly nourished. The heart and lungs are negative. Abdomen not distended, slightly tender over the epigastrium. Spleen not to be felt; apparently not increased in size on percussion. Urine high-colored, acid, 1,030, a slight trace of albumen, no sugar, sediment contains an excess of mucus and a small amount of pus. Temperature on entrance 100° F.; pulse 96; Respiration 18. For the next few days he had irregular rises of temperature, as shown by the four-hour chart, unaccompanied by sweating. No enlargement of spleen could be detected. At night restless and moaning in sleep. Examination of the blood failed to show the plasmodium malariæ.

At the end of a week, his symptoms had nearly all disappeared and he seemed much better. In a fortnight he was up and dressed, free from symptoms, and went out of doors feeling perfectly well, remaining in the hospital only to regain strength, and because, though he claimed to be perfectly well he did not look so to me.

The seventeenth day after entrance, "after sitting by a window in a draught," had chilly sensations and a rise of temperature, followed by headache and dry skin. This was repeated for two days, when a smart rise of temperature in the afternoon was followed by sweating, and he felt mean and ill. These chills and sweatings came on at irregular intervals, and no local manifestations were found, except after a time there was pain over the lower lobe of the right lung, and a friction rub with fine moist râles on inspiration, and a slight muco-purulent expectoration containing some blood. These signs cleared up very soon. Heart, lungs and abdominal organs were negative on exploration. Repeated examinations of the blood were negative. Two or three chills occurred daily right along, some followed by sweating, but mostly not. Finally, after repeated examinations, a faint, systolic mitral murmur was heard which continued to the end; the splenic area of dulness was increased. In a few days there was also increased liver dulness and a slight prominence in the epigastrium; hepatic and splenic areas continued to increase for the next two days somewhat, and with strict antisepsis the prominence over the liver was aspirated and a little pus withdrawn, which on immediate examination by Dr. F. B. Mallory was found to contain bacteria. Patient was transferred to the surgical side and operated on, about two ounces of pus being let out on free incision. The disease had already been diagnosticated as malignant endocarditis and an unfavorable prognosis given so that the family was prepared for the fatal termination, which occurred a few days later. No autopsy was allowed, but the type of disease was such that there seemed little doubt of the diagnosis of malignant endocarditis.

A CASE OF VAGINAL HYSTERECTOMY FOR EPITHELIOMA.[1]

BY D. E. BAKER, M.D., NEWTONVILLE, MASS.

On September 2, 1889, I was called to examine Mrs. W., nearly seventy years old, who for six months had been subject to severe aching pain in the pelvis, foul smelling vaginal discharge, occasional hæmorrhages (increasing in frequency and profusion of late), and difficult micturition (especially after standing for any length of time). There had been gradual failure of strength; the odor had taken her appetite. She had suffered for twenty-five years with falling of the womb, brought on by too early and constant hard work after her four confinements. For six months there had been a running sore at the mouth of the womb; and a tumor formed, which had doubled its size and annoyance in the last half of that period of time.

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[1] Read before the Waltham Medical Club.

On examination, I found the uterus in procidentia, with an epithelioma involving the cervix and about an inch of the anterior wall, and to a less extent the posterior and left lateral walls of the vagina. Portions of the mass were hard and horny to the touch, and others were gangrenous and sloughing. The cervical canal was occluded.

I advised her to use hot water to relieve the pain, and at night a laudanum fomentation, which gave her a few nights of restful sleep. I told her that the only measure that promised relief was to remove the uterus, and then found that she had applied at the Massachusetts General Hospital for relief, and been recommended for admission and operation. She had decided not to enter the hospital, and preferred to take her chances at home.

With local disinfection and a nourishing diet, she improved in strength and appearance; so that, obtaining her consent, I decided to extirpate the uterus on September 10th. On that date, assisted by Drs. F. E. Porter and A. D. Kingsbury, I operated by Martin's method, which I learned of him personally in Berlin. I first brushed over the projecting mass with chloride-of-zinc solution, and cut the superficial portion away to facilitate an antiseptic operation. I then dissected up the mucous membrane of the anterior vaginal wall, outside of and beneath the growth, and then of the posterior wall in the same way; after which I opened Douglas's fossa. Then, passing sutures laterally from this opening through the vaginal and peritoneal membranes with the intervening tissues, I severed the broad ligaments as fast as sutured until I could retrovert the fundus into the vagina. The bladder attachment was then sutured and severed in like manner, and the operation completed by passing a strip of iodoform gauze into Douglas's fossa, and an antiseptic dressing, after thorough irrigation with a 1 to 3,000 corrosive solution.

The patient was quite weak at the end of operation, but rallied well from it; and, with a hypodermic of morphia, passed a comfortable night.

The next day she took a fair amount of nourishment, and retained most of it. The third day tympanites became quite marked, and there was a rise of temperature to 100.4°. A saline cathartic gave prompt relief. Opium was again used to quiet pain, but was omitted upon the return of tympanites, and the saline again administered, to the relief of the patient. Subsequently any abdominal symptoms were dispelled by opening the bowels by salts or by enema.

Patient had some pallor and weakness at times for several days; but the use of brandy was sufficient to restore her strength. The kidneys suffered no impairment of function. Appetite and nutrition improved after the fourth day. I removed the gauze and a few sloughs at the end of the first week, and the wound closed in four weeks; but on the left side the granulations were of a suspicious character at the end of that time, and I packed absorbent cotton wrung out in chloride-of-zinc solution against this portion of the wound, and after the slough separated, the wound healed without further attention. The patient sat up after four weeks, and got down stairs in two months.

I had hoped for relief of the prolapsus by the operation; but the vaginal walls had been stretched so long and so persistently, that relief in this direction was slight indeed; and she has worn a perineal support most of the time since, as she is not inclined to take ether again or try operative relief for a condition which she claims, gives her little discomfort. If she stands long on her feet, there is some difficulty in passing water, and a dragging sensation in the pelvis. She does her own housework, and is in better flesh and strength than for many years.

I have learned that extirpation of the uterus does not necessarily relieve prolapse of the vagina and the bladder secondary to the displaced uterus; yet cases have been reported where this operation has relieved a downward bulging of the pelvic floor without plastic operation as a supplementary measure. Vaginal hysterectomy is steadily gaining ground as the radical relief of uterine cancer. Some go so far as to term the various amputations, including the high operation, as abandoned steps in the development of operative relief to this ultimatum. In excavating carcinoma of the cervix, and in malignant disease of the body where there are no enlarged glands nor extensive infiltration of the broad ligaments, I believe it to be the one operation worthy of adoption. The early operation will give the longest relief. To operate on advanced cases with involvement of the glands will confer but a brief respite upon the sufferer, and discredit the operation.

It is sometimes useful to combine or supplement cutting operations for cancer with the actual cautery or with escharotics, such as chloride-of-zinc, arsenical paste and caustic potash. These measures have repeatedly eradicated remnants of the disease that had escaped the knife.

Note. — The woman was seen the last of September, 1892, and there was no sign of recurrence of the disease.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

TREATMENT OF URIC-ACID GRAVEL.[1]

During the past summer there has been published by Dr. William Roberts a noteworthy contribution to our knowledge of the chemistry and therapeutics of uric-acid gravel and gout. It would be out of place here to give any outline of the chemistry of the subject; but some of the conclusions in regard to uric-acid gravel have a direct interest for the physician. The author shows that the factors which chiefly control the precipitation of uric-acid in the urine are the degree of pigmentation of the urine, the proportion of salines, the percentage of uric-acid, and, above all, the grade of acidity in the urine. With regard to the first of these, the deficiency of pigments as a contributory factor in the promotion of uric-acid gravel, no facts are offered, and probably none are needed, at least from a therapeutic standpoint, as the well-fed population of England presents no deficiency of pigment in their urine. With respect to the amount of salt which ought to be taken with the meals, experimental evidence points in the direction of advising the use of as much salt as the palate will tolerate. Among those who practice in the rice-eating populations of tropical and sub-tropical countries, or the children of the poor, it is well, in cases of gravel, to see that the patient's food contains an adequate proportion of articles rich in saline materials, such as milk, meat, fish, eggs and salads.

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[1] Lancet, June 25, 1892.

The proportion of uric-acid in the urine does not depend simply on an excess of this substance in the urine, as is very generally supposed. This assumption is only partially true, since the percentage of uric-acid is only a subordinate factor in the determination of uric-acid precipitation. After meals the percentage of uric-acid in the urine reaches often a high level; and yet there is less risk of precipitation at this time than at any other period of the day. On the other hand, uric-acid is sometimes thrown down in the urinary channels when its proportion in the urine does not exceed the normal average, or even when it falls considerably below the average. It is, however, true that a high percentage of uric-acid in the urine is a valid factor in the production of gravel when other favoring conditions coincide.

As regards diet, some recommend that the subjects of uric-acid gravel should avoid sugar and fat and fruit. The most reliable investigations indicate that fat, sugar and starchy matters have not the slightest direct influence on the production and excretion of uric-acid. The only point which is really clear is that the excretion of uric-acid is diminished by lessening the albuminoid ingredients of the food, and that it is heightened by increasing these ingredients. But as this class of foods is essential to nutrition, they cannot be diminished to any very serious extent without injuriously affecting the patient. It is suggested, in the matter of diet, that persons who are subject to uric-acid gravel, and who are also troubled with a large appetite, should use farinaceous foods freely, together with salads, fruit and garden vegetables.

The important determining condition for precipitation of the uric-acid in the majority of cases is excessive acidity of the urine; and the indication for preventive treatment is to diminish this acidity. All other schemes of treatment are insignificant in comparison with this. This stands on a perfectly secure chemical basis. Uric-acid cannot be deposited from an alkaline urine, nor can it be deposited within the urinary channels from a neutral or feebly acid urine. We can reduce the acidity of the urine at pleasure; but the tendency which we wish to overcome is one which continues through long periods, months or years. Fortunately it is unnecessary to keep the urine alkaline or neutral over so long a period, for it is known that the normal variations in the amount of uric-acid in the urine during the twenty-four hours suggests that the liability to uric-acid gravel is limited to certain portions of the day. The risk in gravel is almost confined to precipitations which take place within the precincts of the kidneys. Precipitations which take place within the bladder are harmlessly swept out at the next act of micturition. These latter probably only do harm when there is already a stone in the bladder to which the crystals can accrete, or when a pouch exists in the viscus to receive and detain the deposit.

It seems that the time when there is most risk of precipitation in the kidneys is during the time of sleep, and especially in the early morning during the two or three hours preceding breakfast.

The deposition of uric-acid is most imminent when there is a conjunction of several conditions, such as a scanty, hyperacid secretion which is rich in urates. These conditions are most fully developed during the period of sleep. In short, if we take care of the night, the day may usually be left to take care of itself. In the milder cases a single full dose of the alkalizing agent taken at bed-time suffices to prevent the recurrence of the colicky pains and the discharge of uric-acid concretions. For this purpose the citrates and bicarbonates of potash and soda are the most effective. Of these, the citrate of potash in doses of from forty to sixty grains, dissolved in three or four ounces of water is, on the whole, the best preparation to employ. In severer cases a second but smaller dose should be taken about the middle period of the hours of sleep. As regards the length of time over which the alkali extends its influence on the urine and the amount of dose required to reach an effective result, Dr. Luff, who has made a special study of these points, finds that a dose of forty grains of citrate of potash taken at 11 P. M. extends its influence through the night and up to eight o'clock the next morning. The effect on the morning urine is very slight. Sixty grains had a more considerable effect, and often rendered the morning urine actually alkaline. A corresponding dose of the acetate of potash appeared to act more rapidly, but its effect was less enduring than that of the citrate. The carbonates of lime and magnesia were found to be quite ineffective as alkalizing agents on the urine.

As each meal acts on the urine as a dose of alkali and also as a diluent, it is thus doubly protective against uric-acid precipitation. After a meal is absorbed and assimilated, the urine becomes again increasingly acid and concentrated, and, as a consequence, increasingly prone to precipitate uric-acid. Subjects of gravel should, therefore, be warned not to allow too long an interval to elapse between their meals, especially between breakfast and the midday meal.

The essential thing in the prophylactic treatment of uric-acid gravel is to guard the urine from precipitating within the precincts of the kidney. Other things being equal, the more acid the urine the earlier is the precipitation, and the less acid the urine the longer is the precipitation postponed. An anti-acid effect, therefore, which is too feeble to render the urine actually alkaline may be quite sufficient to depress its acidity to such a degree as shall postpone the time of precipitation until the urine has escaped from the kidneys and even from the bladder. In regard to the treatment of uric-acid gravel by the use of waters at mineral springs, a sharp distinction should be drawn between alkaline and non-alkaline springs. Alkaline springs, such as those at Vichy, which are largely impregnated with carbonate of soda, have the power of rendering the urine alkaline, the non-alkaline waters have no such power; their only service is to flush the kidneys, and they are no more efficacious than the same quantity of distilled water.

The time during which treatment can be kept up at a spa is, as a rule, limited; but preventive treatment ought to be available the year through. We have at our disposal a choice of efficient substances with which to alkalize the urine, and even in moderately prudent hands no harm can follow their use. If a vigilant watch be kept on the imminence of uric-acid precipitation in the fasting urine, there is no reason why sufferers from uric-acid gravel should not, by a prompt resort to suitable remedies, protect themselves effectually against fresh formation of uric-acid concretions, and thus be spared much pain and danger.

ACTION OF SOME ANTIPYRETICS OF THE AROMATIC SERIES ON THE BLOOD.

In the *British Medical Journal* of October 15th there is a brief abstract of the work of Schmitt, taken from the *Rev. Méd. de l'Est* for a month earlier.

These antipyretics are still so much used by some practitioners that whatever will conduce to their intelligent administration is of value.

His studies included the action on the blood of fourteen of the modern antipyretics, and confirm the explanation of some of the unpleasant accidents which have at times followed their use. It has been found that all of these aromatic drugs when used as antipyretics produce in variable degree changes in the blood, that is, change oxy-hæmoglobin into methæmoglobin, cause a diminution of the respiratory capacity of the blood, and even destruction of the red corpuscles. These changes vary in intensity with the nature and dose of the drug studied, but for each drug are directly proportional to the degree of reduction of temperature produced.

Antipyrin and phenacetin, in medium doses, fix the oxygen more firmly to the hæmoglobin.

Thallin, antithermin, kairin, exalgin, methacetin, in moderate doses, produce simple intracorpuscular methæmoglobinæmia.

Acetanilide, pyrodin, in moderate doses, especially if repeated a few times, produce methæmoglobinæmia with destruction of corpuscles.

From his investigation the author concludes that, save occasionally in cases of hyperpyrexia, for their temporary action in reducing temperature, the antipyretics should be very sparingly used. Though they may be good analgesics in patients with healthy blood-corpuscles, their value as antipyretics is open to question on account of their deleterious effect upon the blood.

THE ACTION OF BROMIDE OF ETHYL.[2]

Dr. Thornton and Edwin Meixell contribute, from the Laboratory of Experimental Therapeutics of the Jefferson Medical College, an interesting article upon this anæsthetic. They believe that this substance has been discarded by many too hastily, and has been used under conditions unsuited to it, namely, for operations which continue for more than a few minutes. It is important that the drug be administered rapidly, that is, pushed during the few moments necessary to produce anæsthesia, and not given in a highly diluted form for several minutes. The liquid is slowly decomposed by exposure to the air or to bright sunlight. It should be purchased only in small quantities so that all of it may be used in one or two anæsthesias.

As the result of the study of its action on dogs and rabbits, they find that the dominant action is upon the respiratory and not on the circulatory system; that it is a depressant to the respiration only when excessive doses are used; and that cardiac failure is the result of continuous asphyxia rather than of a direct effect upon the heart.

The failure of respiration, when it did occur, was not sudden; the breathing might gradually cease and after a short time start up again if the amount given had not been excessive. This may be explained by the fact that bromide of ethyl is the most volatile of all the common anæsthetics, and therefore fleeting in its action. A patient who may have stopped breathing under it may readily have it thrown out of the lungs by a few movements of artificial respiration. Another advantage which this anæsthetic is claimed to have is that it is not irritating to the upper respiratory tract.

The conclusions from clinical studies already published, and from these experiments, suggest that it is a safe anæsthetic for minor or brief operations and for the relief of the pains of labor, since its effects are exercised so rapidly that the patient is unconscious during a pain and yet returns to consciousness at once.

A NEW COCA BASE, TROPACOCAINE, AS A LOCAL ANÆSTHETIC.[3]

Recently Dr. Giesel has isolated a new coca base from the small-leaved coca plant of Java; and Liebermann has shown it to be benzol pseudotropein, and then made this substance from it synthetically. It is related to atropine, and has been called tropacocaine. As it is insoluble in water, its hydrochlorate is used. It was given by Professor Oscal Liebreich to Dr. Arthur P. Chadbourne, who studied its physiological and toxic action on animals in the Pharmacological Institute at Berlin. A summary only of his excellent experiments is here quoted, and, following it, his account of the trials made by Professor Schweigger in his clinic.

"The most important differences between the action of tropacocaine and cocaine on animals are probably the following:

"(1) Tropacocaine is less than one-half as toxic as cocaine.

"(2) The depressing action, both on the cardiac motor ganglia and the heart-muscle, especially the latter, is much greater with cocaine.

"(3) Local anæsthesia, both of the eye and skin, is much more quickly complete with tropacocaine, and is possibly of longer duration.

"(4) Slight hyperæmia is occasionally present, but quickly disappears, while with cocaine only ischæmia is seen.

"(5) Mydriasis is usually absent, but always seems to be less than after cocaine.

"(6) Solutions of tropacocaine are moderately antiseptic, and retain their strength for at least two or three months. Cocaine solutions often begin to lose their activity when only three or four days old.

"Professor Schweigger, who has used tropacocaine in his ophthalmic clinic, finds that the muriate of tropacocaine causes complete anæsthesia more quickly than a cocaine solution of the same strength. This anæsthesia does not last as long as that produced by cocaine; but a drop or two of the solution can be added from time to time, and complete anæsthesia thus kept up as long as is necessary.

"Mydriasis was occasionally seen, but only in slight degree. No ischæmia was present; on the contrary, in a few cases there was very slight congestion for a few seconds. A few patients spoke of slight smarting; but this disappeared almost immediately, and was hardly greater than that from distilled water. Both of these symptoms are much less where the tropacocaine has been dissolved in physiological salt solution — six-tenths per cent. aqueous solution of pure sodium chloride — instead of distilled water.

"No harmful symptoms of any kind were seen, and in most cases tropacocaine seems to be as good — in some cases better — than cocaine. For the extraction of foreign bodies from the eye tropacocaine is preferable to cocaine because of its quicker action; and iridectomy has been performed in less than two minutes after one or two drops of a three per cent. tropacocaine solution had been put upon the eye and without pain being felt by the patient."

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[2] Therapeutic Gazette, September, 1892.

[3] British Medical Journal, August 29th; Therapeutische Monatshefte, September, 1892.

(To be continued.)

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Concluded from No. 20, page 482).

URINARY INFECTION.

HALLE[14] has drawn the following conclusions from research and experimentation:

(1) That the sole causes of urinary infection are micro-organisms.

(2) That the mode of infection, in the vast majority of cases, is through the urethra, and may be either spontaneous or surgical, while there are a few authentic cases of infection through the circulatory system.

(3) That the necessary condition for infection, after the introduction of the microbes, is the retention and stagnation of urine in the bladder, where it forms a perfect culture medium, and that, therefore, the least retention of urine is a real danger.

(4) That the pyogenic action, where no traumatism exists, is secondary and only possible after certain species have produced a catarrhal cystitis through their power to render the urine alkaline, but that where a traumatism is present, others may cause suppuration without alkalinity of the urine.

(5) That systemic urinary infection may be either ascending or descending, and is micro-organic; in the ascending, the infection is by continuity of structures, the ureters and pelvis of the kidney being involved, while abscesses are found in the pyramidal substance; in the descending, the infection is embolic, and due to the presence of the pyogenic urinary microbes in the blood, the only lesions being the multiple miliary abscesses in the cortical substance, due to emboli, the pyramids and pelvis of the kidney as well as the ureters remaining intact.

(6) That variations in the intensity of the infection are to be explained by the greater or less virulence of the infecting microbes and the condition of the patient and the apparent immunity from systemic infection in some cases, he believes to be due to what might be called an auto-inoculation by an attenuated virus.

COMPLETE PRIMARY UNION FOLLOWING SUPRA-PUBIC CYSTOTOMY.

Albarran[15] gives the following method of operation with above result, in two cases of vesical tumor: He made a longitudinal incision with the patient in the Trendelenburg position; the tumor was removed by free incisions extending well into sound tissues, and bleeding was controlled by six catgut sutures, used to make exact approximation of the edges of the wound. Free vesical drainage was secured by passing the catheter of De Pezzer from the bladder outward through the urethra, its trumpet shaped proximal extremity resting close upon the orifice of the urethra and its shape preventing all danger of displacement. It is to be frequently washed out with boric solution. and can be removed on the third to ninth day. The vesical and abdominal wounds were closed by four series of sutures: the first of catgut through the mucous membrane; and above this a Lembert suture of silk; while the abdominal walls were sutured by a deep catgut and a superficial silk-worm-gut suture, a small drain being introduced into the prevesical space at the lower angle of the wound, to be withdrawn in twenty-four hours, and a suture being left *in situ*, to be tied after the removal of the drain. The patients in these two cases recovered completely in ten and eleven days, one being seen in perfect condition seven months afterward, although they were fifty-two and seventy-three years of age respectively, and one so exhausted that preparations had been made for transfusion. Perfect drainage and arrest of hæmorrhage are indispensable.

THE OPERATIVE TREATMENT OF THE ENLARGED PROSTATE.

Keyes[16] arrives at the following conclusions in regard to the treatment by operation of prostatic hypertrophy:

(1) Prostatectomy is justifiable, and does what nothing else can.

(2) The perineal operation is somewhat less severe, but decidedly less reliable than the supra-pubic; it should rarely be preferred, unless there be urethral complications. In very feeble men it may still be elected.

(3) The operation is not justifiable, with present statistics, if the patient can be comfortable in catheter life.

(4) No physical condition of the parts or of the patient, short of a practically moribund state, contra-indicates operation. By it, in desperate cases, life is often actually saved, although the operation is a grave one, and its mortality high.

(5) With the rongeur, better than any instrument, the bladder outlet can be lowered, and polypoid or interstitial growths jutting into the prostatic sinus can be removed, and these points are more essential to a successful operation than is the taking away of a large portion of the prostatic bulk. The instrument next in value is the curved scissors, but the skilled finger is most important of all. Most of the work has to be done by the aid of touch, as the bleeding soon becomes free and renders visual inspection impossible.

(6) Diuretin, perhaps, is of value when the kidneys are damaged. It certainly does no harm.

(7) Chloroform alone should be used as an anæsthetic, for the sake of the kidneys.

THE REMOVAL OF NECROTIC AND CARIOUS BONE WITH HYDROCHLORIC ACID AND PEPSIN.

Morris[17] considers this subject. The early attempts at decalcification of dead bone were unsuccessful for two reasons: *First*, although the superficial layers of necrotic bone were easily decalcified, the deeper portions remained unaffected by the acids; especially was this the case if there was caseous infiltration or fatty débris. *Second*, cellulitis was apt to develop during the treatment.

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[14] Annales des Maladies des Organes Genito-urinaires, ann. x, No, 2: American Journal of the Medical Sciences, vol. ciii, No. 6, June. 1892.

[15] Annales des Maladies des Organes Genito-urinaires, 9e année, tome ix, No. 12; American Journal of the Medical Sciences, March, 1892.

[16] Medical Record, vol. xl, No. 18; American Journal of the Medical Sciences, February, 1892.

[17] New York Medical Journal, 1892, vol. lv, No. 12; American Journal of the Medical Sciences, October, 1892.

After much experimentation, the author has adopted the following method of treatment: An incision is made through the soft parts in the most direct route to the seat of dead bone, and, if sinuses are present, they are all opened into the one large sinus, if possible. The latter is packed with antiseptic gauze and allowed to remain quiet until granulations have formed. This is not an absorbing surface, and the danger of cellulitis is practically *nil.* The next step consists in injecting into the sinus a two to three per cent. solution of hydrochloric acid in distilled water. If the patient is in bed the injections may be made every two hours during the day; but if the patient is up and about, the acid solution is used at bed-time only. The patient should always take that position which favors the retention of the fluid. At intervals of two days an acidulated pepsin solution [three ounces pure pepsin, sixteen minims hydrochloric acid, four fluid ounces distilled water] is thrown into the sinus. This will deject decalcified bone and caseous or fatty débris in about two hours. This treatment is to be continued until the sinus heals from the bottom, showing that the dead bone has all been removed. Even in tuberculous cases this treatment proves successful when combined with immobilization of the part and tonic constitutional treatment. If there is free suppuration the cavity should be treated with a solution of peroxide of hydrogen before each injection.

Experiments made on the live turtle prove that exposed living bone is also susceptible to the decalcifying action of acids. In a five per cent. hydrochloric acid solution a piece of dried humerus of a man was decalcified in six hours. In the same solution the exposed part of the shell of a turtle was decalcified in thirty hours. Microscopic examination showed that the blood-vessels were destroyed where the shell had been decalcified. In practice, a wall of lymph and granulation tissue usually protects the healthy bone.

STREPTOCOCCUS OSTEOMYELITIS IN CHILDREN.

Koplik and Van Arsdale have investigated experimentally this subject at the Carnegie Laboratory in New York.[18] Some of their conclusions are very interesting. They believe that it is necessary to attack early this serious disease, and consider it necessary to freely expose the shaft of all affected bones, if the periosteum is loosened to remove the shaft, and if the epiphyseal cartilages are arroded and disintegrated that they should be removed. The cartilages should be treated by gouging, with preservation, if possible, of the epiphyseal line. It will be necessary to apply these principles considering the anatomical arrangement of the various joints. In suppuration of the knee-joint it is comparatively easy to drain. For the hip-joint exsection of the femur would be necessary. The shoulder-joint may be exsected with propriety in an adult, but in children interference with the epiphysis would mean a complete arrested development of the bone. The elbow and wrist joint can be efficiently drained. After partial excisions active antisepsis is to be preferred to simple asepsis. The writers recommend creolin in one to two per cent. solutions freshly prepared, where all the irrigating fluid cannot be removed from the joint cavity.

TREATMENT OF GUNSHOT WOUND OF THE SPINAL COLUMN.

Vincent[19] has classified the injuries as follows:

(1) "Simple compression of the cord by an extravasation of blood by a fragment of bone or by the projectile situated outside of the medullary canal." This is admitted the most favorable condition for surgical intervention, and he believes that in every case the removal of the projectile from the neighborhood of the spinal canal exerts a beneficial influence upon the inflammation.

(2) "The projectile has passed completely through the vertebral column, injuring the cord." If this diagnosis could be established there would be little need of operation; but in the generality of cases it cannot be, and there is usually some foreign body or splinter of bone remaining in the canal, and he advises always the division of the soft parts and a thorough exploration of the conditions present. There is but one contra-indication, and that is a co-existent visceral lesion that endangers the life of the patient.

(3) "The projectile is entirely or partially lodged in the spinal canal." Although success in these cases is rare he believes surgical interference, under antiseptic precautions, does not aggravate the danger and justifies surgical operative measures on the following grounds:

The presence of a foreign body in the medullary canal is a certain cause of irritation leading to myelitis and meningitis, and many patients recovering from the paralyses succumb to cysto-nephritis or septic complications and nutritive derangements created by this myelitis. By the removal of the foreign body and the antiseptic cleansing of the wound in the spinal column, the development of these inflammatory complications is hindered, if not entirely prevented.

In conclusion, he says that surgical intervention has contributed to save many wounded in these cases.

UNUNITED FRACTURES.

Oscar H. Allis[20] in an article on this subject calls attention to this important subject, which has not received the attention that it should. He suggests the use of carpenter's screws to unite the bevelled ends of bone together. He states that he was induced to adopt them from the fact that screws long enough to project from the wound, like those of Pancoast and Gaillard, were unnecessarily irritating. I select slim steel screws sold at hardware shops, and am guided as to their length by the size of the bone and the obliquity of the screwholes. The hole for the screw in the proximal fragment should be so large that the thread will not get a hold upon it. The screwhole, however, in the distal fragment should be small, so that the screw will gain a firm hold. With a screwdriver I then drive the screw down until the parts are firmly together — sometimes using two screws, sometimes one. I do not usually attach fine wires to the screws to enable me to find them. The screws, as a rule, are gradually forced from their beds by the reparative process, and can usually be picked from the surface of the bone after two months. I rarely need more than a pair of dressing forceps to remove the screw. After it is removed, the sinus, which has persisted throughout the entire course of treatment, soon closes without any evidence of partial necrosis that might be supposed to follow the use of the screw.

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[18] American Journal of the Medical Sciences, April and May, 1892.

[19] Rev. de Chir., 12e année, No. 2; American Journal of the Medical Sciences, vol. civ, No. 1, July, 1892.

[20] Medical News, January 2, 1892.

UNUNITED FRACTURES IN CHILDREN.

D'Arcy Power[21] has investigated this subject, and submits the following rules for the treatment of fractures in children:

Diagnosticate the fracture as early as possible, and in every case keep the fragments in perfect apposition. After the fragments have been secured, see that the apposition is maintained by exercising careful supervision, and, when necessary, by the readjustment of the retention apparatus. As in cases of adults, so in children, the most successful treatment of fractures depends upon attention to details. In cases where non-union has occurred the prognosis in regard to subsequent union is very bad. In such cases the ends may be resected, and the fracture treated by securing perfect immobility of the bone for a long period. If, however, there has been much wasting of either end, it will, I think, be found that resection is useless. In the bones of the upper extremity the resulting fibrous union, judiciously aided by a light artificial support, will occasionally enable the patient to pass his life in tolerable comfort. Under similar circumstances in the lower extremity, however, it will often happen that amputation alone affords the patient relief from his miserable condition.

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Samuel Lloyd. Laminectomy for Pott's paraplegia. Annals of Surgery, October, 1892.

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To Nurse Lepers. — In spite of the matrimonial ending of the mission of Sister Rose Gertrude, who started to sacrifice her life in nursing lepers in the Sandwich Islands, after the death of Father Damien from leprosy, a party of young American women from a religious sisterhood are now on their way to fill the vacant mission.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, October 10, 1892, the President, Dr. Frederick I. Knight in the chair.

Dr. E. G. Cutler reported

TWO CASES OF MALIGNANT ENDOCARDITIS.[1]

Dr. Knight: I should like to ask if the common liability in diagnosis would not be mistaking a case of malignant endocarditis for typhoid fever?

Dr. Cutler: I think so; and I think a person is often perfectly justified in making the error of diagnosis. It is not common to find that shaven-beard appearance in Peyer's patches and the evidence of trouble in solitary follicles so early in any disease. In certain protracted cases of septicæmia where there is a good deal of diarrhœa, it is not uncommon to find this shaven-beard appearance, but this patient had very little diarrhœa — if you look at the chart, you see it only covered a period not fully rounding out what we should have considered the second week of his disease. He did not commence to have his diarrhœa till about ten or twelve days after his illness began. Then it kept up two or three days; and, instead of getting worse as you might expect it in a case of ordinary septic poisoning, it improved and disappeared. The man himself got better in many ways. His temperature declined. He looked better, and spoke in a cheerful way. He lost his delirium, and seemed to improve permanently. That, however, is no uncommon thing in ulcerative endocarditis. Certain of these cases of ulcerative endocarditis drag on for weeks; some of them are said to last for months. This may have been of that sort. The case is quite incomplete in that we have not returns from the bacteriological investigation. The glands and Peyer's patches were removed to see if any organism which is found in typhoid was to be found in any of the organs; but Dr. Mallory has not had time to work it up yet. It is a case which is certainly open to doubt. I only say that the clinical appearance corresponded more with a case of typhoid. At the head of the bed, in cases of typhoid fever, it is the custom in my ward, at least, to put up a notice, "typhoid fever;" in certain others which we suspect may be typhoid, we put up a notice, "typhoid precautions." There was put up at the head of this man's bed, "typhoid precautions"; and we never changed it to "typhoid fever," although we felt that it was more likely to be that. Still we were not satisfied; there were some points about the case which did not seem to be complete. So that if any gentleman thinks it looks more like ulcerative endocarditis from the first, he has a good deal to say on his side.

I think the second case was undoubtedly one of ulcerative endocarditis. The origin of the second case I am at a loss to see. It might have been some disturbance in the upper part of the intestinal tract and followed from that. We gave quite a number of enemas to the first patient I spoke of, and at no time did he complain at all of the tube hurting the rectum. Towards the last he had a bed-sore. There was no tenderness over any part except over the sacrum. That was towards the last of the disease. The lesion in the heart was such that it would seem quite a time must have elapsed before the tearing away of the cusp of the aortic valve occurred. I do not know exactly how long it would be. Sometimes this process is pretty rapid; others take a good deal of time. But the amount of pus and burrowing found in the pelvis and thigh would be indicative of a tolerably long time. That could not have occurred in the last two days of the illness certainly.

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[21] American Journal of the Medical Sciences, May, 1892, p. 531.

[1] See page 497 of the Journal.

Dr. Strong presented the following

SPECIMENS:

This is a large multiple fibroid; this, a small cyst from the right broad ligament; this is the ovary and tube from the same side; and this the ovary and tube from the left side removed to-day.

The patient has been a chronic invalid for years. She has been married eight years, but was an invalid when single; more so, however, since marriage, and has been through considerable in the way of local treatment. A short time ago she was told there was nothing the matter with her locally, although she had marked endometrial discharges. She has been endeavoring to be built up by the rest-cure, etc. She would get pretty well, and then, on moving about a little, would break down.

I examined her last spring, and found this enlargement, which proved to be a collection of many small fibroids, but which I thought was the right ovary, as I could not feel that organ. This was in front of the uterus, growing between the anterior abdominal wall and the uterus, being evidently adherent to both. I was able to break up these adhesions under ether, so that there was established a comparative degree of mobility; which gave the patient great relief. During the summer she improved very much; but the latter part of the summer she again became ill, and had to give up all forms of out-door exercise, so that to-day I operated, finding the conditions presented here. The uterus is also one mass of little fibroids, the size of peas; and the ovaries and tubes were thoroughly adherent, so that they were all torn away. I felt this would probably cause retrograde changes enough to prevent development of the fibroids, which were within the uterine body. There was also a very extensive chronic peritonitis present, from which she would have been made an invalid. Her condition to-night is first-rate; and the operation, although very tedious, seemed entirely satisfactory. The pedicle of the fibroid I ligatured and cut away; but the ligature slipped, causing considerable hæmorrhage. A reinforcing ligature was put through the uterus, and then held very well.

Dr. C. P. Strong read a paper on

VAGINISMUS AN UNRECOGNIZED FACTOR IN REFLEX PELVIC PAIN.[2]

Dr. W. H. Baker: I have been much interested in Dr. Strong's paper because it treats the subject from an entirely different standpoint from that usually given; the uterine disease is generally considered the occasion of so-called vaginismus and we can readily understand how this spasm would seem to be nature's effort, in protecting the internal organs of generation, and how such condition of vaginismus may be established from uterine disease. I think it is exceedingly interesting to hear it discussed from the other standpoint as Dr. Strong has done; this hyperæsthesia of the vaginal outlet is itself a cause of uterine disease or of certain uterine disorders, some of which he has narrated. I think that Dr. Strong's method of operating, removing the membrane about the orifice of the vagina cannot be too highly praised: by removal of the membrane and bringing together the edges of the denuded surfaces thus doing away with a large amount of denuded surface which must under the ordinary method of operating heal by granulation and occasion a large amount of cicatricial tissue which is always objectionable in any part of the vagina, but more particularly objectionable at this point of the outlet. None of us who have seen how slight a cicatrix at the orifice of the vagina resulting sometimes from a slight tear of the perineum and seeing the great trouble that may be occasioned from its extreme sensibility, can fail to recognize the great importance of reducing to the minimum cicatricial tissue at this point. Dr. Strong has described the best method of accomplishing this object, I think he has also made a great gain in the sort of glass-tube that he uses. Shortening up the plug I think is of great advantage and lengthening out the groove to the end of it is still another advantage. I myself have been accustomed to overcome the discomfort about the urethra by having the nurse at times turn the plug completely around, — with the ordinary plug you will find that the urethra has sagged into this depression, becoming more or less livid, and that this condition will be overcome many times by turning the plug and letting the full pressure come on that part, and turning it back again when the urine is to be passed.

The question as to the process of development of uterine disease from this hyperæsthesia of the orifice of the vagina and particularly as it occurs about the fossa navicularis is an exceedingly interesting one to my mind, and this I did not hear explained by Dr. Strong, — I may have been inattentive at the moment and therefore not heard his explanation. I recall certain cases where the patient has been the subject of self-abuse, where from the irritation of the parts there was a condition of endocervicitis established, and of passive stasis of the uterus, and many times congestion of the ovaries. It thus occurs to me that in a similar way we may have uterine disease established from hyperæsthesia of the vaginal outlet. I have found in a certain number of instances where the special point of irritation was at the fossa navicularis and the membrane highly injected at this part, that a very slight amount of leucorrhœal discharge either vaginal or endocervical is sufficient to occasion the irritation which will excite the vaginismus. This discharge by bathing the mucous membrane at the point of the fossa navicularis, retained as it is in this depression for the longest time in contact with the membrane, is quite sufficient to establish an amount of hyperæmia and in turn of spasmodic action at the mouth of the vagina. I do not mean to imply that the cases Dr. Strong has reported were of this class. I am only speaking of this as a cause we sometimes find, and in such cases we should proceed to remove this source of irritation before resorting to any operative measures. I have seen the same condition occur from a highly irritating urine or from some element like sugar in the urine which would occasion this same sort of irritation at this point.

Dr. Strong: I am very glad indeed Dr. Baker has spoken about vaginismus, so-called,— I used that term in speaking of this instead of hyperæsthesia of the outlet because it means more to most of us, — in the general way that he did, because it was the point about which I intended to speak when I finished my paper. I did not allude to that in my notes because I did not wish to draw off the attention of the listeners from the point I wish to make, namely, that there were some cases in which that hyperæsthesia seemed to be the cause rather than the effect. I agree most thoroughly with what Dr. Baker says with regard to the vaginismus in most cases being the result of some uterine disorder characterized by endometrial discharge or perhaps, — and I think that explanation is a very true one; — caused also by nature's attempts to protect an enlarged and heavy uterus from being injured by coitus or treatment. I only intended to say that there were some few cases in which the condition of pain in the pelvis not yielding to improvement in the uterine conditions (if you were able to treat them) were cured and can be cured by treatment of the hyperæsthesia of the introitus, showing that that was the origin of the trouble. I say I am very glad Dr. Baker spoke about that so broadly because I would not wish to have the Society understand that I think vaginismus is responsible for the pelvic pain in all uterine disease, or in any except a rare number of cases.

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[2] See page 496 of the Journal.

Just why it should cause this condition which seems to be associated with it I do not know — I mean to say it seems to me it is entirely a reflex thing from the disturbance of the circulation in the pelvis and that coming from the disturbance in the sympathetic and the vasomotor systems exactly as with a sick headache we get cold feet and hot head. I think that many of the cases in which vaginismus is a prominent symptom are found among women who masturbate, — and I am constantly surprised at the number of women, even married women who are addicted to this habit, — so many more than I used to ever think of being; so that when I find a certain condition of the vaginal outlet, whether a woman be single or married, I always keep that as a possible factor in my mind and study that in its relation to the condition of the pelvic organs to determine if there are any other reasons why I should feel strongly enough convinced of the habit of masturbation to ask her directly in case she makes no confession.

DR. ABBOT expressed much interest in Dr. Strong's paper, and said he thought that vaginismus must be of very rare occurrence, as he could recall but a single instance in the course of his practice. He saw the patient for the first time in labor with her first child, having taken the place of her regular medical attendant who was unable to answer the call. There had been a somewhat profuse hæmorrhage at the commencement of labor, which was checked at the time of his arrival. On making an attempt to examine her the patient cried out, screaming at the slightest effort to pass the tip of the finger within the vulva. It therefore became necessary to put her completely under the influence of ether before this could be accomplished. There was found to be no great obstruction to the passage of the finger up to the uterus, and it was discovered that the hæmorrhage had been caused by a placenta prævia, the lip of the placenta having been attached across the os. This had now become free and the bleeding had stopped. On recovering consciousness the patient declared that at no time had there been complete coitus, the attempt causing such intense pain as to make it impossible.

The child's head was so large that after some hours of ineffectual labor it was decided to use forceps. These failing, and the child being found to be dead, the head was perforated, and after the escape of a certain amount of the brain the forceps traction was successful. The patient died, however, an hour after, apparently from exhaustion, although the loss of blood caused by the placenta prævia was no greater than often occurs in labor without any serious harm to the patient.

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THE NEW YORK ACADEMY OF MEDICINE.
SECTION ON ORTHOPÆDIC SURGERY.

STATED Meeting, October 21, 1892, HENRY LING TAYLOR, M.D., Chairman.

PSEUDO-HYPERTROPHIC PARALYSIS.

DR. L. W. HUBBARD presented a case of pseudo-hypertrophic paralysis, which, although not exactly orthopædic, might not be entirely without interest in connection with the paper of the evening. It was also more than usually interesting, as the condition is ordinarily not seen until a later stage. The boy had probably had the present trouble, since he was five or six years old. He did not begin to walk until he had reached the age of two and a half years, although all the other children in the family began walking at thirteen months. His general health has been quite good, but the parents noticed that he could not run around. At present, he stands in a position of lordosis, with his feet well apart; there is slight ankle clonus, and absence of the patellar reflexes; muscular weakness is noticeable in the anterior part of the thigh. So far, the electrical reactions are negative. When he runs, he throws himself from side to side.

DR. N. M. SHAFFER said he had examined the case when it first applied for treatment at the Orthopædic Dispensary, and at that time, he made a diagnosis, by exclusion, of pseudo-hypertrophic paralysis, and Dr. M. A. Starr, who saw the case in consultation, also considered it to be in the atrophic stage of this disease. The speaker said he could distinctly recall having seen two or three such instances, where all the signs of the hypertrophic stage were subsequently developed; in one family, three children were all affected in the same way, but careful inquiry failed to elicit any evidence of hereditary influence.

DR. A. B. JUDSON had observed cases in two families; in one, two brothers, and in the other, a brother and a sister were affected. These, and similar observations by Dr. Poore, and others, indicated that heredity is to be considered in the interesting, but still unanswered question of etiology. He recalled an incipient case, in which a previous diagnosis of Pott's disease had been based on the peculiarity of gait, and an apparent spinal disability in rising from the recumbent position.

The CHAIRMAN had known of a number of instances in which several members of one family had been affected in this way, and he thought it was common to find that they were usually late in learning to walk. He had nothing new to offer in regard to the etiology.

RACHITIC PSEUDO-PARALYSIS, AND ITS TREATMENT, was the title of a paper read by DR. S. KETCH.

The author dwelt particularly on the importance of recognizing this condition, and gave its differential points, as distinguished from infantile paralysis, and the paraplegia of Pott's disease, with which it was most frequently confounded. He mentioned many other conditions which this condition resembled, and which it had been mistaken for, such as spastic paralysis, post-diphtheritic paralysis, and even pseudo-hypertrophic paralysis. The clinical features were given, and corroborated those already described in Dr. H. W. Berg's paper, read before the Section some years ago, and which the author thought had not been sufficiently appreciated by the general practitioner. The question of the occurrence of deformity with this pseudopalsy, was brought out. The author thought that in many cases, there was no deformity, as the children had never walked, and the superincumbent weight had not acted as a factor in the production of bowlegs, and knock-knee. He had observed cases, however. that had deformity present. Some of these were probably cases of "fœtal rachitis," and some, where the muscular condition came on after the child had already walked.

As to treatment, he advised, primarily, regulation of the diet, baths, and general hygiene. Medicinally, stress was placed on the use of phosphorus. Locally, electricity and message, and inunctions with cod liver oil were recommended. The question of the use of "braces" was gone into thoroughly, the author being of the opinion, that their use is unjustifiable while the muscular weakness remains, and prefers to wait until a later period, should deformity be present, when it can be remedied either by mechanical or operative means.

Dr. Shaffer said that quite recently he had seen a case of rachitic kyphosis, which had been referred to him by an eminent medical practitioner, on the supposition that it was a case of Pott's disease, and not long ago, a case of rachitic paralysis had been sent to him with a diagnosis of double hip-joint disease. He would only add to the points in differential diagnosis, so well laid down, that the hyperæsthetic stage of true poliomyelitis anterior, is very like the tender condition of the muscles which we find in rachitic paralysis. He had seen, in the course of a few weeks, five or six cases of poliomyelitis anterior, in the very early stage, and in two or three of them, this hyperæsthetic condition was present, and closely simulated pseudo-rachitic paralysis. One without much experience, might very readily mistake the tender stage of the rachitic condition for the hyperæsthetic stage of infantile paralysis. The differential diagnosis between the rachitic curve of the spine, and the curve of Pott's disease, is readily made by the ease with which the spine can be made to describe the normal motion, and also, by the diminution or disappearance of the kyphos by placing the child in the recumbent position. Still, it must be remembered, that rachitic curves do show some spinal rigidity on attempting to hyper-extend the spine. The importance of this subject to the general practitioner is well shown by the case of a little girl in St. Luke's Hospital, in which flexion and extension of the thighs were limited, as was also, inward rotation during flexion. The child complained of pain, and her general condition closely simulated the first stage of hip-joint disease. This pseudo-rachitic muscular condition is not accompanied, in the majority of cases, by deformity, but the symptoms precede the stage of deformity. As soon as the muscular tenderness begins to subside, these children get on their feet, and then the influence of the superincumbent weight of the body, comes into play. He was glad that the author had emphasized Dr. Berg's comments on this subject.

Dr. Judson referred to the peculiar locomotion of these patients. Such a child would sit on the floor with his feet before him, and by raising first on one, and then on the other ischiatic tuberosity, and by the help of his hands placed on the floor, would move about with considerable rapidity, but in a remarkably grotesque manner. The activity shown in this way, would indicate that tenderness of the bones is not an important, and certainly not a constant feature. It is probable that such a child postpones walking because he is disinclined to trust his corporal weight on the softened long bones of the lower extremities: it is another instance of the necessity of taking the weight of the body into account in the observation and treatment of orthopædic patients. He agreed with Dr. Ketch in condemning all attempts to coax or compel such a child to walk before he is ready to do so of his own accord.

Dr. Joseph Collins said that, as a neurologist, he had been much interested in the topic for discussion, and he would like to ask for further information in regard to the etiology and pathology. He would also like to know why the last case reported in the paper, might not be considered a mild form of multiple neuritis, and also, why we could not call most of these cases, instances of auto-toxæmia, manifesting itself through the sensory and motor nerves. The clinical history, under such circumstances, would be such as had just been given, and the treatment exactly that ordinarily prescribed by the neurologist. These are the cases which the neurologist would term, "the pareses of toxæmia." Admitting the toxæmia, the treatment should be by elimination, by checking the formation of leucomaines or ferments, and by keeping the child entirely at rest.

Dr. W. L. Carr said that at the time Dr. Berg's paper was presented to the Section, in 1889, he was preparing an article for the American Pediatric Society, on "Some Manifestations of Rachitis not Associated with Severe Bone-Changes." From a considerable experience among children, he could say, that rachitic muscular weakness is almost always without severe bone-changes. Recently, attention has been directed to the association of scurvy with rachitis; and in this country, Dr. Northrup has reported a number of such cases. In the case described by the author, and which he saw in consultation, the excessive epiphyseal tenderness and general hyperæsthesia would seem to indicate the association of scurvy with the rachitic condition described. Both rachitis and scurvy are conditions of malnutrition, the latter being a more aggravated form. Both are amenable to very much the same treatment, namely, regulation of the diet, and the administration of phosphates, and cod liver oil. When the tenderness is excessive, and accompanied by swelling around the joints, he was cautious about making a diagnosis until he had inquired sufficiently into the history, to enable him to positively exclude scurvy. Where the scorbutic tendency was present, the use of fruit-juices and of fresh beef is indicated, in addition to the treatment already mentioned. The dietetic management of rachitic cases in children is often quite difficult, owing to the existence of an intestinal catarrh, which prevents the ready absorption of cod liver oil; hence, an excellent preparatory treatment is to administer an alkali, and sometimes a cathartic. These children have often been fed largely on starches and sugars, and dislike milk; and under these circumstances, the change to a proper milk diet should be made very gradually, otherwise an attack of acute indigestion will be the result. It is quite possible that a poisoning of the system may be present, on account of the fat and sugar upon which most of these children have been fed, this kind of food making fat, rather than blood; but the disease itself shows no evidence of a condition of self-poisoning.

Dr. Halsted Myers described a case of marked rachitis, occurring in his service at St. Luke's Hospital, in which the kyphosis was so rigid that Pott's disease could not be excluded until after three weeks of observation; the pseudo-paraplegia had lasted two years, a longer duration than he had ever seen before. The power was gradually improving, though the child was still unable to stand; pseudo-hypertrophic paralysis and poliomyelitis had been excluded.

Dr. Royal Whitman asked as to the intellectual capacity of the child. Cases of delayed cerebral development, or semi-idiotic children, were often brought for examination, because they were unable to stand. These patients often suffered from rachitis; and it was occasionally difficult to differentiate between the want of power or disinclination to stand, the effect of disease, and that resulting from impairment of the cerebral centres.

Dr. Myers replied, that, in his case, the child possessed average intelligence.

Dr. R. H. Sayre said the symptoms of rachitic paralysis were often mistaken for Pott's disease, and he had frequently noticed more resistant curves of the spine than Dr. Shaffer's remarks would lead us to believe occurred; so that, in a number of these cases, rest in the horizontal position for a long time was requisite before the curve of the spine disappeared. While the diagnosis rests upon the history of the case and its general course, there was a rachitic state present long before the development of these bone-deformities. The pain and tenderness are a benefit, in so far as they prevent the child from walking too soon, and, therefore, save it from greater deformity.

Dr. H. A. Berg said that the important thing to remember about the pseudo-paralysis of rachitis was, that it was really not a paralysis; this is the first step in the successful treatment of these cases. Regarding the differential diagnosis between rachitis and multiple neuritis, he said that the one is an organic disease, resulting in organic muscular changes, while the other is a functional disease. The organic changes resulting from a multiple neuritis would very soon give rise to unmistakable symptoms, while the pseudo-paralysis of rachitis never resulted in any change, either in the muscles or in the nerves.

Dr. Ketch, in closing the discussion, said that his object in writing the paper, was to emphasize the clinical features already given in the paper by Dr. Berg, and to bring the differential points especially to the attention of the general practitioner. He had no new facts to present, except the question of the presence or absence of deformity in these cases; and the discussion had shown a remarkable unanimity of opinion regarding the absence of deformity. Personally, he thought he had seen quite a number of cases where muscular weakness and deformity were both present, and also that he had seen many cases where this trouble still persisted at the age of three or four years, and was associated with some deformity. It was not at all unlikely that some of these were instances of what is called "fœtal rachitis." In his paper, read before the American Orthopedic Association, on "Posterior Rachitic Curvature," he had stated positively that there was no reason why rachitis and caries of the spine should not co-exist, and he was sure that he had seen such a condition. This might explain the case reported by Dr. Myers. It must not be forgotten that, in many of these cases of rachitic paralysis, the children have walked for some time before the muscular weakness develops, and that in these cases, when this condition is first noticed, the mother describes it, by saying that the child "has suddenly been taken off its legs."

A MODIFICATION OF THOMAS'S WRENCH.

Dr. Myers showed a modification of Thomas's wrench, much more simple, and costing about one-fourth as much as the original. The Thomas Wrench could overcome an equinus, the rotation on the anterior posterior axis, and the adduction of the foot, as a whole; but it did not seem well designed to correct the adduction of the fore-foot in relation to the heel, and to do this, Dr. Myers had attached to the distal jaw of the wrench another handle-bar, so that he had two levers of the second class, having a common fulcrum. This fulcrum was placed over, or just behind the cuboid, and the two other jaws clamped side by side on the inside of the foot. When the handles were separated, the jaws also separated, so that the tissues on the inside of the foot were stretched. The outer border of the foot was not crushed inward between two fixed points of resistance, which would be very undesirable.

Recent Literature.

Leçons sur les Maladies de la Moelle. Par le Dr. Pierre Marie, Professeur agrégé a la Faculté de médecine de Paris, etc. Ouvrage accompagné de 244 (246) figures, schematiques ou d'après nature. 8vo, pp. ii, 504. Paris: G. Masson. 1892.

Lectures upon the Diseases of the Spinal Cord. By Dr. Pierre Marie, Associate Professor in the Faculty of Medicine of Paris, etc. With 244 (246) illustrations from nature and diagrams. 8vo, pp. ii, 504. Paris: G. Masson. 1892.

Any new treatise on the diseases of the spinal cord must necessarily consist very largely of a recapitulation of the voluminous literature, and consequently the presentation of the subject can hardly be expected to be very novel, for the novelties have for the most part already appeared, and no one man can now hope to add very much from his own experience. Nor, in the present treatise does Dr. Marie attempt to speak of the latest discovered affections of the cord; he deals only with a small number of diseases, all of them well-known: spasmodic tabes, disseminated sclerosis, tabes dorsalis, Friedreich's ataxia, the combined scleroses, infantile spinal paralysis, and amyotrophic lateral sclerosis, over two hundred pages being devoted to tabes alone. The author's previous work, the new affections of the nervous system to which his name has become attached, and his original researches in pathology, might fairly lead us to hope for something more than the ordinary treatise; nor is this hope disappointed. Written with all the clearness and grace of style that characterizes the best French medical treatises, taking note of most of the important contributions to the subject, enriched by the author's own researches, pregnant with suggestion to the student, and original in its views and methods, the present volume is one of the most interesting and valuable that has appeared from any French neurologist for some time.

"On many points," he says in his preface, "pathological anatomy is still in a period of uncertainty, and it must first of all be based on a knowledge of normal anatomy." Therefore the first seven lectures are devoted to a review of our knowledge of the different systems of fibres in the cord, and of the various secondary degenerations, based chiefly upon a study of degeneration in the human subject as a result of local lesions, and illustrated by many new drawings from the rich collections of La Salpêtrière. Although these degenerations are studied chiefly in man, the experimental work of English observers receives full attention, and these chapters form one of the most succinct and clear accounts of the systems of fibres in the cord that have yet appeared.

In the description of the diseases of the cord Dr. Marie has had but little to say upon the pathological physiology of any of the morbid symptoms, such as the inco-ordination in tabes, "for our knowledge is so rudimentary, not to say contradictory, that we must wait for a more propitious time." Ætiology, however, has received full attention, for upon it, he believes, must be based the only therapeutics worthy of the name. The greatest pains, too, have been taken to give a full account of the symptomatology.

Space is lacking to analyze in detail the chapters on the various diseases; those on tabes amount practically to a monograph on the subject. For the most part they are excellent, clear, and well-arranged. While recognizing clearly the limits of our positive knowledge, the author gives many pregnant speculations as to the nature and pathology of the different affections. Disseminated sclerosis, he thinks, is often a sequel of acute infectious disease, and may perhaps be of vascular origin. He endorses the views of Erb and Fournier that syphilis is in the vast majority of cases, a precursor of tabes, and inclines to Strümpell's theory that syphilis produces some chemical poison which causes tabes. The lesions in the posterior columns in tabes he considers not the primary trouble, but secondary degenerations following disease of the spinal and peripheral ganglia. His hypotheses on the relation of the development and vascular supply of the cord to the lesions in combined sclerosis are suggestive and provocative of further study. He inclines to the belief that infantile paralysis is of infectious nature, and he disputes Déjérine's hypothesis that Friedreich's disease is a form of gliomatosis.

With so much that is as yet hypothetical it is only natural that his views should at times be questioned, yet he brings to their support many weighty reasons based on deep learning and wide experience. On two points only would we raise objections. The old spasmodic tabes of Charcot and Erb, a primary sclerosis of the lateral columns developing in adults, has no longer any reasonable basis for its existence; it is secondary to some cerebral or spinal lesion; but he admits a spastic paralysis in children born prematurely, due to a defective development of the pyramidal tract, independent of the cases of spastic paraplegia due to cerebral disease. He admits the similarity of the two affections, but he has no pathological evidence to adduce in favor of his hypothesis. It is, perhaps, too much to expect that a pupil of Charcot should deny the autonomy of amyotrophic lateral sclerosis, or even subscribe to the more moderate views of Strümpell, but the clinical differences in the various types of Schultze's "motor tabes" have apparently led him to ignore the pathological evidence brought forward by Gowers, who proves very conclusively that Charcot's disease has no pathological claim to an independent existence.

The illustrations merit more than passing praise. They are for the most part new, and are based upon the rich collections of La Salpêtrière, and embrace many reproductions of sections of the cord as well as photographs of patients with interesting manifestations. The mechanical execution of the book is also excellent.

We can but repeat the high praise with which we began. Clear, accurate and original, it is a work which suggests much to the student, stimulates him to new research, and widens the scope of his knowledge. Although no promise is made we can but hope for another volume, dealing with those diseases of the cord which have not been considered in the present volume. A translation for the benefit of those who cannot read French is also to be desired.

A Dictionary of Treatment, or Therapeutic Index, including Medical and Surgical Therapeutics. By William Whittla, M.D., Professor of Materia Medica and Therapeutics in the Queen's College, Belfast; Physician to and Lecturer on Clinical Medicine, Belfast Royal Hospital; Consulting Physician to the Ulster Hospital for Women and Children; Consulting Physician to the Belfast Ophthalmic Hospital; etc. Revised and Adapted to the Pharmacopœia of the United States. Philadelphia: Lea Brothers & Co. 1892.

From the above it will be seen that the author has had unusual opportunities to study disease; and where to this is added an excellent knowledge of surgical procedures, it is easy to understand that he may be fairly expected to write a good therapeutic index. In this expectation the reader is not disappointed. A study of the author's work shows him to be many-sided, and the brief outline of treatment given under the heading of each disease is, as a rule, excellent. A full discussion of the best methods of treating each disease in the long alphabetical list is impossible in a work of moderate size; but within the limits set for himself the writer has produced a useful book, and one of the best of its kind.

The Principles of Theoretical Chemistry, with Special Reference to the Constitution of Chemical Compounds. By Ira Remsen, Professor of Chemistry in the Johns Hopkins University. Fourth Edition, thoroughly revised. Philadelphia: Lea Brothers & Co. 1892.

The present edition of this book differs very little from the previous one. The chief addition is a short chapter on solutions. In the absence of any important changes, a more extended notice of a work so widely and favorably known as this is unnecessary.

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THE DISCUSSION ON CEREBRAL LOCALIZATIONS AT THE FIFTH CONGRESS OF THE ITALIAN SOCIETY OF INTERNAL MEDICINE.

AT the Fifth Congress of the Italian Society of Internal Medicine, held in Rome, October 25–28, 1892, the subject of focal cerebral lesions and their treatment was discussed by Bianchi, Vizioli, Lombroso, and others.

Bianchi, of Naples, referee, who has made large contributions to the general subject of cerebral physiology, summed up the actual state of our knowledge on localizations. Leaving to one side the motor centres relatively well known, he confined his report mainly to the sensitive and sensorial zones which are still under dispute. He holds as still untenable, because lacking clinical confirmation, the view of Munk, according to which the different segments of the retina are each in relation with a determinate part of the occipital visual zone. Nor does he admit as yet proved the localization of the centre of olfaction in the convolution of the hippocampus, a vivisection (which seemed a test case) having given him absolutely negative result.

These are the conclusions laid down in Bianchi's report:

(1) The only functional troubles which can indicate with relative precision the cortical region which is the seat of lesion, are those of movement, of sight, and of hearing.

(2) The two Rolandic convolutions indubitably represent the cortical motor zone of the opposite half of the body for the divers muscular groups of the head, face, trunk, and limbs.

(3) The cortical centre of vision in man as in the animals has a great extent; it occupies the whole of the occipital lobe and the inferior parietal lobe (as was shown at the autopsy of a man — a patient of Bianchi — who had been blind for thirty years, and in whom all these parts of the cerebrum were atrophied).

(4) A lesion of any part whatever of this visual region produces bilateral homonymous hemianopsia, or (what is more rare), contraction of the visual field and blindness of a segment of this field. These facts do not, however, furnish any special indication as to the seat of the lesion in any particular point of the visual zone.

(5) Blindness for objects and optic aphasia indicate with more precision the seat of the lesion. The existence of blindness for objects should lead to the suspicion of a bilateral lesion in the portions of the visual zone whose function is most active (anterior part of the occipital lobe and posterior part of the angular gyrus), while optic aphasia indicates a lesion occupying the anterior part of the angular gyrus, and especially that which is continuous with the first temporal convolution.

(6) Anosmia and ageustia do not of themselves indicate any precise seat of the lesion; at the most, they warrant suspicion of a lesion of the convolution of the hippocampus or of the anterior part of the gyrus fornicatus.

(7) The disorders of general sensibility (tactile and painful) do not of themselves furnish any information for the diagnosis of the seat of a focal lesion, cortical or sub-cortical; where these troubles are associated with motor paralysis, they add nothing, in reality, to the data furnished to the diagnosis by these paralyses.

(8) The experiments of Bianchi have shown that the destruction in the monkey of the frontal lobes in front of the line which separates the excitable zone from the other parts of the cerebrum does not produce any motor disturbance, though there are certain visual troubles which are slow to disappear. *Per contra*, such destruction produces profound psychical disturbances, such as: incoherence of movements, want of curiosity, with indifference, want of affection, and of sociability with regard to other monkeys, enfeeblement of the sexual instinct, augmentation of the emotional nature and of the sentiment of fear, with impulsiveness, want of the power of attention and reflection.

Mingazzini, of Rome, and Lombroso, of Naples, seconded the views of Bianchi as to the visual cortical centres and shared his doubts as to the existence of the tactile centres in the Rolandic region.

Vizioli, of Naples, co-referee, formulated the following conclusions relative to the treatment of cerebral lesions *en foyer:*

(1) These lesions demand on the part of physicians the employment of therapeutic means destined: (*a*) to modify the nutritive exchanges (iodine, arsenic, etc.); (*b*) to combat exaggerated excitability (bromides, chloral, opiates, sulphonal); (*c*) to diminish the effects of an increase of intra-cranial pressure (leeches, galvanism applied directly to the cranium, or indirectly by means of galvanization of the cervical sympathetic); (*d*) to improve the general condition (antithermics). But appropriate hygienic measures are of more importance than medicines.

(2) The study of cerebral localizations, from the point of view of surgery, has shown that operative in-

terference is indicated in traumatic epilepsy of Jacksonian form, when this affection is not of such long standing as to justify the fear of the existence of organic alterations of the cerebrum as profound as they are irreparable, and when, moreover, the affection is not so recent as to render impossible the differential diagnosis of the symptoms due to the focal lesion from the dynamogenous symptoms manifesting themselves at a distance. In the other forms of epilepsy, it is necessary to be very cautious in recommending trephining. Lastly, in primary (essential) epilepsy, trephining is formally contra-indicated.

(3) In abscess of the cerebrum where the diagnosis is clear, it is necessary to operate as soon as possible. In fact, to open such abscess in time is to save the life of the patient.

(4) In cerebral tumors of which the focal symptoms are well established and which have for origin the motor zone, the meninges, or the intra-cranial periosteum, choice must be made between trepanation practised by a skilful surgeon and the medical treatment. The operation may also be judged feasible in the case of tumors seated in other regions, if the symptoms of a focal lesion are evident, and if there is an urgent indication to diminish the effects of the intra-cranial pressure. But surgical interference will always be considered as absolutely perilous in tumors of the pons, peduncles, cerebellum, and parts contiguous to the bulb.

(5) In cerebral hæmorrhages, hæmatomata, etc., complicated with fractures with bony spicula and depression, trephining must be instantly resorted to, under rigorous antisepsis and the help of the electric light. Trephining where there is augmentation of intra-cranial pressure is not always sufficient, and incision of the meninges may be necessary.

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IMPROVEMENT OF QUARANTINE.

The Health Officer of the port of New York, Dr. W. T. Jenkins, and a member of the old National Board of Health, Dr. Stephen Smith, have each given expression to their views on this question lately — the former in a contribution to the *North American Review*, and the latter in a paper read at the recent meeting of the New York State Medical Association.[1] Each paper occupies itself mainly with improvement of quarantine at the port of New York. There is certainly no place where improvement is more needed, or where a suitable provision for intelligent quarantine could be of so much service to the whole country. Dr. Jenkins advocates the creation of another artificial island between the two, Swinburne and Hoffman, now existing in the harbor, — he is even ready with its name, Flower Island, — and the appropriation by the State of a sufficient sum of money, $50,000, for extraordinary expenses, to lie always ready in bank and be ready for the emergency. The island, he states, would cost but little, and would provide space for a pavilion large enough to hold 1,000 people, as well as for disinfecting apparatus and various out-houses.

Dr. Stephen Smith believes an artificial island would cost a great deal and is uncalled for. He advocates the assumption by the Federal Government of an exterior quarantine line with a station at Sandy Hook, where the Government owns ample territory and "has already laid the foundation of a station which can be rapidly enlarged and adapted to supply every want and condition of the most perfect modern quarantine establishment, and in time to meet any emergency during the next season." This is in accord with the plan of the National Board for establishing "refuge stations" at such points along the coast as would be most convenient for vessels bound to points in the vicinity.

The quarantine at the port of New York, Dr. Smith proposes, should be placed under the jurisdiction of the Health Department of the city of New York, which should be made responsible for its proper management. "Its officers and employees should be appointed by that department, and the chief officer should be the Sanitary Inspector of the Port. The laws relating to the government of quarantine should be repealed, and the Health Department should be authorized to make such rules and regulations relating to the inspection of vessels, their proper care, and the details of administration of this sanitary service of the port as it may from time to time deem necessary. Such a change in that quarantine establishment would of itself be an immense improvement, for it would be brought under the immediate supervision of a department which has a vital interest in its efficient and successful management."

Friction between the local and national authorities, Dr. Smith believes to be unnecessary. The local quarantines, acting as an interior line of defence, should continue to immediately guard their respective ports against the introduction of any infectious or contagious disease, and two or three of these local stations might perhaps be relied upon to deal with the milder forms of such affections on board, but they should depend upon the exterior line, the national establishment, to care for vessels bringing such diseases as cholera or yellow fever, or to meet any unusual emergency.

It is impossible to deny Dr. Smith's statements that the occurrences of last September demonstrated the total incapacity of the most important quarantine in the United States to meet the emergencies that may arise at any time when travel and commerce are unimpeded; that some legislation, State and national, is needed, and that promptly, to remedy existing defects and evils. We, too, believe with him, that whatever efforts are made should be based on principles established by sanitary science and recognized by the medical profession.

A patient, in describing her previous treatment, told a physician recently that "the doctor said my womb was out of place, and he put in a *pessamist.*"

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[1] Medical Record, November 19th.

A BUREAU OF HYGIENE AND SANITATION OF THE COLUMBIAN EXPOSITION.

A Bureau of Hygiene and Sanitation of the World's Columbian Exposition has been organized under the Department of Liberal Arts, to prepare a collective exhibit illustrative of the present condition of Sanitary Science.

Starting from the standpoint that "the common health is the common wealth" and that hitherto Sanitation and Sanitary Science have not received, in this country, at least, that amount of general public support which their importance demands, the Bureau will seek to set before the visitors to the Exposition such a representation of Sanitary Work and Sanitary Aids as will help to lift the general mind to a higher plane in its estimate of the work of sanitation. The circular issued by the Bureau quotes Edwin Chadwick's prediction that the realization of municipal and domestic sanitary reforms would eventually result in the establishment of a death-rate of five to seven per thousand in Hygeian districts, and refers to the results of improved sanitation in the city of Munich as an apt illustration, where without sewerage and a pure water-supply the death-rate from typhoid fever was 24.20 per ten thousand and where after the establishment of a system of sewerage and the introduction of a water-supply from a new source the death-rate was reduced at first to 13.30 per ten thousand, presently to 9.26, and ultimately to 1.75 per ten thousand, at which it has approximately remained.

While much in front of most other countries, the United States with a death-rate to-day of 18 per thousand, has an arduous advance to make, but it is confidently anticipated that among the many brilliant achievements of the World's Columbian Exposition that of advancing the work of Sanitary Reforms will not be the least.

The United States being the pioneer and still the leader in so many departments of the world's progress, it is felt that she should take a foremost place in sanitation, and that nowhere on the world's face ought the care of public life and health to be so great.

The aim of the Bureau of Hygiene and Sanitation will be to show as adequately as possible the position in which the theory and practice of Hygiene stand at the present day, and an appeal is made to the universities and colleges, the boards of health, State and municipal, the societies having hygiene and sanitation as their keynotes, scientists, physicians, the manufacturers and the public generally to cordially co-operate in the endeavor to make the exhibition worthy of the science and of the country.

Such varied sources are expected to produce varied results, and such varied results shown in diverse ways should serve to heighten the general interest in the one subject, a subject having but one end in view, the improvement of the "common health."

The State Boards of Health are asked to prepare charts showing the mortality statistics of their State; charts showing the morbility statistics of infectious diseases; charts showing the effect of isolation and disinfection in prevention or minimization of disease, and any other charts, diagrams, models, etc., that may be deemed desirable.

Associations and Societies engaged in sanitary work are asked to have their aims and results represented by models, illustrations, charts, etc.

The Bureau desires to arrange, as far as possible, for the presentation by exhibitors of models of sanitarily built and equipped dwelling-houses, urban and rural; farmhouses; schoolhouses; public lavatories, closets and urinals; crematories for the dead; crematories for garbage, etc. If any of those subjects should be left unrepresented by exhibitors, the Bureau will endeavor to supply the deficiency by placing adequate illustrations in the shape of models and designs before the visitors to the Exposition.

Laboratories for bacteriological research and for analytical investigations will be exhibited, food and food adulterations, the problems of water-supply, drainage, sewerage, ventilation and heating. It is desirable for the convenience of hanging that maps, charts and diagrams shall all be of uniform dimensions.

The following is the general classification under the division of Hygiene. Gymnasia and gymnastic apparatus; alimentation; dwellings, etc.; hotels and lodging houses; public baths and lavatories — a group which seems to include, in the circular of the Bureau, everything from urinals and earth closets to wall paper, clothing, crematories and laboratories; hygiene of the workshop and factory; protective supervision.

It is certainly most desirable and legitimate that hygiene and sanitation should have a conspicuous place in a great, popular exposition. The State Boards of Health will doubtless co-operate cordially in response to the appeal of this circular, and it is to be hoped the results of the efforts of the Bureau may be as successful and as instructive as the subject is important and interesting.

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MEDICAL NOTES.

A Death from Chloroform is reported from the Stockport Infirmary (*Medical Press*, November 2d) the victim being a man, aged sixty-five, suffering from carcinoma of the intestines, for the relief of which an operation was about to be performed. About ninety drops had been given, when the breathing became irregular. The usual verdict was returned.

Black Death. — The Governor-General of Turkestan states that that province has been visited by a severe epidemic of black death, following in the path of cholera. On September 22d it appeared at Askabad, and in six days killed more than a thousand persons, after which time it stopped. The attacks begins with intense chills occurring every five minutes for an hour, followed by very great fever and rapid pulse. Convulsions occur with a period of syncope between them. The patients suffer great pain, but the disease is rapidly fatal. Immediately after death, large black bullæ appear on the body, which spread very rapidly.

The International Medical Congress. — At a recent meeting of the Committee of the Congress in Rome, Professor Baccelli announced that the King had promised to open the Congress in person. His Majesty will be asked to be the Honorary President. Agreeably to the request of American medical men, the date of the inauguration of the Congress has been fixed for September 24th, to be closed on October 1st. The Congress will hold its sittings at the new Policlinic Hospital, outside the Porta Pia.

Another Question of Nomenclature. — Following shortly after the protest against the word "laparotomy," objection has been made to "symphysiotomy," by Dr. W. S. Forbes of Philadelphia. There is more than one symphysis in the body, any one of which may some day be attacked by surgeons. He suggests the more euphonic word "pubeotomy."

NEW ENGLAND.

The Twenty Days' Quarantine. — A steamer arrived at Boston on Friday, Nov. 17th, with 79 immigrants on board. The health authorities finding all well, passed the ship and notified the treasury officials. The latter intercepted the passengers as they were disembarking from the steamer, ordered them on board again and sent the steamer to twenty days' quarantine in the lower harbor. The matter was referred to the Treasury Department at Washington, from which orders were received that the vessel need not be held, as it appeared that the passengers had been booked and assembled prior to the 1st of September. In this connection may be mentioned the report that a change in the present immigration policy is under consideration at the Department, and that an early circular is likely to be issued in regard to it. The order of September 1st, imposes a twenty days' quarantine upon immigrants, whether in the cabin or steerage. It is reported that the modification under consideration would remit the detention as far as cabin immigrants are concerned. This seems to indicate a disposition on the part of the Treasury to be guided somewhat by what is known in regard to the life of the cholera poison. The seven or eight days voyage is long enough quarantine for the individual, and the twenty days detention is too short for infected clothing even with the additional ceremony of fumigation with sulphur. Perhaps a method which will exclude both undesirable immigrants and cholera, and at the same time agree with sanitary common-sense, is unattainable.

Small-Pox at New Haven. — Seventeen cases of small-pox are reported at New Haven, Conn.

NEW YORK.

New York State Medical Association. — The ninth annual meeting was held at the Mott Memorial Hall, on November 15, 16, and 17, 1892. On the 15th the address by the president, Dr. Judson B. Andrews, of Buffalo, was delivered. Among the more important papers read at the various sessions were the following: "Pneumectomy for the Relief of Tubercular Abscess of the Lung," by Dr. J. Blake White, of New York; "The Etiological Factors of a General Character Potent in the Production of Diseases Peculiar to Women," by Dr. George T. Harrison, of New York; "The Treatment of Neglected Cases of Rotary Lateral Curvature of the Spine," by Dr. Reginald H. Sayre, of New York; "A Review of Some of the Injuries of the Upper Extremities," by Dr. E. M. Moore, of Rochester; "Treatment Often Found Necessary After Trachelorrhaphy," by Dr. William H. Robb, of Amsterdam; "A Clinico-Pathological Study of Injuries of the Head, with Special Reference to Lesions of the Brain Substance," by Dr. Charles Phelps, of New York; "Personal Experiences and Conclusions in the Domain of Brain Surgery," by Dr. Roswell Park, of Buffalo; "Fractures of the Patella Treated by Continuous Extension, Patients not Confined to Bed," by Dr. Joseph D. Bryant, of New York; "Some Recent Cases of Appendicitis," by Dr. Nathan Jacobson, of Syracuse; "Suggestions Relating to Improvement of the Quarantine System," by Dr. Stephen Smith, of New York; "Discussion on the Prophylaxis and Treatment of Cholera," opened by Drs. A. L. Carroll and Joseph D. Bryant; and "Some Recent Experiments in Renal Surgery," by Dr. E. D. Ferguson, of Troy. On the evening of November 16th, the address in surgery was delivered by Dr. Frederic S. Dennis, of New York. His subject was "The Achievements of American Surgery," and he gave an exhaustive report of the vast number of operations in which the claim of American surgeons to priority has been substantiated. After the address the annual collation was served. On November 17th, Dr. S. B. W. McLeod, of New York, was elected president, and Dr. E. D. Ferguson, of Troy, re-elected secretary.

Prosecution by Commission in Lunacy. — The State Commission in Lunacy has determined to prosecute, through the courts, two New York physicians for violating the lunacy laws, which require of all physicians to qualify as examiners before passing upon any case of alleged insanity. The two physicians in question had a woman committed to the Poughkeepsie Asylum, and it is claimed that they had not so qualified. It is said that they will claim ignorance of the new law in defence.

Trichinosis. — Three patients, a man, his wife and their oldest child, are now in the Presbyterian Hospital dangerously ill with trichinosis, which was contracted from eating hash in which raw pork formed one of the ingredients.

Charbon. — A German tailor died November 16th in Bellevue Hospital, of what was supposed to be erysipelas. There being some doubt in the case, however, an autopsy was made by Dr. H. P. Loomis, who found that the cause of death was the disease known as sheep-rot. It was ascertained that he contracted the disease (of which this is the first instance reported in the city for fifteen years) from some woollen cloth which he was cleaning.

Miscellany.

PAN-AMERICAN MEDICAL CONGRESS.—RAILWAY SURGERY.

A Section of Railway Surgery of the Pan-American Medical Congress has been organized, with Dr. C. W. P. Brock of Richmond, Va., as Executive President. A full list of officers has been provided for each of the constituent countries. At the Eleventh Annual Meeting of the Wabash Railway Surgical Association — the first organization of the kind — Dr. C. B. Stemen, of Fort Wayne, was by unanimous resolution requested to prepare a paper on "Organized Railway Surgery," and read the same before the Section on Railway Surgery of the Pan-American Medical Congress. At the same meeting Dr. Hal C. Wyman, of Detroit, offered the following, which was unanimously adopted:

Resolved, that each member of this Association solicit his Congressman to interest himself in legislation in favor of the Pan-American Medical Congress.

Announcement of Officials. — A sixty-page pamphlet has been issued, giving the names of officers connected with the Congress. The secretary and treasurer would be glad to hear from members of the profession intending to participate, as the heavy expenses of organization, amounting to something like $5,000, must be paid by the advance registration-fees. Dr. Charles A. L. Reed, Cincinnati, is the Secretary-General who will forward copies of the preliminary announcement upon request. The Treasurer is Dr. A. M. Owen, Evansville, Ind., to whom the registration-fee should be remitted.

PROPHETS WITHOUT HONOR IN THEIR OWN COUNTRY.

In his introductory address on taking the chair of surgery in Glasgow University, to which he has been recently appointed, Prof. William Macewen makes the following allusion to the two Hunters (John and William), who were born near Glasgow.

"However the Londoners may have been wanting in appreciation of John Hunter's genius while he lived among them, they have amply compensated for it by the care they have since bestowed upon his magnificent museum, to which they are constantly adding; and by the establishment of 'Hunterian Orations' the memory of his achievements are annually revivified. Contrast this with what is done in Glasgow to perpetuate the memory of these two great men, who in their early days were so intimately associated with it. The public have almost forgotten their name, and this is even the case at their birth-place, Longcalderwood, to which, I made a pilgrimage some years ago in search of Hunter's house. Arriving as near the place as our directions seemed to indicate, we made inquiry as to its locality at several isolated houses in the rural district, without eliciting the desired information. When the question was put to one old lady as to the whereabouts of the house which used to be inhabited by the Hunters, she naively answered in the Scotch fashion, 'What hae they been dae'n that ye're speerin' for them?' *Sic transit gloria mundi.* That the name and memory of William Hunter are not better known among the rising generation is due to our own supineness. We have been acting like the man in the parable who wrapped his treasure in a napkin, and if we do not bestir ourselves we may reap his award."

CHARAKA.

The translation of the great Indian medical classic by Kaviratna has been mentioned on page 415 of the Journal. The second fasciculus begins with Lesson IV, having for its topic the six centuries of Purgatives. The ancients were surely not behind us in the number of their purgatives. The illustrious son of Atri describes six hundred, and these in some way appear to be related to five hundred astringents. It was probably as hard to remember doses then as now, for the sage says that "he is the foremost of physicians who knows the measure of each artical to be employed."

Lesson V, on Diet, gives excellent advice on this important subject. Food is divided into heavy and light; the former contains largely the properties of the earth and moon, the latter wind and heat; under this head comes also the use of eye-washes. "The eyes of one who uses collyrium accquire strength; as the lustre of gold and gems, when washed with oil and cloth and hair, becomes clear and bright, so the vision of the eyes of mortals becomes with the aid of collyria and lotion, clear and bright like the moon."

"After bathing, after eating, after bringing out the phlegm in the throat by artificial means, after sneezing, after cleansing the teeth, after purging the cerebrum by having taken snuff, after applying collyrium to the eyes, and after waking from sleep, the man of prudence will take to smoking."

The above are good examples of the poetical fervor which continually recurs in this great Indian epic. The effect of the latter verse is marred when we find that smoking consists in inhaling the fumes of oily substances. Cleanliness is strongly urged. "The practice of washing the two feet and the outlets of the passages aids purity and promotes longevity. The wearing of clean apparel is agreeable, productive of fame and longevity, dispels distress and ill-luck, makes one worthy of going to respectable assemblies, and is otherwise auspicious."

The sixth lesson of the poem treats of the proper way of living according to the seasons of the year. Beginning with cold weather the sage advises "conveyances and beds and seats that are well covered, overlaid with thick clothes and painted blankets. One should also at such times cover one's self always with thick and warm clothing. Retiring to bed, one should sleep, clasping as one likes, a woman of ample proportions, of full and well developed bosom and smeared with the perfumed unguent of Aguru." During the spring it is not necessary to be so particular in hygienic matters. In summer one should refrain from work, and make himself a comfortable seat, adorned with pebbles and gems.

We hope before long to lay before our readers the renowned son of Atri's seventh lesson, on the inadvisability of suppressing the urgings of nature. As previously stated, this old work is still used as a textbook by many practitioners in India, and contains much that is poetically fine and medically sensible.

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[1] Glasgow Medical Journal, November 1892.

Correspondence.

LONDON LETTER.

[From our Special Correspondent.]

(Continued from No. 20, page 491.)

The Physical Effects of Golf. — The Murderer Neill. — An Automatic Oculist. — A Question of Responsibility. — Unqualified Assistants. — Funeral Reform. — Rabies. — Tuberculous Cattle. — Analysis of Ice-creams.

London, November 5, 1892.

Every new game appears to bring with it one or more peculiar and characteristic physical effects or defects. We have heard of the "tennis elbow" and the "bicycle chest," and now an authority in a monthly periodical writes of the "golf straddle, golf waggle and golf twist." The symptoms of these various peculiarities are described so that they may be recognized by even a layman upon the street. If, for instance, a man is seen "coming down Pall-mall with his legs wide apart, his head and shoulders twisted round backwards, and his hands aimlessly swaying his umbrella, you know at once what has happened." It is sometimes a little difficult to tell advanced golf symptoms from a mild case of inebriety.

Seldom has a murder trial attracted the attention which was centered upon Neill or Cream, whose trial at the Old Bailey for the murder of a woman named Matilda Clover, has just resulted in a verdict of guilty, and a sentence of death. Clover was by no means the only girl whom the prisoner murdered, three or four others having died under circumstances which now point to poisoning by strychnine at the hands of the prisoner. Neill had spent some hours with the girl Clover in October last; a little while after his departure she was taken with convulsions. She was attended by a friend, a young girl, and by the landlady, whose description of the character of the convulsions finally became very important evidence. After she was dead the body was seen by the physician who had taken care of her in previous illnesses, and who certified that death was due to alcoholism and syncope, and she was accordingly buried. The death of Neill's other victims were similar, the object apparently being to extort money from persons on whom circumstantial evidence might fasten. Probably nobody would have suspected the cause of death had not the prisoner in a threatening letter said she had died from strychnine poison. This coming to the hands of the authorities, the body was taken up in May, and Professor Stevenson was able to demonstrate the presence of strychnine by injection into frogs. The principal medical interest in the case centres on the lax giving of death certificates, and the evidence connected with the proving of the presence of strychnine in the body some months after death. Sir Henry Thompson takes the opportunity to criticise not only the method of obtaining death certificates, but also the need of qualified official persons who should investigate all deaths that are at all suspicious. The ease with which dangerous drugs may be procured has also been called to public attention.

An enterprising optician has constructed and put in public places an automatic penny-in-the-slot box, so made that by dropping in a penny a light appears on the inside. By turning a knob a series of optical glasses is brought in front of a page of print. When the spectator decides through which lens he sees best, an order blank with a number corresponding to the number of the satisfactory lens is dropped into a receptacle on the machine with half a crown. In due time a pair of spectacles arrives at the given address by post.

A man whose arm had been crushed in a railway accident was admitted to a hospital, where he died during the administration of chloroform. The inquest jury acquitted the hospital authorities of any responsibility for his untimely end, but at the same time, added the rider, that the railway company was also innocent of the chloroform death.

The daily papers are taking up the subject of unqualified assistants, which has so long been the subject for criticism in the medical journals. There is no doubt that the custom of employing assistants who are not duly qualified to practice is extensively and openly carried on. There appears to be a feeling that the unqualified man may be a good practitioner with an extensive experience, who, on account of lack of means, has not been able to complete his curriculum.

A conference called by the Church of England Burial, Funeral, and Mourning Reform Association, was held a few days ago at the Church Hospital. A communication from Sir Walter Foster was read, to the effect that the Local Government Board believed that all bodies dead from cholera in the autumn, had been dealt with by placing chemical compounds around the body in the coffin. Resolutions were passed in favor of an exhaustive inquiry to the effect of earth burial on the soil, the water springs and the air; also of the insurance of children being limited to the cost of a simple funeral.

A year ago, cases of rabies were frequently reported in different parts of England, although Scotland and Ireland were not so afflicted. During the past year the number has much decreased, especially in London and York. In the former the cases fell from 25 to 8, and in the latter from 36 to 14. The chief inspector attributes great benefit to the enforcement of the orders of the Board of Agriculture, requiring the use of the muzzle or the wearing of a collar in those districts in which the disease was most prevalent. In confirmation of the theory that the chief factor in keeping up the existence of rabies in a county or district, is the stray or ownerless dog, it is pointed out that last year the number of stray dogs returned as rabid was 30, or nearly 38 per cent. of all the dogs attacked.

Experiments have been made by several local authorities with the meat and milk of tuberculous cattle. Meat from tuberculous cattle, apparently itself healthy, was fed to guinea-pigs and rabbits, using about the same precautions that the butcher would use. Most of the animals became tuberculous even when the meat was cooked in the ordinary way, but not if the meat were cut into small pieces and thoroughly cooked. Such cooking could not be applied to joints of meat without destroying its flavor. On the other hand, the milk from tuberculous cattle commonly gave negative results.

The public analyst of the Vestry of St. Luke's reports of samples of ices and ice-creams procured in hot weather, when an outbreak of fever had been ascribed to the impure materials used in making the ices, that although none contained any cream they were all in a sound and healthy condition. No metallic poison was found in them, nor any other poisonous material.

METEOROLOGICAL RECORD,

For the week ending November 12, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 6	30.19	36	44	28	58	46	52	N.W.	S.	11	6	C.	C.	
M.. 7	30.15	48	59	36	74	78	76	S.	S.W.	12	24	O.	R.	
T.. 8	30.02	56	66	46	87	55	71	S.W.	W.	15	12	O.	C.	0.10
W. 9	30.38	42	46	37	63	54	58	W.	N.	10	6	O.	O.	
T..10	29.85	40	46	35	100	92	96	N.E.	W.	25	8	R.	F.	1.66
F..11	30.06	35	40	30	63	54	58	N.	N.W.	13	6	C.	C.	
S..12	30.12	35	42	28	74	61	68	W.	S.E.	3	4	O.	O.	
☞	30.11	42	49	34	74	63	68							0.25

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 12, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	620	209	13.24	17.28	2.40	6.88	1.76
Chicago . . .	1,250,000	416	173	19.68	15.36	1.68	12.24	2.16
Philadelphia .	1,092,168	404	122	18.77	12.84	2.47	12.35	.74
Brooklyn . .	955,333	301	93	11.88	23.76	1.00	7.26	1.32
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	245	74	17.95	14.28	2.04	8.16	3.26
Baltimore . .	461,139	--	—	—	—	—	—	—
Cincinnati . .	305,000	89	31	13.44	14.56	3.36	6.72	1.12
Cleveland . .	281,353	104	46	17.38	7.68	.96	13.44	1.92
Pittsburg . .	255,000	99	41	32.32	12.12	6.06	12.12	5 05
Milwaukee . .	234,440	55	29	30.94	14.56	—	25.48	5.46
Washington .	230,360	86	27	11.61	15.68	1.16	6.96	3.48
Nashville . .	87,754	20	4	5.00	10.00	—	—	5.00
Charleston . .	56,048	34	11	5.88	2.94	5.88	—	—
Portland . . .	40,000	7	1	—	28.56	—	—	—
Worcester . .	92,313	25	6	75.00	25.00	50.00	25.00	—
Lowell . . .	82,455	31	9	3.23	12.92	—	—	3.23
Fall River . .	82,128	22	8	36.40	4.55	13.65	9.10	4.55
Cambridge . .	74,644	14	6	7.14	28.56	—	—	—
Lynn	60,809	13	5	15.38	7.69	—	—	7.69
Springfield . .	47,052	9	2	44.44	—	—	—	22.22
Lawrence . .	45,910	22	7	22.75	18.20	—	9.10	9 10
New Bedford .	44,947	20	7	—	5.00	—	—	—
Holyoke . . .	40,099	—	—	—	--	—	—	—
Brockton . .	32,783	8	0	—	12.50	—	—	—
Salem	31,495	7	2	42.84	14.28	28.56	—	14.28
Haverhill . .	30,065	6	2	33.33	—	16.66	—	16 66
Chelsea . . .	29,479	8	4	—	12.50	—	—	—
Malden . . .	27,252	4	0	25.00	—	—	—	25.00
Newton . . .	26,495	—	—	—	—	—	—	—
Taunton . . .	26,464	12	4	8.33	—	—	—	—
Gloucester . .	26,008	3	1	33.33	—	—	—	—
Fitchburg . .	25,444	6	1	—	—	—	—	—
Waltham . .	20,942	14	1	7.14	35.70	—	—	—
Quincy . . .	18,669	5	3	20.00	—	—	—	—
Pittsfield . .	18,294	3	3	—	—	—	—	—
Northampton .	15,684	1	0	—	—	—	—	—
Everett . . .	14,745	8	3	—	37.50	—	—	—
Newburyport .	14,031	2	0	—	—	—	—	—
Amesbury . .	13,561	2	0	—	—	—	—	—

Deaths reported 2,746: under five years of age 952; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 462, acute lung diseases 422, consumption 302, diphtheria and croup 251, diarrhœal diseases 64, typhoid fever 58, scarlet fever 37, whooping-cough 14, measles 13, cerebro-spinal meningitis 9, malarial fever 8, erysipelas 5, small-pox 1.

From scarlet fever Philadelphia 9, Boston 6, New York 4, Chicago and Pittsburgh 3 each, Springfield 2, Brooklyn, Cincinnati, Cleveland, Fall River, Cambridge, Lawrence, Taunton, Gloucester, Waltham and Adams 1 each. From whooping-cough New York 6, Chicago 4, Philadelphia 2, Boston and Cincinnati 1 each. From measles Chicago 6, New York 4, Boston 2, Brooklyn 1. From cerebro-spinal meningitis New York 6, Brooklyn, Somerville and Quincy 1 each. From malarial fever Brooklyn 4, New York and Philadelphia 2 each. From erysipelas New York 2, Chicago, Boston and Fall River 1 each. From small-pox New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 12, 1892, TO NOVEMBER 18, 1892.

FIRST-LIEUT. ROBERT S. WOODSON, assistant surgeon, is relieved from duty at Fort McPherson, Georgia, and is assigned to duty at Fort Barrancas, Florida.

FIRST-LIEUT. GEORGE J. NEWGARDEN, assistant surgeon (recently appointed) is assigned to duty at Fort Sheridan, Ill.

FIRST-LIEUT. CHARLES F. KIEFFER, assistant surgeon, is relieved from duty at Fort Sheridan, Ill., and assigned to duty at Fort Meade, South Dakota.

FIRST-LIEUT. A. E. BRADLEY, assistant surgeon, is relieved from duty as attending surgeon, Hdqrs. Dept. of the Platte, Omaha, Nebraska, and is assigned to duty at Fort Sully, South Dakota.

CAPTAIN BENJAMIN MUNDAY, assistant surgeon, is relieved from duty at Fort Sully, S. D., and is assigned to duty at Fort Nebraska, Neb.

FIRST-LIEUT. HARRY M. HALLOCK, assistant surgeon (recently appointed) is assigned to duty at Fort McPherson, Ga., for duty at that post.

FIRST-LIEUT. HENRY R. STILES, assistant surgeon (recently appointed) is assigned to duty at Jefferson Barracks, Mo.

FIRST-LIEUT. PAUL F. STRAUB, assistant surgeon (recently appointed) is assigned to duty at Fort Riley, Kansas.

FIRST-LIEUT. FRANCIS A. WINTER, assistant surgeon, is relieved from duty at Fort Riley, Kansas, and is assigned to duty at Fort Wingate, New Mexico.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 19, 1892.

GEO. T. SMITH, assistant surgeon, from C. S. S. "Hassler," and to the "Vermont."

C. H. T. LOUNDES, passed assistant surgeon, from the U. S. Receiving-ship "Vermont," and to the "Hassler."

W. F. ARNOLD, passed assistant surgeon, to hold himself in readiness for orders to the U. S. S. "Monterey."

H. N. T. HARRIS, passed assistant surgeon, to hold himself in readiness for orders to the U. S. S. "Bancroft."

G. F. WINSLOW, surgeon, to hold himself in readiness for orders to the U. S. S. "Monterey."

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, November 28, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. F. W. Draper: "On Poisoning by Illuminating Gas."

Dr A. L. Mason: "The Clinical Aspects of Gas-Poisoning in Thirty Cases."

G. G. SEARS, M.D., *Secretary.*

CENSORS' EXAMINATION.

The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet for examination of candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, December 15, 1892, 2 P. M.

Candidates should make personal application to the Secretary and present their medical diploma, or its equivalent, at least three days before the examination.

For further particulars, apply from 2 to 3 P. M., to

JAMES J. MINOT, M.D.,
188 Marlborough Street. *Secretary.*

RECENT DEATHS.

GREGORIO FIDELI, M.D., of Rome, a distinguished medical authority and writer, died at Genoa, October 26th, aged seventy-three years.

ENOCH FITHIAN, M.D., Greenwich, N. J., died November 15th, in his one hundred and first year. He graduated from the University of Pennsylvania in 1816.

F. V. JOHNSON, M.D., of New Brighton, Staten Island, died November 20th, aged sixty-six years. He graduated from the College of Physicians and Surgeons, N. Y., in 1852.

BOOKS AND PAMPHLETS RECEIVED.

The Medical News Visiting-List for 1893; Thirty patients a week. Philadelphia: Lea Brothers & Co.

Combined Gynecological Operations. By George M. Edebohls, A.M., M.D., New York. Reprint. 1892.

The Present Demand for Better Medical Education in the South. By Luther B. Grandy, M.D., Atlanta, Ga. Reprint. 1892.

Mother and Child. Part I; Mother, by Edward P. Davis, M.D. Part II; Child, by John M. Keating, M.D., LL.D. Philadelphia: J. B. Lippincott Co. 1893.

A Pocket Medical Dictionary, giving the Pronounciation and Definition of about 12,000 words. By George M. Gould, M.D. Philadelphia: P. Blakiston, Son & Co. 1892.

Practical Pathology. A Manual for Students and Practitioners. By G. Sims Woodhead, M.D., F.R.C.P., Director of the Laboratories of the Conjoint Board, etc. Third edition. Edinburgh and London: Young J. Pentland. Philadelphia: J. B. Lippincott Co. 1892.

Diseases of the Lungs, Heart and Kidneys. By N. S. Davis, Jr., A.M., M.D., Professor of Principles and Practice of Medicine, Chicago Medical College, etc. No. 14 in the Physicians' and Students' Ready-Reference Series. Philadelphia: The F. A. Davis Co. 1892.

Original Articles.

THE FORCIBLE STRAIGHTENING OF ANGULAR DEFORMITIES OF THE KNEE BY MEANS OF SPECIAL MECHANICAL APPLIANCES.[1]

BY JOEL E. GOLDTHWAIT, M.D., OF BOSTON.

The angular deformities resulting from disease in, or about, the knee-joint, may be corrected in four ways:

Gradual traction with fixation.

Rapid forcible correction (brisement forcé).

Osteotomy, usually above the condyles of the femur.

Excision, either of the whole joint, or of a wedge-shaped piece from the lower end of the femur.

The first method applies to the deformities occurring in, and presenting for, treatment, during the acute or sub-acute stages of the disease. At this time the condition is due, chiefly, to a spasmodic contraction of the posterior muscles, and immobilization combined with light extension, will, in the majority of cases, be all that is required.

The third and fourth, or the bone operations, are reserved for those cases in which there is firm bony anchylosis.

Rapid forcible straightening is to be tried in those cases in which, after the acute symptoms have subsided, the joint is held in the malposition by fibrous adhesions. If these be slight they can be broken up with the hands, and the leg straightened with comparatively little difficulty. In a certain number of cases, however, in which the deformity has lasted for a considerable length of time, the adhesions become so firm that more force must be applied, and the force applied in such a way that the hands alone are not sufficient.

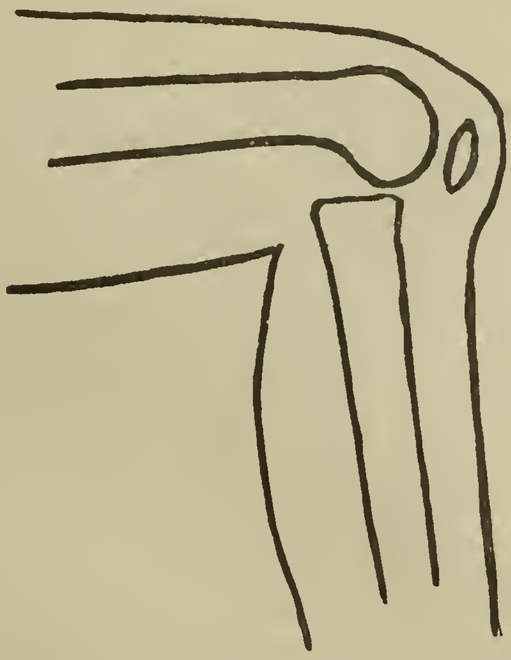

Fig. 1.

Two deformities are almost invariably present, that is, flexion, and luxation backwards of the head of the tibia upon the femur (Fig. 1). The correction of both of these is important. The former can be rectified with comparative ease, but in order to throw the head of the tibia forwards, mechanical appliances become necessary. (Fig. 2 shows the faulty apposition of the bones after the flexion alone has been overcome.)

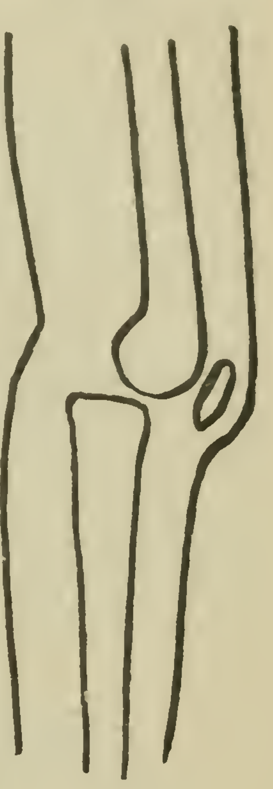

Fig. 2.

It was to meet this condition that Dr. E. H. Bradford devised the instrument pictured in Figure 3. Its construction and mechanical principles are apparent. The plate *C* is forced forwards, carrying the head of the tibia with it, and the counter-pressure coming upon the end of the femur by the straps *D*. After as much has been gained as is possible, in this way, the leg is straightened and the end of the femur, the straps *D* still being the fulcrum, the head of the tibia is drawn forwards into its normal position.

This appliance was first used upon a patient in 1887, by Dr. Bradford, and since that time six or seven cases have been treated in a similar manner, with such uniform satisfaction, that I have collected them and offer them for discussion to-night.

The first case, a girl sixteen years of age, with the right knee flexed at right angles, as the result of an old Tumor Albus. The deformity had existed for nearly eight years, and during that time she had been about with a crutch, the leg being an encumbrance rather than of any use.

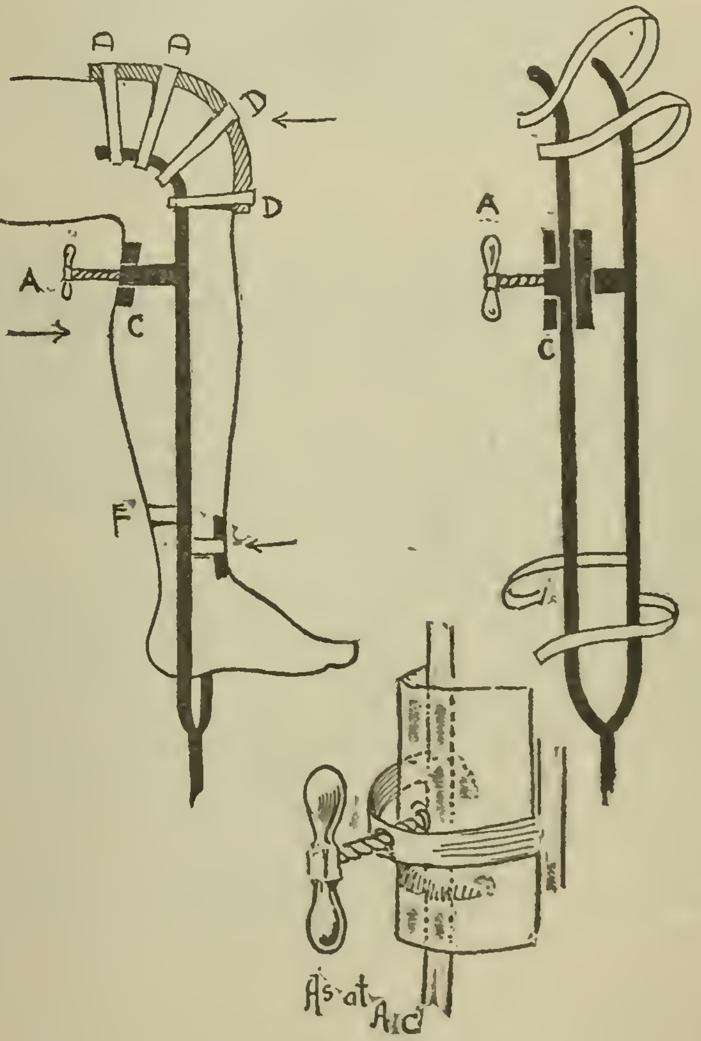

Fig. 3.

She entered the Good Samaritan Hospital, on my service, in the early part of August last, and at that time her condition was as is pictured in Figure 4. The right knee was flexed to a right angle, and the head of the tibia was subluxated. There was very little, if any, motion possible, and the bony change was comparatively slight. On the outer side was an old cicatrix, evidently the remains of an old sinus. There was no local heat, pain or tenderness.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, November 2, 1892.

On August 12, under ether, the leg was straightened with the apparatus figured above. Much force was necessary, and the instrument had to be reapplied several times, gaining a little with each application, before the position was satisfactory.

As the leg straightened, quite a marked genu-valgum was developed, so much that it was thought a McEwen operation or supra-condyloid osteotomy would be required later on. This, however, has entirely corrected itself, showing that it was probably due to an old inflammatory deposit on one side, which has been absorbed or has readjusted itself.

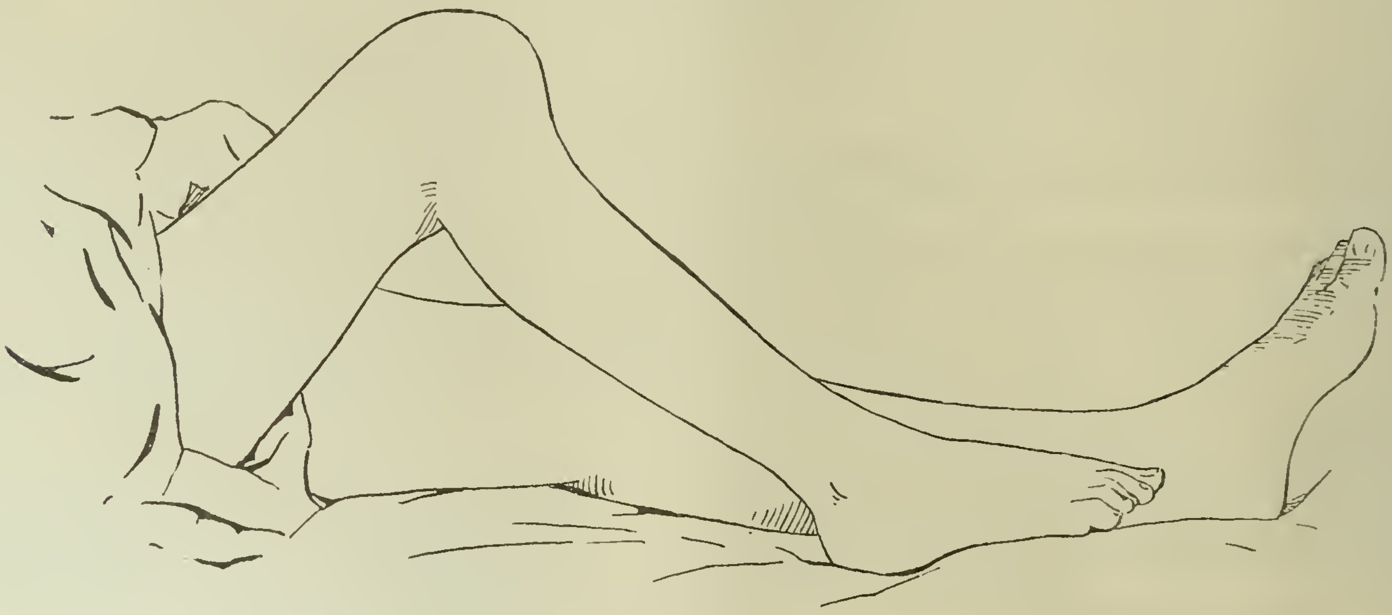

Fig. 4.

After the operation the leg was done up in a circular plaster-of-Paris bandage, from the toes to the groin. One-sixteenth of a grain of morphia was given by suppository, after the anæsthesia, and this was repeated once in a few hours, for pain. The salicylate of soda. in five-grain doses, three times daily, was given for a few days, because of its effect in controlling joint pain, although I doubt if it was necessary in this case. Otherwise, no drugs were used.

The convalescence was uninterruptedly good. She was up in a chair in one week, and about on crutches a few days later. In four weeks from the time of the operation she was walking about upon a Thomas caliper knee-splint, without crutches, and two weeks later she was discharged from the hospital with a perfectly straight leg, and with a few degrees of motion in the knee-joint, which has increased somewhat since then. Figure 5 represents her condition at about that time.

At present the patient is wearing the knee-splint, and walks about comfortably without other assistance.

The other cases which have been treated in this way are as follows:

Case II. A patient of Dr. E. H. Bradford, at the Boston City Hospital. A young woman twenty-four years of age, with a right-angled contraction of one knee, as the result of Tumor Albus eighteen years before. The head of the tibia was dislocated backwards.

With the same appliance (Fig. 3) the tibia was forced forwards and the leg straightened. With the leg straight there was a marked knock-knee, which was corrected a few weeks later by osteotomy above the condyles of the femur. The patient was in the hospital for three months, and at the time of discharge could bear her whole weight upon the leg, but walked with the aid of one crutch. A year later she was walking about without any assistance, with the leg perfectly straight.

Case III. A patient of Dr. E. H. Bradford and Dr. Abner Post, at the Boston City Hospital. A man thirty-four years of age, with the left knee flexed to a right angle, the tibia subluxated, and the foot rotated outwards, as the result of Gonorrhœal Rheumatism. The deformity had existed for five years, and during that time he had suffered almost constant pain, which prevented him from doing any regular work.

The patient was operated upon twice, and the case is of interest as showing the necessity of correcting the position of the head of the tibia, as well as the angular deformity. At the first operation the flexion alone was corrected, by manual force, and up to the time of the second operation the patient was in constant pain, which required large doses of morphia for its control. At the second operation the correcting apparatus was used, and the head of the tibia brought forwards into its proper place. After that only one dose of morphia was given, and in ten days of the time of operation, he left the hospital, walking with the aid of crutches, which were discarded a few months later, and a Thomas caliper knee-splint substituted to protect the joint. He still wears the splint, two and one-half years later, as a precaution, although without it he is able to walk perfectly well. The leg is straight, there is some motion at the knee, the muscular development of the leg and thigh is very good, in marked contrast to the condition before the operation, and he is entirely free from pain.

Case IV. A patient of Dr. E. H. Bradford, at the Boston City Hospital. A boy nine years old, with right-angled contraction of the right knee, resulting from Tumor Albus, which had lasted for about five years. The leg was straightened by means of the correcting appliance, but before the deformity could be fully overcome it was necessary to divide the ham string tendons which were firmly contracted.

In six weeks he was discharged from the hospital, wearing a Thomas knee-splint and using crutches.

There have been no unpleasant symptoms since the operation, and, at the present time, three years later, he is running about, wearing no apparatus, with a straight leg, and with some motion at the knee.

Case V. A patient of Dr. Abner Post, at the Boston City Hospital. A young girl, eighteen years old, with the right knee flexed to nearly a right angle as the result of an attack of Acute Articular Rheumatism a number of months before.

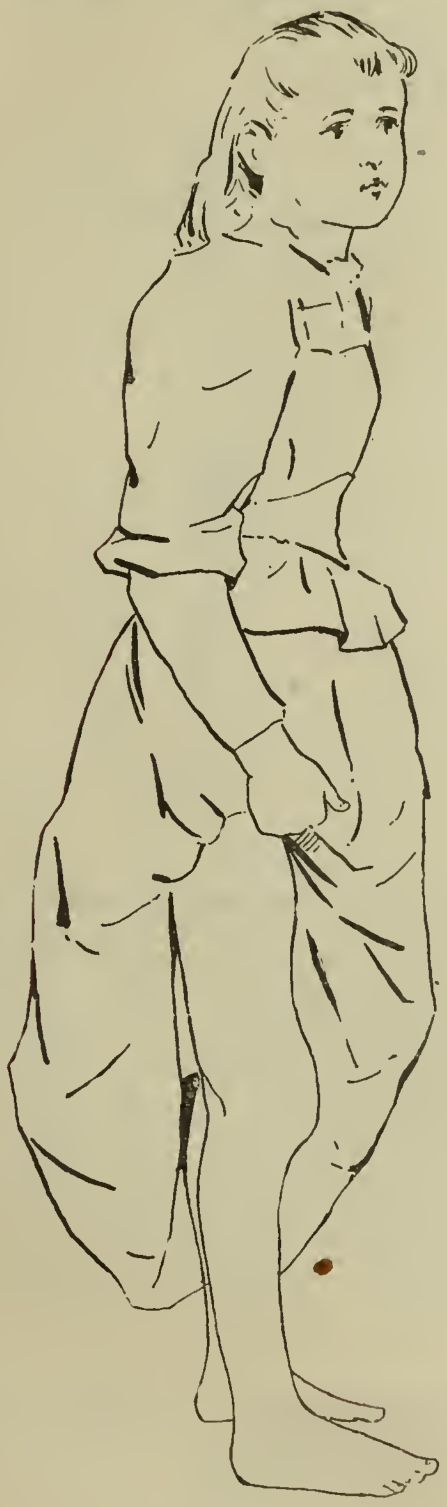

Fig. 5.

After a trial of several weeks in bed, with constant extension, without improvement, the leg was straightened with the same appliance as was used in the other cases.

At the present time, about seven months after the operation, there is considerable motion in the joint, and she is able to go about with very little difficulty.

Case VI. A patient of Dr. C. L. Scudder. A woman about thirty years of age, in which the deformity was due to articular rheumatism. The leg was straightened in the same manner as with the other cases and a very satisfactory result obtained.

I am indebted to Dr. E. H. Bradford, Dr. Abner Post, and Dr. C. L. Scudder, for permission to report these cases.

The results obtained in these cases are of interest as contrasted with the results of other operations, which are performed in the same class of cases and for the same purpose, that is, to relieve pain and to enable the patient to be about, and at work, if need be.

In the first place, at least three of the six cases had been strongly urged to have the leg amputated, and that by surgeons of ability.

It needs no argument to show that from the present condition of the patients they are better off than with wooden legs.

Excision, which is done more commonly in these cases mutilates the leg. It causes noticeable shortening, invariably leaves a stiff leg, and furthermore, is an operation having a mortality rate, in young persons of 9.42%,[2] or a per cent. that is much higher where adult cases are included. Culbertson,[3] in an analysis of from 600 to 700 operations done upon patients ranging in age from five to forty years, found a mortality rate of 29.8%.

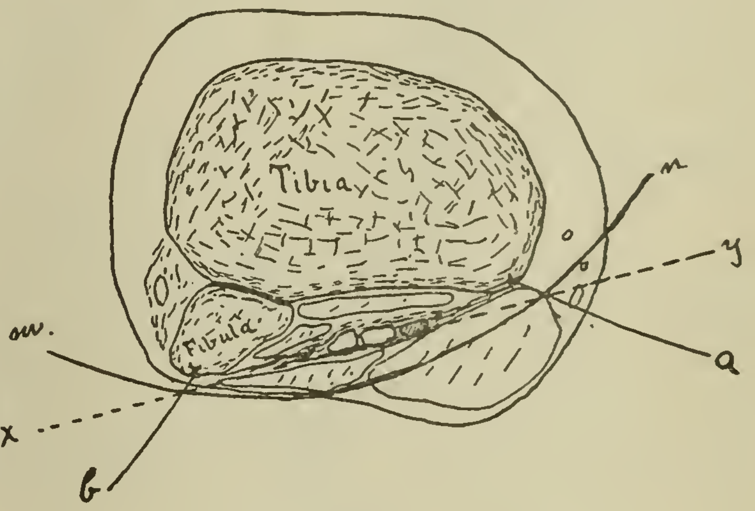

Fig. 6.

This is in marked contrast to rapid forcible straightening, which is a much more conservative treatment, and not only have there been no fatal cases thus far, but the amount of constitutional disturbance as a result of the operation, has been surprisingly slight, considering the amount of force that is required to accomplish the result. There has been but a slight elevation of temperature in any of the cases, and the pain has not been at all severe. The leg is not shortened as a result of the operation, and recovery usually takes place with a somewhat moveable joint.

Three objections to the operation have been offered: the danger of starting up a severe acute arthritis; the liability of fracture of some of the bones about the joint; and the danger of injuring the vessels and nerve in the popliteal space.

The first should be avoided by the selection of the cases, and by the judicious application of the force.

The second should not occur if the apparatus is properly applied and due caution observed in its use.

The third, or the danger of injuring the vessels and nerve, is not apt to occur because of the anatomical relations of the structures behind the joint. Through the kindness of Dr. Dwight of the Harvard Medical School, I have been able to study the relations of these structures from frozen sections and Figure 6 was drawn from a section made through the head of the tibia. This shows very clearly the way in which the tibia and fibula at *A* and *B* act as buttresses to protect the vessels from pressure even though the force be applied with a straight band as is represented by the dotted line *x – y*. The actual curved band of the apparatus still further protects these structures from injury, as is shown by the line *n – m*.

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[2] A. M. Phelps: New York State Society Transactions, 1886, p. 586.

[3] Bradford and Lovett: Orthopedic Surgery, p. 389.

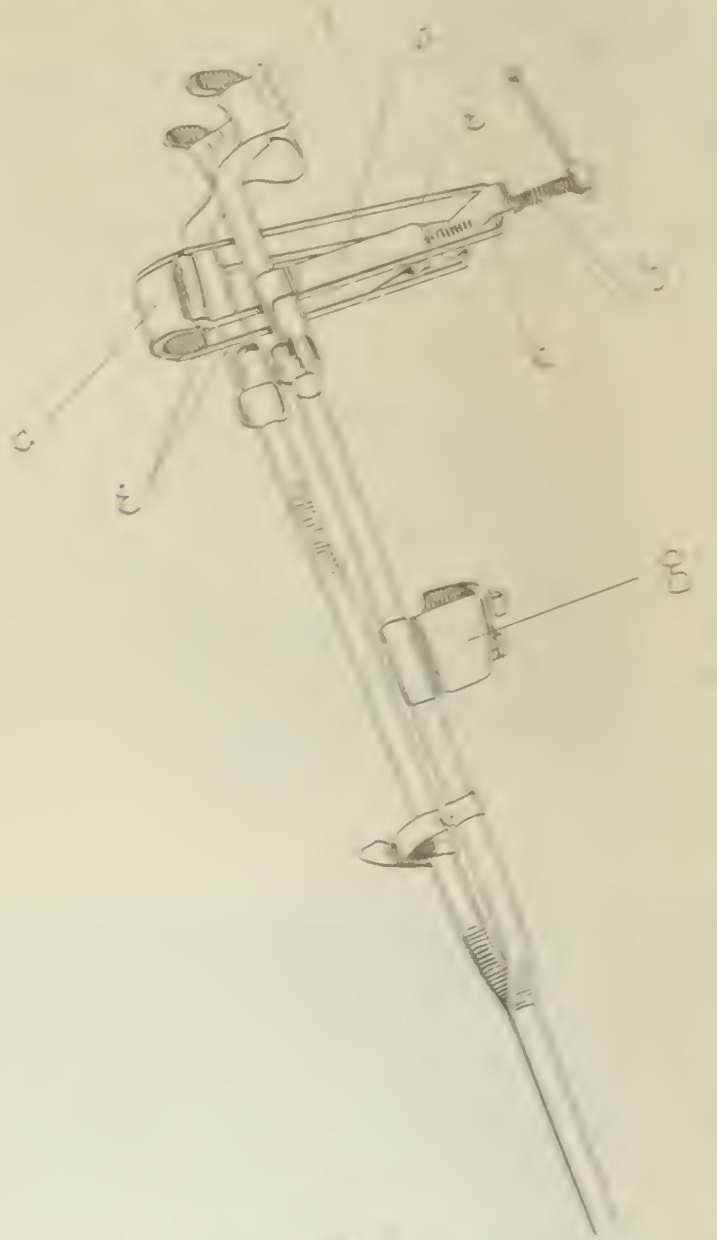

FIG. 7.

In the case of former extensive destruction of the tissues at the back of the joint with all of the parts more or less adherent, the vessels might be torn, were the apparatus used; but in the majority of these cases the operation would be contraindicated, because with this amount of destruction of tissue, and adherent soft parts, the joint is apt to be anchylosed, which would demand another operation. If this is not the case, the leg should be straightened at several sittings, gaining a little each time, and the operations done at long enough intervals for the contracted parts to have time to relax, so that there is comparatively little danger of injuring the important structures. This precaution should also be taken in elderly persons where an atheromatous change in the vessels is to be considered.

A modification of the original apparatus is pictured in Figure 7, which has the advantage of being adjustable, so that by moving the arch *a*, upon which the power is applied, nearer to, or farther from the knee, it can be used upon a child or an adult. The application of the power in front instead of behind is more convenient and more easily managed. The screw *b*, working in the arch *a*, raises the cross-bar *c*, to which the posterior band *d*, is attached by means of the steel loops *e*. The counter-pressure comes upon the end of the femur by means of the leather pad *f*, and to a less extent upon the strap *g*. The apparatus as applied is shown in Figure 8.

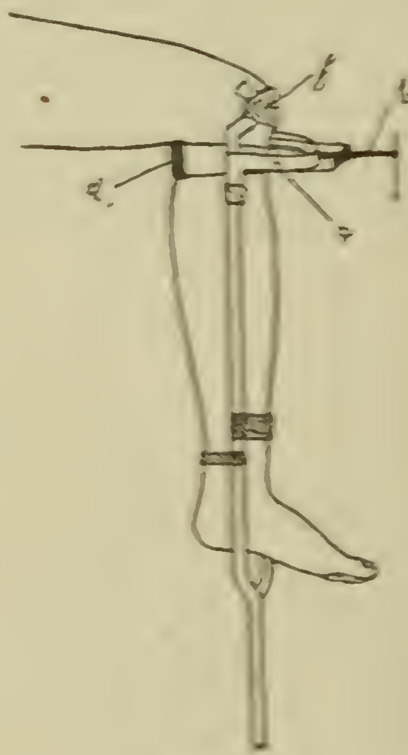

FIG. 8.

Conclusions. — The angular deformities of the knee, with fibrous anchylosis, resulting from chronic inflammatory conditions, whether tubercular or otherwise, can be corrected by means of such mechanical appliances as are here described. The results, judging from six cases, are better than can be obtained by other operations. The leg is not mutilated or shortened, and the joint recovers with more or less motion. There is no mortality and the constitutional disturbance is slight. The danger of injuring the structures in the popliteal space is slight, because of the anatomical relations of the parts, as is shown by dissections.

* * *

TOTAL EXTIRPATION OF THE UTERUS: IMPROVED METHOD OF TREATING THE STUMP.[1]

BY CHARLES P. STRONG, M.D.

It is not my intention to discuss the relative value of different operations of removal of the uterus by high amputation as against total extirpation, but rather to point out the merits which may attend the use of a Trendelenburg posture, and removal of the uterus in that position by means of abdominal incision instead of the more commonly used vaginal extirpation.

The extension of the disease into the broad ligaments, the presence of adhesions, the binding of the uterus backward, and of the ovaries and tubes, together in one mass, render extremely difficult the possibility of a thorough and complete eradication of the disease, or a removal of the whole organ by simple vaginal incision.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, November 2, 1892.

The operation also leaves, as commonly practised, a free opening from the vagina into the abdominal cavity, which is closed, perhaps by stuffing the vagina with iodoform gauze, or some such method.

The operation which I wish to present to your notice is one which I believe occupies the position of combining the advantages to be gained by the ordinary vaginal form, that is, the complete removal of the organ; it also enables the complete closure of the wound between the vagina and the abdominal cavity by its natural covering, that is, the peritoneum, and leaves less risk of infection, less chance for septic absorption of any kind than any other operation.

It is not in any one of its particulars essentially new; but the combination of them all is, I think, recognized to be of advantage by few, if any operaters.

I think Freund's operation, which was that of total extirpation of the uterus through the abdominal cavity, was rendered so difficult by the position of the patient, such as would be assumed in the case of an ordinary laparotomy, that it has fallen practically into disuse. By the Trendelenburg posture, however, this is obviated. The field of view is so extended and broadened that the operative technique becomes a comparatively easy matter.

Since the first of May I have performed this operation seven times. In only one of these cases do I think the removal of the organ would have been possible by the ordinary vaginal method of operating. My mortality has been two out of the seven. Both of these were desperate cases and were unpromising from the start, but the election was made by the patient to have the operation performed rather than to suffer death from the cancer. I should never have undertaken the cases had I been obliged to rely upon the vaginal method alone.

The entire success of the operation, I think, depends upon securing the arteries of the broad ligament before removing the uterus, dissecting off from the anterior and posterior walls of the uterus a good layer of the peritoneal investment, so that the closure of the vaginal-abdominal wound may be made complete; with this is also stripped back the bladder and rectum. With this done there is no danger of hæmorrhage, there is no danger of infection; and malignant outcroppings into the broad ligament and along adhesions between the uterus and the intestines are easily felt, seen and secured.

The cases reported in detail will afford a certain similarity; so that, after describing the various steps of the operation, I shall merely give in the individual cases the particular point that made me elect this operation in preference to the more common one. In none of these, I may say, would the operation of high amputation have afforded any prospect of removal of the disease. The sutures employed have been uniformly silk, the single exception is the continuous suture which unites the peritoneal surfaces at the completion of the operation, which is of catgut carefully prepared; and I have never seen septic absorption from it. One death of the two came in a patient in whom the investing peritoneum was so thick, and also evidently the seat of malignant disease, that I did not dare to leave any behind, and so removed it entirely and adopted the usual method of abdominal drainage by iodoform gauze. Although there was no evidence of sepsis in this case, yet I feel the patient's chances would have been much better could I have closed the wound in my usual manner. I thoroughly disinfect the vagina by soap and corrosive sublimate, scrape away all disease possible, and at the same time employ the Pacquelin cautery and pack with iodoform gauze. This secures as much asepsis as is possible in a vaginal operation. Opening the abdomen, the fundus of the uterus is seen snugly reposing against the back of the pelvis away from the bladder. With double hooks I draw the fundus as closely as possible to the abdominal wound, pass a ligature of silk with aneurism needles to include the ovarian artery and as much as possible of the broad ligament, pass the second suture including the remainder of the broad ligament and the uterine artery. I similarly secure the vessels of the opposite side, and control any bleeding from the uterus by compression-forceps. Then dissect away all the peritoneum investment possible, posteriorly and anteriorly; then cut across below the junction of the cervix into the vagina; and rapidly remove the uterus.

If the disease extends down the vaginal walls I endeavor to get below this disease before opening the vagina. I have removed down to within less than an inch of the vaginal orifice through the abdominal cavity.

Believing that the tendency of the disease is greater to return if the tubes and ovaries are left behind, it has been my rule to remove these.

The operation is accompanied by very little hæmorrhage, because the uterine ends of the vessels, as severed, are held by compression-forceps. A single large flat piece of gauze laid across the intestines at the upper end of the abdominal wound is sufficient to protect the general abdominal cavity from any fluid or from blood, which forms a pool in the retro uterine pouch exactly as with the patient in her ordinary position. The toilet of the peritoneum by this means, therefore, becomes very simple. A continuous suture of catgut closes in the peritoneum, placing peritoneal surface against peritoneal surface, thus securing a very speedy obliteration of any possibility of infection extending from the vagina into the abdominal cavity.

In my first operations with long ligatures I drained through the vagina as suggest by Dr. Krught in his operation for removal of fibroids Without going into details of separate cases, I will briefly indicate what advantage I gain by this method of operating over the more common one.

In the first case, the disease invaded the right broad ligament to such an extent that after removal of the uterus, I extirpated the ligament out to its junction with the pelvic wall. I also removed all the vaginal wall, anteriorly, and posteriorly to within about one inch of the vulva.

In the second case, there were adhesions connecting the uterus with the intestines, with the bladder, and with the ovaries and tubes, which adhesions also were in part the site of malignant disease. These bands I was able to sever entirely from the intestinal end, thus preventing a possible return through disease there. Also, in this case, both the vagina and the broad ligaments had to a certain extent become affected, and these were also removed.

The third case, along the top of the broad ligament there ran a single piece of small intestine, which lay exactly parallel with the top of the ligament, and which was collapsed, and could not have failed to have been included either in suture or in compression forceps, which might have been introduced from below upwards.

The death of the patient from the ordinary vaginal operation would have been certain, from the compression and sloughing of this portion of the small gut.

The third case was one of very marked adhesion, everything being bound together, which would have rendered it very difficult, though not impossible. In cases one and three, fibroids were complications also present, and to add to the dangers of an attempt at removal through the vagina.

Case four was a very marked case of adhesions. The woman was so enormously fat that I doubt it having been possible to have reached from the vagina up to the top of the broad ligaments, certainly not to have differentiated them from the adherent and matted mass of intestine surrounding. The vagina was also implicated nearly to the vulva. This case was the one previously mentioned, in which I was unable to secure enough peritoneum to close the abdominal wound. The patient died.

Case five was again a case of universal adhesions and fibroids as well as malignant disease.

In case six, everything was adherent, and there was also an ovarian cyst.

In case seven there was senile atrophy of the vagina, with too large a uterus to be easily brought down. As to the result of the operation from a statistician's point of view, two deaths out of seven cases seem a large per cent. That means, however, that these six were cases in which, I think, few operators would have dared to hope for a successful result from a vaginal operation, and none from high amputation.

One of these deaths was a woman with fatty heart, fatty degeneration of various organs, enormous amount of fat in the abdomen, and with drainage vaginal-abdominal. Her operation was during that hot, prostrating weather in July; and after doing very nicely for two or three days, she suddenly collapsed one night, and died, but not from hæmorrhage. The other death was from shock following the operation. The operation was tedious; and the dissection out of the intestines was extremely difficult in every way. There was also the complication of a cyst in the broad ligament to add to the danger. The woman died, according to the result of the autopsy, of general peritonitis, — a condition which existed at the time of the operation, but with no septic peritonitis.

In all these cases, before and after operation, microscopical examinations of portions of the uterus were made by Dr. Whitney or by Dr. Gannett. There could be no question, in any of them, as to the malignant nature of the disease. In only one of them has there been any secondary deposit. This is a case of malignant medullary cancer, in which the broad ligament is, and the uterine peritoneal investment were all affected by the disease. In this case there has been return, not locally, but at the meatus urinarius, a spot entirely distinct and separate. I doubt if the disease had not become systemic, as stomachic troubles which have ensued would point to the same conclusion.

My other cases are entirely free as yet, although, of course, the time is very short. Still, it is very satisfactory to realize that we have in this operation a chance of giving some assistance to those desperate cases where a woman is bleeding, is rendered uncomfortable and disgusting from the presence of a sloughing mass, and which would not be undertaken to be cured by any other means. The Trendelenburg posture is one which gives the greatest advantage in manipulations in the pelvis for the removal of growths of all kinds, with the possible exception of large ovarian tumors, in which it is unnecessary.

In those cases where we have to deal with adhesions, in which we deal with fibroids, in which we deal with tumors involving the layers of the broad ligament, or of tumors or growths which are liable to bleed, it is invaluable; and the more one works with it, the more familiar he becomes with its possibilities, the more reluctant he will be to abandon it for the old method with the shorter incision, and the greater dangers from loss of blood, tearing of the intestines, or manipulation of the intestines. I know no disadvantages except the one of a longer abdominal opening. The patient certainly looks extremely livid, but circulation is unimpaired. I have never seen an after result which I felt to be unfavorable, due in any way to a prolonged operation in this posture; and one of mine, that was the first one, lasted nearly three hours.

As Dr. King of New York has well said in explaining this position, you not only can feel and have all the advantage of your tactile ability, but more than all you have in addition to that, the opportunity of seeing, which is in many of these cases of extreme value.

Clinical Department.

A CASE OF NEPHRO-LITHOTOMY, WITH REMARKS ON THE OPERATION.[1]

BY PAUL THORNDIKE, M.D.

The patient, a man forty-four years old, has always been perfectly well up to fifteen years ago, when his present trouble began, as he supposes, with an attack of acute cystitis of non-venereal origin, and brought on by a prolonged and severe exposure to cold. The cystitis has persisted from that time to this with varying degrees of intensity, and has been associated from time to time with attacks of pain in the left loin strongly suggesting attacks of renal colic.

During the last nine years he has noticed more or less grit in his urine at times; but he never passed a stone until four years ago. During the last four years he has passed many stones. At first they were rough, irregular in shape, dark in color, and the largest was about the size of a large pea. At this time he was told that they were uric-acid calculi; but for the past two years they have been more like the specimen shown to-night, and were evidently phosphatic.

In April, 1885, the man was a patient at the Massachusetts General Hospital; and an examination of his urine was made by Dr. E. S. Wood at that time, as follows:

Color, red. Specific gravity, 1,022. Reaction, acid. Albumen, one-fourth per cent. Urates, increased in amount. The sediment was large in amount, and contained much pus and blood, an excess of bladder-cells and small round cells, masses of pus, blood, epithelium and crystals of calcic oxalate and sodic urate. Diagnosis: Cystitis and pyelitis, possibly due to a calculus of calcic oxalate and sodic urate.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, November 2, 1892.

An operation upon the kidney was suggested to the patient at this time, but he left the hospital without submitting to it. Since that time he has had constant cystitis, frequent attacks of pain and has passed many small stones.

The man was first seen by Dr. F. S. Watson in June of this year. At that time he was confined to his bed, was very weak, having constant vesical tenesmus, and was passing a foul urine containing a large amount of ropy sediment. His attacks of pain were coming more frequently, that is, several times each month, and each one left him much exhausted. Some of these attacks were accompanied by high fever, chilly sensations, a brown tongue and a hectic flush; and according to the patient's statement, by a swelling in his left loin marked enough for the patient himself to recognize. This swelling was rather tender to deep pressure, and always disappeared suddenly, its disappearance being associated with a discharge of fresh pus into the bladder. At this time the urine was foul, alkaline, specific gravity 1,014, and the sediment was thick and ropy. The amount of urine was too great. No stone could be detected in the bladder. There had never been any symptoms referable to the other kidney except one slight attack of pain in the right loin a few days previous to Dr. Watson's visit.

Dr. Watson very kindly referred the case to me for operation, and after giving the patient a few days to recuperate from the last severe attack of pain, I operated July 7, 1892. The operation was the usual lumbar nephrotomy.

The patient was placed on right side with small hard pillow under him so as to bring the left loin into prominence. An incision, four inches long, was made from a point just below the twelfth rib at the outer edge of the erector spinæ, and extending obliquely downward and outward. Peri-renal fat was quickly and easily reached and the kidney easily felt as the patient was so emaciated. The finger, as it explored the outer surface of the kidney, felt nothing resembling a stone, but it was found that the kidney was very large and neither end of it could be reached. So a smaller, secondary incision was made at right angles from the lower end of the first, and in this way much more room was obtained in which to work. Then a stout suture was passed directly through the kidney substance and tied in a loop, so that the organ could be drawn well up into the wound. Then an induration could be readily felt through the wall of the pelvis of the kidney. This was cut down upon and proved to be a stone lying in the trumpet-shaped entrance to the ureter and easily removed with dressing forceps. (The stone weighed, after drying, nineteen grains. Its size and shape are shown in the cut.) The pelvis of the kidney was lined with a thick, tough pyogenic membrane and so was carefully curetted and washed out with hot boracic solution. There was no pus found in the kidney. As there was very little peri-renal fat and the kidney fell back away from the external wound when liberated, it seemed best to stitch the pelvis of the kidney to the edges of the external wound. This was done by two silk sutures, a drain of rubber inserted, and a very large dressing applied after a few stitches had been put into the external wound.

The patient made an uninterrupted recovery, with little pain, no bleeding, no temperature. Sat up on seventh day. Tube out on tenth day. Out of doors on fourteenth day; and the wound was entirely healed with no leakage inside of five weeks from the day of operation. The urine became clearer, the specific gravity of it rather higher though not much, and six weeks after the operation the patient had gained greatly in weight and was at his work again. Since the operation he has passed a little gritty material once or twice but has had no pain at all, and is steadily gaining in health.

I have reported this case for two reasons: In the first place, to put one more case on record, and in the second place, to emphasize certain points which the case suggests and which seem to me of interest. To begin with, then, the case was not what I had suspected, that is, a case of phosphaturia of sufficient duration and severity to cause stone formation in the kidney, but the phosphatic deposits proved to be secondary to a pre-existing deposit of sodic urate and calcic oxalate as shown by Dr. Wood's examination of the urine in 1885.

I had suspected the primary phosphaturia from the history and condition of the patient, of course before I had seen Dr. Wood's examination and before I operated, and possibly was influenced by my own belief that phosphaturia may be something of far greater importance than the symptom it is commonly considered, and by the fact that I had recently seen and watched several cases of this sort, of long duration and considerable severity.

Then, as to the pain: the attacks of colic seemed to bear no relation to the activity of the patient, and were quite as apt to come on when he was lying quietly in bed as at any other time. This point has been mentioned in the reports of similar cases in England and the attacks of pain described as brought on by "emotional" causes.

When the kidney was cut down upon it proved to be so large that neither end of it could be reached through the original incision, which was quite four inches long. Even after the second incision was made and far more working space obtained, and after the kidney was drawn up into the wound by a suture passed through it, the ends of the organ could not be reached. In view of the fact that for the first few days after the operation far more urine was passed through the wound than through the bladder, it seems fair to suppose that the size of the kidney operated upon is not due to an enlargement resulting from the presence of the calculus but that it is a natural enlargement, such as by no means infrequently exists, the other kidney being probably smaller in proportion.

In passing a suture through the organ in order to draw it up into the external wound, the suture was passed in the way recommended by Mr. Arbuthnot Lane, in cases where the kidney substance has been extensively incised in the removal of the stone, and there is serious hæmorrhage. This procedure is easily accomplished, and is probably the best way to arrest a severe hæmorrhage from the kidney substance. Mr. Lane simply passes one or more deep sutures through the cut edges of the kidney and then ties tightly, making the knots come at the convex edge of the kidney.

When the stone was found lying free at the entrance to the ureter, it was easy to see how completely it plugged that orifice, and yet how readily it might be dislodged and allow the escape of pent-up pus into the bladder. If this was the only calculus in the kidney, and it certainly was the only one which could be found without extensive incision into the kidney substance, a pyo-nephrosis might exist in that kidney for a very long time without bringing about much degenerative change in the organ itself, as the pus was escaping at such short intervals from behind the obstructing calculus.

One more point: the vesical tenesmus, which had been constant and very severe for months in spite of all treatment, disappeared so completely and instantly after the operation, that I believe it was largely or wholly reflex from the kidney, and not due to the local condition of the bladder.

The operation of cutting down upon the kidney for the purpose of removing a stone is by no means a new operation, although it was never done prior to 1872, except when there was a swelling in the loin, and the operation consisted for the most part in opening up an abscess cavity. Mr. Thomas Smith first suggested the operation in 1869, and Newman says "the first operation in which a calculus was designedly removed" from a suppurating kidney was performed in April, 1872, and published by Andrew and Callender in St. Bartholomew's Hospital Reports, Vol. ix. The operation as we know it and employ it to-day was first performed by Mr. Henry Morris in 1880: that is to say, this was the first operation which aimed to remove a stone from the kidney before the trouble had existed long enough to bring about marked organic change in the affected kidney. Mr. Morris, in defining nephro-lithotomy, limits the operation to these cases and classifies the operations, where pus and tumor exist, as nephrotomies for pyo-nephrosis.

The older operation of cutting into a suppurating kidney, though equally easy and in many instances far easier of performance than the operation as done by Morris, is, of course, a much more serious one, and its somewhat meagre statistics show a very large percentage of deaths, that is, about 40%. Newman gives it as 43.3%. On the other hand, the cases in which this operation has been done before suppurative change has begun, have done remarkably well, the percentage of deaths being less than 5%, and Newman reports 42 cases with no death, while Legue reports 40 cases with but two deaths.

Dr. G. W. Gay, in a paper read last spring before the Suffolk District Medical Society,[2] and reporting the removal of what is probably the largest renal calculus on record, gives us the statistics of all the cases of this operation recorded up to April 1, 1892, and numbering 118. Of these there were 100 recoveries and 18 deaths, a mortality of 15%. I find 10 cases reported since that date, making a total of 128 cases reported up to the present, with 18 deaths, a mortality of 14%. This includes all operations in both suppurating and non-suppurating cases, and this mortality represents very fairly, I think, the death-rate of all reported operations up to the present time. Of these 18 deaths, 10 occurred in cases which had come to suppuration at the time of operation, six in cases where there was no suppuration, and in the other two this point was not mentioned in the report.

The all-important point, then, is that of an early diagnosis and operation. On the other hand, we must not operate with too great freedom, in our zeal for as early operation as possible, for various symptoms are apt to prove misleading; and although the total number of reported operations is by no means large, that is, 128, it is known that the operation has already been attempted over thirty times when no stone was found. In a few of these thirty odd cases a complete cure of the pain has resulted, curiously enough.

It is not my intention to attempt to consider the question of diagnosis in these cases at any length; but in view of the great importance of an early diagnosis, it does not seem out of place to quote a portion of a brief summary from Mr. Henry Morris's most admirable monograph, "On some Points in the Surgery of the Kidneys." He says:

"1. Although hæmaturia, associated with frequency of micturition and a small amount of pus in the urine is, in the absence of disease of the lower urinary tract, strong evidence in favor of renal calculus; yet pain, either in the loin, groin, or testicle of one side is also needed to justify the surgeon in exploring the kidney through the loin.

"2. Pain alone, when persistent, or frequently paroxysmal, and giving rise to sickness and sweatings, or subject to exacerbations during perfect rest, justifies lumbar exploration. When there is a history of hæmaturia without pus, or a trace of pus without a history of hæmaturia, associated with one-sided pain, the exploration ought to be made if alkaline treatment has failed.

"3. When the above symptoms occur in persons with acid urine, or of gouty tendency, or who lead sedentary or indulgent lives, alkaline treatment ought to have a prolonged trial before proposing an exploratory incision."

Many procedures have been suggested to assist in overcoming the difficulties of localizing the trouble in renal cases. In the first place, there are the accessory cutting operations, such as that of Mr. Knowsley Thornton, who palpates the kidneys through an abdominal wound in doubtful cases; the incisions made along the course of a ureter for collecting the urine of each kidney separately; the cystotomies done for the express purpose of observing the urine from each kidney as it flows into the bladder. Then there are various methods (notably Silbermann's, Skene's and Byford's) suggested of making compression over one ureter and then collecting the urine from the other. Finally, there are the methods of direct catheterization of one or both ureters either by touch or with the aid of a cystoscope.

There is probably an occasional case of unquestioned renal disease where one or another of these methods may prove necessary in order to tell which kidney is involved or whether both are; and it is possible that these procedures will occupy a prominent place in the operative surgery of the future.

With our present knowledge, and in view of the fact that an early exploratory lumbar operation is attended with such small risk, the scope for these accessory operations for diagnosis seems to be rather small.

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[2] Boston Medical and Surgical Journal, August 11, 1892.

A company has recently been organized in London. the ostensible object of which is to insure married people against twins and triplets. A married man expecting to become a father must deposit £5 to become a policy-holder. In case the policy-holder's wife has twins he will receive £50; and in case she has triplets, he will get £75.

LAPAROTOMY FOR EXTRA-UTERINE PREGNANCY: REMOVAL OF MACERATED FŒTUS OF EIGHT MONTHS.[1]

BY J. COLLINS WARREN, M.D.

I have selected the following case as one likely to be of some interest to obstetricians and gynecologists than the ordinary run of abdominal cases.

B. M., twenty-seven years old, entered the hospital December 21, 1891, with an abdominal tumor of nearly a year's growth. She was an emaciated but not unhealthy-looking person. Her first child was born five years before. Two years later she had two miscarriages, the second occurring after an interval of six months. Since that time the catamenia had been perfectly regular up to January 17, 1890, when they appeared for the last time for eight months.

In February she noticed a small tumor forming in the right iliac fossa, which at the end of the fifth month had reached about the size of a fist, and could be felt plainly under the abdominal walls. For this she consulted a physician, who thought she was pregnant, but also had a tumor. During January, February and March she had suffered somewhat from nausea. In June the breasts became swollen and contained milk, which continued to form to a certain extent until after the operation. Movements were felt in the tumor from the fifth month until the middle of September. During this month the catamenia reappeared in an irregular manner covering a period of four weeks. There was no excessive flowing and no pain. The tumor had enlarged up to that time, but subsequently decreased somewhat in size. At no time were there any signs of labor. Since the reappearance of the catamenia they had been regular up to the time of the patient's entrance into the hospital.

On examination the patient was found to be emaciated, which condition seemed to make prominent a tumor occupying the hypogastric region and reaching above the umbilicus, situated on the median line and feeling firm and nodular to the touch and somewhat movable. Dulness existed over the whole area of the tumor. There was no fluctuation. No murmur was detected on auscultation. There was a faint pigmentation on the median line between the umbilicus and pubes, but no discoloration of the areolæ.

A vaginal examination showed that the uterus was situated on the left side of the tumor and was displaced somewhat upwards by it. The cervix was somewhat softened and patulous, so that the finger-tip could be introduced. The probe entered three and a half inches and could be felt through the abdominal wall in the left inguinal region. The tumor could be felt distinctly at the side of the uterus, situated deeply in the pelvis. The temperature was somewhat elevated and continued so, and the pulse was feeble. The patient was therefore kept in bed and given nourishing diet until January 6, 1892, when the operation was performed. Although the question of extra-uterine pregnancy had been considered, the weight of opinion seemed in favor of the diagnosis of uterine fibroid.

An incision was made on the median line and was afterwards enlarged so as to extend from two inches above the umbilicus to the pubes. On opening the peritoneal cavity, a tumor was seen presenting the external appearances of a fibroid with a coil of intestine closely adherent to its upper left surface. On palpation a sense of fluctuation was detected and the aspirator-needle was introduced, without, however, obtaining fluid. An attempt was now made to separate the intestine from the tumor. During an effort to lift a thick adhesion from the surface, the finger slipped through the walls of the tumor into a cavity, and immediately a quantity of brownish, dirty but odorless fluid escaped. The fœtal head was the first found presenting at this point, which was near the fundus of the cavity. The opening was enlarged, and a partially macerated fœtus was found surrounded by a small quantity of grumous fluid. On lifting out the fœtus, the cord was found to be attached to the placenta, which was readily detached from the walls of the cavity. There was no hæmorrhage. The toilet of the peritoneum was carefully made, and a glass drainage-tube was inserted behind the sac, the walls of which were stitched to the edge of the wound, as the sac extended deeply into the pelvis and seemed everywhere adherent. The cavity was then carefully wiped and washed out, and a second glass drainage-tube was inserted and surrounded with iodoform gauze. An aseptic dressing and swathe were then applied.

The following is a description of the specimen, by Dr. W. F. Whitney:

"The fœtus was in general well formed; the length 33 centimetres; the weight was 850 grammes. The nails covered the finger-ends, and the head was covered with thin, light hair. The epidermis was macerated, and hung in flakes from the surface of the body. There was very little fat tissue, and the breast-bone was sunken in, giving the appearance of an absence of the sternum, but dissection showed it to be present. It had evidently been pressed in through lateral force, and to such an extent as to leave its impress on the anterior side of the heart, which was quite flat instead of normally rounded. There was a small, well-formed placenta, attached by a short, thin cord. Nowhere was there any formation that would give a clue as to the original seat of the placenta."

The patient made an uninterrupted recovery; but the wound healed slowly, and on April 27th, when she was discharged, a small sinus existed into which a fine probe could be introduced about two and one-half inches. When seen a few days before this meeting, the sinus had healed, and the patient appeared to be in her usual state of health.

The appearance and situation of the sac suggested a tubal pregnancy, with extension of the sac downwards between the layers of the broad ligaments. The cavity was filled with macerated membranes; but as the wall in places was quite thin, no attempt was made to dissect them off.

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[1] Read, by invitation, before the Obstetrical Society of Boston, June 11, 1892.

A Medical Pilgrimage. — The fraternity of St. Cosmo, consisting of pious practitioners in different parts of France, under the leadership of Dr. Ferran, have recently made a pilgrimage to the Votive Church at Montmartre. One of the chapels is consecrated to the African saints Cosmo and Damianus, the patrons of medical practitioners. These saints suffered martyrdom under the Emperor Diocletian in the beginning of the fourth century. Their bodies are buried at Luzarche, to which place the medical men of Paris in the fourteenth and fifteenth centuries, made an annual pilgrimage. This custom has recently been revived by a few doctors desirous of continuing old traditions.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

(Continued from No. 21, page 502.)

THE "SPECIFICS" FOR INEBRIETY.[5]

After a discussion of the varieties of inebriety and the conditions which promote over-indulgence in alcohol and the methods by which the victims of this morbid appetite may be relieved, Dr. Chaddock concludes that there can be no specific for drunkenness. Further the success of the so-called "Keeley cure" must be explained on other grounds than that of a specific action.

His conclusions are best given in his own words: "Dr. Keeley's success is almost exclusively due to an adroit use of what has been called mental therapeutics. Undoubtedly, like all successful charlatans, he is a keen observer of humanity, and as full of tact as his pretended medicine is devoid of specific action. He is shrewd enough to limit his ministrations to a certain class of cases — to those that have still left a spark of self-respect and are sane enough to desire deliverance from their burden at any price. He meets such individuals on a ground that is not accorded them by others and thus at once wins their respect and confidence. He promises them a cure, and they give themselves up to his treatment without a shadow of a doubt about success. But the patients have had a sad experience with self-imposed 'mental therapeutics' in the past; and therefore it is necessary to reinforce such treatment by a decided placebo, so the hypodermatic method is resorted to as the most impressive. Under the constant influence of artful precepts and example, and the promptings of desire, the patients abstain. The 'specifics' are continued; and to their searching power are ascribed the various anomalies of sensation that result from the withdrawal of the alcohol. The treatment is kept up until the natural regenerative power of the nervous system has fully asserted itself, and then it is discontinued. The method is one that is severely individualized in more than one sense. The cure depends on the physician and the ability with which he reads his patients."

HYDRASTININ FOR UTERINE HÆMORRHAGE.[6]

Dr. Gottschalk has had a large and favorable experience with this drug, which he uses subcutaneously, in the region of the glutei; or, if objection is made to this method, he does not hesitate to give it by the mouth. The latter channel must be used with care otherwise gastric disturbance may be caused; not more than five-sixths of a grain three times a day should be given internally. The fluid extract may be given, twenty drops three times a day, but the alkaloid has the advantage of being a more reliable preparation. Hydrastinin acts upon the vascular system to cause contraction of the vessels. It cannot be given in place of ergot, which acts upon the muscles of the uterus. He has found it serviceable in those uterine hæmorrhages which are due to marked congestion of the uterus; and climacteric menorrhagias are much improved by a careful treatment with this substance.

MORPHINE HYDROBROMATE.[7]

Dr. Finney has made and used a solution of hydrobromate of morphine, in order to avoid some of the unpleasant consequences which follow the administration of the ordinary salts of morphine. His results were so satisfactory that he gives the following details of the preparation of this salt.

He precipitates a solution of hydrochlorate of morphine by making it alkaline with ammonia water. It is set aside for a time, and then filtered; the precipitate on the filter is redissolved in dilute hydrobromic acid, and sufficient water is added to make the solution of a suitable strength.

With such a solution he has often though not invariably induced quiet sleep and relief from pain, without the unpleasant after-effects of headache and nausea sometimes experienced when other morphine preparations are used.

PNEUMONIA TREATED BY TRANSFUSION OF BLOOD FROM A CONVALESCENT CASE.[8]

Drs Hughes and Carter outline briefly some of the work which has led up to the use of this treatment, and then report one case of their own.

At present it may be considered that pneumonia is of bacterial origin, and that it offers one of the best opportunities for the determination of the possibility of cure by the production of an artifical immunity.

About a year ago G. and F. Klemperer found that rabbits vaccinated by cultures of varying strength of pneumococci in bouillon had become immune, injections from the most virulent cultures producing no effect. From cultures they isolated a substance — an albumose pneumotoxine; which being injected into rabbits or into men, produced febrile symptoms similar to those of pneumonia. In animals previously immune by vaccination the injection had no effect. They further found that the effect of injection of cultures of pneumococci was promptly antagonized by the injection of serum of men rendered immune by a recent attack of pneumonia.

E. Mosny further determined that while serum from an immune animal aborted the effect of the pneumotoxine, vaccination practised subsequently to inoculation with virulent culture had no such effect, the animal invariably dying.

This points to the probablity that the substance conferring immunity is not identical with that antidoting the pneumotoxine, and thus bringing about a cure, but that the former generates the latter. These substances have not yet been isolated.

In six cases of pneumonia in men, from four to six cubic centimetres of serum were injected cutaneously and the crisis appeared in from six to twelve hours thereafter, with slowing of the pulse and respiration rate.

Neisser reports three cases of pneumonia in men treated by injections of serum, from fifty to one hundred and thirty cubic centimetres of serum being used. Favorable cases have also been reported by others.

In the following case defibrinated blood instead of serum was used. A man twenty-four years old had fever on July 9th, and was admitted to the Philadelphia Hospital July 13th, with a temperature of 104° to 105°, pulse 120 to 130, respiration 35 to 40, expectoration rusty. There were signs of pneumonia on the left side, and the sputa contained diplococci. On the 16th the temperature suddenly fell, reaching 97.8°; by evening the temperature rose to 102°. By the 19th the temperature had again reached normal and he had a very satisfactory convalescence. On the 29th three hundred cubic centimetres of blood were taken from the left median basilic vein for transfusion. The blood was whipped and all fibrin removed; it was then filtered through several thicknesses of gauze to further remove any small clots, all under antiseptic precautions.

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[5] Medical Standard, vol. xi, No. 1.

[6] Therapeutische Monatshefte, May, 1892.

[7] British Medical Journal, September 17, 1892.

[8] Therapeutic Gazette, October, 1892.

The case to be treated was that of a man thirty-five years old who was taken ill July 25th, and admitted to the hospital July 28th. Temperature 104°, pulse 124, respiration 36. Cough, pain in the side. Expectoration rusty; microscopic examination showed it to contain numerous diplococci. Signs of double pneumonia. On July 29th at 10 P. M., three hundred cubic centimetres of blood taken a few minutes previously from the convalescent case above described, were injected into a vein by means of a glass canula connected by a rubber tube with a funnel. The temperature varied from 100° to 104° until the next day at 5 A. M., when it began to fall, until by noon it had reached 98.4°. For three days there were untoward symptoms; such as a chill, vomiting and purging, immediately following the injection; and deafness developed a little later. The symptoms, due probably to emboli, were alarming at the time; and the authors strongly advise against the use of defibrinated blood on account of its attendant dangers.

On the other hand, serum is perfectly harmless and definite results have now been obtained by various observers in more than a score of cases; and it seems probable that in the blood of persons or animals after an attack of pneumonia there is a substance which is antidotal to pneumonia.

DUBOISINUM SULPHURICUM.[9]

Dr. Lewald states that as a sedative in mental diseases this drug has no superior. He has used it in a large number of cases, and finds that its hypnotic influence can be depended upon. It is to be administered subcutaneously, in doses of not more than 0.002 grains and it is in no case to be increased. The author thinks that if the drug were more widely known, the time would not be long before it would supersede hyoscine, as it is more effective and has less disagreeable properties.

IODIDE OF POTASSIUM IN THE DIAGNOSIS OF PHTHISIS.[10]

An observation which a few years ago was made by Sticker, was recently confirmed by the same author in regard to a peculiar action of iodide of potassium in doubtful cases of phthisis. It appears that in instances of this disease, when no râle or blowing murmur is detected at the apex of the lung, the seat of the lesion, small doses of the drug give rise in a few days, to the missing signs. The drug seems to stimulate secretion, especially in the neighborhood of diseased tissues, thus producing râles. In four cases of suspected tuberculosis where negative results were obtained from physical examination of the lungs, the ingestion of the potassium salt, for purposes of diagnosis, produced distinct signs of localized reaction. The same results were observed in cases of pleural adhesions or pleuritic roughenings and in those of diffused dry bronchitis.

THYROID JUICE IN MYXŒDEMA.[11]

It has been shown by Professor Horsley that myxœdema is due to the loss of function of the thyroid gland, and the cases of Dr. Murray, to which this abstract is intended to direct attention, support this view of the causation of myxœdema and show how by a practical application of this knowledge the condition of patients suffering from this disease can be considerably improved. It has been shown that after thyroidectomy in dogs, injections of thyroid extract remove the acute symptoms following the operation. In the cases reported by Dr. Murray the extract of the thyroid gland of a sheep was used, freshly prepared each week. The thyroid glands are removed from several sheep just after they have been killed. Each lobe is minced and then bruised in a mortar. For each lobe used one cubic centimetre of glycerine and one cubic centimetre of a half per cent. solution of carbolic acid in boiled distilled water is added. The mixture is allowed to stand for twelve hours, and then squeezed through a cloth in a press so as to obtain as much liquid as possible from the mixture. All of the apparatus used is carefully cleaned. The manufacturers intend to improve upon this method which will lessen the danger of local inflammation and suppuration.

In Dr. Murray's cases twenty-five minims of the extract were injected, with antiseptic precautions beneath the skin of the interscapular region once a week. In some instances it is better to give ten to fifteen minims more frequently. It is important to inject slowly, five minutes for twenty-five minims, as occasionally flushing, nausea, and stabbing pain in the lumbar region have immediately followed a rapid injection. On one occasion there was loss of consciousness and general tonic muscular spasms for a few seconds in one patient. The injection should be stopped if the patient begins to flush and no pressure should be made on the seat of injection lest it should promote the too rapid entrance of the extract into the circulation.

One of the cases reported by Dr. Murray was that of a woman of forty-six who had suffered from myxœdema for four or five years. After treatment for three months the patient had improved very much. The improvement continued during ten months more, owing to injection of twenty-five minims of the extract given on the average once a fortnight, except that the temperature remained subnormal unless the injections were given once a week. When the injections were omitted for five weeks the symptoms began to return, but her condition was again improved when the treatment was resumed. During the first thirteen months no local disturbance of any moment followed the injection. After the last injection a large brawny swelling slowly developed which suppurated. After incision it discharged freely and healed, but the myxœdema symptoms returned as the injections were discontinued.

A second case did well on injections of thyroid extract once a week for three months, twenty-five minims at each injection. The first sign of improvement was in the temperature which remained above 96° at the end of the first week, and after the end of the first month nearly always above 97°. During the two following months the temperature ranged between 97° and 99° instead of between 95° and 96° as before the injections were given. After four months the injections were made once a fortnight, for two months the temperature was one degree lower than with weekly injection and the patient did not feel so well. After this the treatment was given once a week. The injections were only twice followed by unpleasant symptoms, one injection causing an indurated swelling which disappeared without suppuration.

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[9] Journal of Nervous and Mental Diseases, June, 1892.

[10] University Medical Magazine, vol. iv, No. 2.

[11] British Medical Journal, August 27, 1892.

Two other cases show that in patients with myxœdema who have weak hearts there is danger from the unusual and unaccustomed exertion which the patients were tempted to take after their condition had improved. Both of these patients were more than sixty years old. They died after the symptoms of myxœdema had been much relieved.

In cases with signs of cardiac degeneration either the patient should be especially warned not to take any unusual exercise when improvement takes place or their treatment should not be undertaken.

From these, and cases reported by others, it seems that we are enabled to a considerable extent, to supply the place of the natural secretion which is wanting in myxœdema, and that the patient's condition can be improved so long as the treatment is maintained.

The unpleasant symptoms which occasionally follow an injection may be obviated by injecting slowly, at the rate of two or three minims a minute. Sterilization of the extract and strict antiseptic precautions reduced to a minimum the risk of a local abscess.

Among the reports of a number of cases on the use of the thyroid gland in the treatment of myxœdema the following is one of the most recent which has come under the eye of the reporter, and is taken from the *Lancet* of October 15, 1892.

A case of myxœdema is now under treatment, the results of which will be watched with interest by the profession. The patient is a woman aged forty, who has been treated for nearly three years. In every respect it is an extremely typical case, persistently subnormal temperature, general swelling of the integuments, dryness of the skin, partial baldness, clumsiness of movement, slowness and thickness of speech, etc. The patient was admitted to the Royal Free Hospital in July under the care of Dr. Hector Mackensie, for the third time, in order to be treated by hypodermic injections of thyroid juice. In consequence of the difficulty experienced in obtaining the latter, Dr. Mackensie was induced to try the effect of feeding the patient on fresh thyroid glands. The result has been a very striking improvement. The myxœdematous swelling has entirely disappeared, the temperature has become steadily normal, the skin moist and the speech natural. The patient says she feels as well as ever she did in her life. The change in her appearance is such that the existence of the disease would probably not suggest itself to any one seeing her now for the first time. The importance of this method of treatment is obvious. In view of the recent observations on the advantage of the thyroid juice when given in the form of injections this method would seem to constitute a distinct advance. It can be easily carried out and is free from risk, which cannot be said of the subcutaneous mode of treatment.

A New Use for Cats. — Cats are being extensively used in New Zealand for the destruction of rabbits. The owners of one estate are so pleased with the efficacy of the new "cure" that they have given an order for five hundred cats. It is not, however, understood, the *British Medical Journal* reports, that the antivivisectionists see any reason to interfere, seeing that only a money profit, and not the increase of knowledge or the relief of suffering, is in view.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, November 2, 1892. Dr. Abner Post was chosen Chairman of the Section for the ensuing year.

Dr. W. W. Gannett showed a

TUMOR OF THE BRAIN,

from a woman a little over sixty, who was many years the subject of chronic dementia. The case has been under observation for the last two years only. She was sent to the Boston Lunatic Asylum two years ago at the time of the fire at the Worcester Asylum. When she entered the hospital at South Boston, or soon after, it was noticed that there was a slight projection just over the right eye, involving the forehead and the tissues just over the zygoma. From that time to the time of her death there has been but slight increase in the mass externally, and not giving rise to any symptoms whatever. She has never complained of any pain, and there has been no paralysis. Locomotion was excellent except for the fact that she had a fractured hip, so that in getting about she used a chair to steady herself. The condition, as shown by the specimen, is, it seems to me, very remarkable; and I think it can hardly fail to be of interest, especially in connection with topical diagnosis and in connection with the operation in these cases. It consists of a tumor which started in the dura in the outer portion, so that its growth was essentially one outwards. In its growth it has completely involved the bone over an area extending from the orbit on the right side to a point where the frontal and parietal bones join. It extended nearly to the median line and downwards, so that a portion of the zygoma, or at any rate that portion of the temporal and frontal bones lying just behind the zygoma, had been eroded completely. At the time the scalp was removed, it was very apparent that the bone was completely eroded, that is, when the bone laid bare from the scalp was removed, it was noticed that there was a large fleshy mass which projected above the surface and which when it was touched was found to be quite soft. A section made at this point extended into the cavity of the skull for quite a distance, so that there was a hole through which projected this mass. This mass is connected entirely with the dura. It has not involved the brain substance at all. The tumor, as it grew, compressed the brain, but did not cause the least disturbance in the pia nor in the brain substance below; nor did it involve the motor tracts which are situated in the neighborhood of the fissure of Rolando. On the contrary, its main growth is outward, leading to complete absorption of the bone; and the frontal bone is absent over an area which is rather larger than the palm of the hand. The tumor itself is a sarcoma or endothelioma, starting from the dura. It seemed to me that this was of special interest to the surgeon, from the fact of its long duration without there being any symptoms at all referable to it. Allowance must be made for the fact that the patient was in a condition of chronic dementia; but still she was capable of expressing any sensation of pain which she might have had, and if there had been any involvement of motor centres it would have manifested itself in lack of power of the arms or legs, but there was no history of this. It is of interest also because given a case of this sort and making the diagnosis, they are especially amenable to operation; for the bone being removed, allowing that the tumor had not grown sufficiently to erode the bone at the seat of the tumor, by operation the ease with which such a tumor can be taken out without injuring the brain or pia is apparent, it seems to me, from the specimen. What I did at the time of the autopsy was, in order to preserve the relations as well as possible, to saw off a portion of the skull by making a V. I have taken out in this V-shaped piece the whole of the right half of the skull back nearly to the junction of the parietal and occipital bones on the right side, also a portion of the left frontal bone, and anteriorly to the edge of the orbit. This anterior border of the hole does not show, for the reason that it came down to the eye and to the point where the zygoma originated, and the eye could not, of course, be removed, or that portion of the nasal bone which would give the anterior border of the opening. The patient was sixty-two years old.

I do not consider that this tumor had anything to do with the dementia. Exactly how long she had been demented is not known, but a great many years; and when she first came to Boston this was observed as a small mass, grew gradually, and became worse, but I think there is no question that the dementia existed before the tumor began to grow. There was no symptom that would point to operation except softening and slight elevation on the parts over the outside, and the fact that the eye-ball had protruded somewhat. She had been seen by two of the specialists in nervous diseases in Boston; but they did not wish to express an opinion as to the probable cause of this projection, both of the eye and of the tissues over the forehead on the right side. They thought it possible there might be a tumor, but were unwilling to express an opinion. I do not think her death was dependent on this tumor, but she died from exhaustion, as these patients usually do.

Dr. Joel E. Goldthwait read a paper on

FORCIBLE STRAIGHTENING FOR ANGULAR CONTRACTION OF THE KNEE.[1]

Dr. C. B. Porter: I should like to ask if there is any complaint at all from these patients that the leg is longer, or at least is fully as long as the other, and being stiff is more difficult to swing. I think that has been one of the principal reasons for advocating excision where a joint must be left immobile; that is, a certain amount of shortening is very advantageous to locomotion.

Dr. Goldthwait: I have never heard any of them speak of that. As a matter of fact, in all these cases of tumor albus as the result of the atrophy, while the disease is going on there is shortening. In the present instance the leg was one-half or three-fourths of an inch shorter than the other. I have not measured since the operation.

Dr. Porter: I have in mind a case of my own in which I was fortunate enough to get a perfect recovery from tumor albus, with straight leg and full length, and the young man is in very good condition; but as you see him walk along the street, he goes a little as if he had an artificial leg, because the leg is the same length and he has to raise the body to swing it. In contrasting it with excision, that is done so frequently, I should like to know whether the length of the leg is any impediment.

Dr. Goldthwait: None of the patients have spoken of it. This girl walks perfectly well, and I should say that leg is slightly shorter than the other.

Dr. Porter: I agree with Dr. Goldthwait that the straightening of the leg is much better than an artificial leg; but I am surprised that five or six surgeons can be quoted as recommending amputation of a leg like that in the picture, and not some other operation. I think the excisions of the present day, done as they are where the disease is in a quiescent state, bring so much better results than they used to before the days of antiseptics that one can promise a patient almost always if the disease is perfectly quiet that he will get union of the bones and a good leg, so that I think very few surgeons now would recommend amputation for that form of disease or that disease in that condition, and I should like to ask if in any of the cases there had been any lighting up of the tuberculous process by the inflammation which is started by the operation.

Dr. Goldthwait: Not at all.

Dr. Porter: I think that is one of the very strong things in favor of the operation if it can be done without that.

Dr. Goldthwait: I have watched these cases with great care on account of that and the leg has grown better and better all the time.

Dr. Porter: We dread to start up old tuberculous foci for the fear of getting new trouble, and I think this is a most excellent operation.

Dr. Goldthwait: Even with the more perfect operations in doing excisions in a list of some three hundred cases reported by Dr. Phelps he finds the mortality-rate between nine per cent. and ten per cent, nearly all in young subjects. It would be of course greater in adults.

Dr. E. H. Bradford: When this method of treatment was reported first five years ago, the criticism was made that it was an unsurgical procedure in that it endangered the artery, and it was a mere accident that it had not been followed by sloughing and gangrene, and I confess that when I first put the appliance on I felt myself that there was danger of that, but Dr. Goldthwait has demonstrated by dissection the reason why that result was not to be expected in my case and in the subsequent cases in which it was used. It seems to me that the method is deserving of trial in cases where it is desirable to save the leg or to avoid excision. Of course it is not suitable for cases of active disease where there are tubercular foci, but in the stage as described by Dr. Goldthwait where cicatrization has taken place the method seems to me to be of advantage. Of course, it is not of advantage in bony anchylosis. For a limited class of cases I think it gives excellent results. As a choice between wedge-shaped excision and this, where the anchylosis is fibrous this method is to be preferred. The objection which has just been mentioned that this makes the limb too straight and too long does not seem to me of sufficient value to give preference to excision. The patient as has been shown to-night walks with the appearance of one leg being longer than the other. That is due to the fact that she is wearing what is known as the caliper splint, designed to keep the limb straight when that is removed in a young person the probabilities are that slight flexion at the knee will follow and this will obviate the inconvenience of too straight a limb mentioned by Dr. Porter which, however, can be readily relieved by raising the heel on the well foot and taking off a portion of the heel on the affected foot giving a difference of an inch which is enough ordinarily. In regard to the modification of the appliance which Dr. Goldthwait has shown, it seems to me it is a great improvement, and much more accurate and precise.

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[1] See page 517 of the Journal.

Dr. H. W. Cushing: Another advantage of the Goldthwait apparatus is in its application to very small-sized young patients. The larger apparatus does not fit satisfactorily, but I understand this new apparatus can be adjusted to any sized limb. Dr. Bradford's "genuclast," as far as I have had an opportunityto see and observe it, has given very satisfactory results; and is far superior to the ordinary methods of forcibly correcting contracted knees.

Dr. Porter: I should like to say one word more if I may be allowed, and that is, Dr. Goldthwait has demonstrated that pressure is not going to injure the vessels. I think in some cases the stretching alone of the vessel may produce injury where the anchylosis has been at right angle or more than right angle and existed a long time. I saw Dr. Richardson plan to do possibly an excision of the knee upon a case like this due to contraction from a burn and when all the hamstring muscles had been divided, it was impossible to straighten the leg on account of the tenseness of the vessels and nerves and he did amputation. In such a case stretching of the limb might do harm.

Dr. Bradford: Is Dr. Porter positive that the resistance is due to a contraction of the artery and nerve.

Dr. Porter: They were all dissected out.

Dr. Bradford: I have dissected a few specimens with regard to this difficulty, and I have found a firm obstacle to correction in the contraction of a posterior portion of the capsule that has become shortened by adaptive shortening. It would seem to be an unusual artery or nerve that would give such a firm resistance as is mentioned. How old was the patient?

Dr. Porter: A boy of eleven or twelve. I did not handle the leg.

Dr. Bradford: I have tried a good many and broken them up and dissected a number. After everything has been within the reach of the knife, some resistance remains and in a number of experiments on cadavera and in a certain number of cases, it has appeared to be that the posterior part of the capsule and the posterior capsular segment has become shortened.

Dr. Porter: I do not wish to raise it as a question that would have to be considered in each individual case, but I think some time such an accident would show itself not from bruising, but from stretching.

Dr. H. W. Cushing: It is not necessary to straighten these legs entirely at one operation, and I have seen some very good results obtained by at first partially reducing the deformity and completing the operation afterwards (at one or more sittings); in the same manner that a club-foot is treated. In that way the danger of lacerating the vessels is not so great.

Dr. Porter: I hope that Dr. Goldthwait or any of the Society will not think I am saying anything in opposition. I was only speaking of certain things that might militate against this operation. I most cordially approve the operation, and I think the cases demonstrate it as a valuable addition.

Dr. Abner Post: The first case with which my name was connected showed very conclusively the value of two operations. The ease with which it was done in the second place was very great as compared with the difficulty of reducing in the first place by hand, and it occurred to several individuals who saw it and have spoken of it since that possibly dividing the operation into two stages, reducing it part way the first time and finishing the operation the second was a marked advantage, something that might be followed in cases where there is great difficulty, but it seems to me that the case Dr. Porter alluded to, must come under a different head. But these cases I speak of, first the case in which the operation was done in two steps, was one in which the joint was affected by gonorrhœal rheumatism, a case which has given an unusually favorable result, and I should suppose that that ought to stand in a class by itself as a case in which you would expect better results than in tuberculous joints.

Dr. Goldthwait: I would like to say in connection with the child's gait that of course the splint is longer intentionally than the length of the leg. It is a protection splint that allows her to walk only on the toe of the foot. She walks more awkwardly than if the splint was off.

Dr. C. P. Strong read a paper on

TOTAL EXTIRPATION OF THE UTERUS; IMPROVED METHOD OF TREATING THE STUMP.[2]

Dr. Strong showed two uteri removed by him through an abdominal incision which Dr. Gannett had examined and pronounced to be cancerous. In both the disease extended well up into the broad ligaments. The body of the uterus was affected. In both the disease extended quite a distance down the vaginal wall. One case died; the other made a perfect recovery. One uterus was the seat of multiple and large fibroids, and when it is considered that these have decreased in size about one-fourth by hardening, it will be seen that the difficulties, which would have attended their removal by the ordinary method, would have been insurmountable. The woman who died was so fat that I do not believe one could have reached up to the broad ligaments through the vagina. This case with the uterus enlarged by the fibroids, was the case of a woman past the menopause some time, in whom the vagina had taken on senile atrophy, so that it would have been difficult to bring this uterus down through the vagina.

Dr. E. W. Cushing: This is a very important point on a very important subject I do not understand that Dr. Strong presents this as anything absolutely new, but as a general development of the latest features of this mode of operating. In regard to the Trendelenburg position, I saw that used in Berlin in 1890. This apparatus is a great improvement on the arrangement they then had. With an inverted chair a good deal can be done, if you tie something across the tips of the rear legs. I used one this morning, having a towel tied across there, and lifting the lower part of the chair, that is, the front of the seat. If the patient is not very large, you can get on very well. Of course, a system like this is a great improvement. What is, I think, a better thing is the Cleveland table, better in this respect, that instead of lifting the buttocks of the patient up, the shoulders are let down. To operate properly with this apparatus, especially to get at adhesions, etc., satisfactorily, a man must get up on a box to get at it handily. The Cleveland table, however, turns on a centre, and there is a chance for using irrigation. It is a very pretty system.

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[2] See page 520 of the Journal.

Now, in regard to the use of Trendelenburg's position for this particular operation, I think that what Dr. Strong has said is entitled to the greatest consideration. I do not understand that on principle he would advise opening the abdomen for all cases of hysterectomy. [Dr. Strong: No.] As I said some time ago, in the discussion in Philadelphia, the cases of vaginal hysterectomy are divisible broadly into the easy ones and hard ones; the easy ones where the disease is limited to the cervix, no adhesions, vagina capacious — it is a beautiful and classical thing. A hard vaginal hysterectomy, with adhesions and perhaps tumor complicating it, and the disease extending well in towards the broad ligaments, is a terrible thing — bad for the patient, and bad for the operator as he gets a little older and begins to feel exhausted in a hard case. There is one advantage of this operation which Dr. Strong did not advert to, and that is it enables a man to beat a retreat if he sees it is not a suitable case. I had a case the other day that died of one of these operations, and on examination it was found there were little metastases over the omentum. I have twice had cases where after the patient was under ether, — in one case I opened the abdomen and found metastases in the omentum, and in another case on feeling of the abdomen I found what I considered to be a cancerous lump up in the region of the liver. Now the more we can eliminate these cases where the disease is sure to return the better will be not only the immediate but the ultimate results of hysterectomy for cancer. The cases of recurrences after vaginal hysterectomy that I have seen have almost all occurred in from six weeks to five months, in other words, they were not recurrences at all probably, but I did not get out the whole of the disease. From what Dr. Strong says in regard to its spreading at the side and in adhesions, and possibly, although I did not catch it, he also adverted to the little grafts and metastases that are liable to occur in the omentum or high up at the roof of the broad ligament or even in the liver, I am sure that such undiscovered extensions explain a great many of the cases of recurrence. I have had two cases where I have removed the uterus by what used to be called the combined operation, that is, separating from below in the first place, and I think that is a good way, working by the vagina in the first place, getting the line where you want to make the division, getting clear of the rectum and bladder and up high into each broad ligament, and then opening the abdomen and removing the growth. The same thing has also been done by opening the abdomen and passing up a clamp on each side from the vagina. It is evident that with this position the operation is more clean and thorough than by any system of passing clamps in. The difficult cases of vaginal hysterectomy cannot be done with ligatures: you have to come to clamps and where you have to come to clamps there is always a chance of nipping the intestine. You think you always guard against it by putting the finger-up, etc., but every once in a while some one will tell you in confidence about a case of fæcal fistula he had after operation, or not in confidence as in the cases reported by Dr. Coe at the last meeting of the American Gynecological Society. I had one sometime ago. It came on on the twelfth day while the woman was straining a little. I have no doubt that was from some pinch of the intestine which impaired its vitality so that it finally sloughed out.

The question of the Trendelenburg posture is being agitated in this country. It was taken up in New York, probably under the influence of Krug. Possibly the fact that it has come to be a favorite in New York has led to its not being a favorite in Philadelphia, where the influence of Dr. Price is against it. He is satisfied with his results and he prefers to work without it. To get advantages from it, it requires a long abdominal incision, but what Dr. Strong refers to are the hard cases which could not be removed through a short incision.

As to the use of catgut or silk in the abdomen, it is not particularly germane to this question, but I should differ from Dr. Strong. I think catgut carefully and thoroughly prepared is the ideal material for all sorts of work in the abdomen. It can be made strong enough to do anything that silk will do, and avoids waiting in some cases for the ligature to come away. I had to watch a year once for a ligature. Finally the lady exultingly told me she had got it by putting on a poultice. Since then I have used no silk in the abdominal cavity, and I have had no reason to feel sorry. I prepare by soaking in ether, stretching, baking for two hours at a high degree, preserving in absolute alcohol with ten per cent. of glycerine. It is perfectly simple, safe and strong.

This position is a great advantage in a difficult case. It is almost like catching any one's tongue and pulling it out of the mouth: you can see above and below. I saw Dr. Polk operate the other day in a case of cyst deep down in the broad ligament. He picked up the vessels, packed in gauze. We could see what he was doing, where the adhesions were and where the bleeding came from.

I confess to having received new light on the subject of peritonitis after operation. I have always reproached myself, that if it came on after operation it was probably septic. I did not see what else it could possibly be. I am instructed, I am gratified. It relieves me from morbid feelings about several cases I can recollect. I had a case the other day where, after removal of a large fibroma, the woman had just the beginning of general peritonitis with obstruction of the bowels, and died. I supposed I had got something in that had no business there. If there is a peritonitis after operation that is not septic, I am glad of it.

In regard to closing the abdomen entirely, that is a question to which there are two sides. Olshausen, I think, has had the most influence in favor of closing the abdomen after extirpation of the uterus through the vagina; but his results have not been any better, and I doubt if as good, as where some drainage is used. By doing it in this way, with a chance of actually cleaning everything above, and being sure of every single point, closing of the lower pelvic opening is an excellent thing. It certainly would avoid any chance of sepsis coming on from below. I think however, I should be inclined to use a glass drainage-tube for some hours from above, in any such case.

Dr. J. W. Elliot: I think the Tredelenburg position is one of the great advances in pelvic surgery, almost as valuable as Sim's position. I think if you really must see into the pelvis, it is the only way you can do it, and if you will take out cancer that has gone deep in the broad ligaments I don't see any other way of doing it. Personally, I have been operating all the autumn in this position and have become so attached to it that I hesitate to operate in any other position. I make a very small opening as I always have and I can work through it very easily, three or four inches. I have done two hysterectomies for small fibroids, in an opening not over four inches in length and had a superb view of the stump. I have not seen the intestines which have fallen away. The position reminds me of Sim's in that when you open the abdomen, tip the patient up, put a speculum like Sim's in the incision near the bladder, the air sucks in and your pelvis is made empty immediately. I have used that apparatus of Ford's. I do not like it any better than a board with swings and hinges. I am sure the position is going to be used more and more by everybody who wants to look into the pelvis for every sort of operation, it is such an enormous advantage. Of course there are a great many operations that we have always done without seeing in the pelvis, digging out of the tubes, often with a good deal of bleeding, great deal of tearing, and we have done them successfully without this; but I happened to have a case about a month ago where both tubes filled the pelvis and were universally adherent. Of course when I opened the abdomen the position did not work at all, that is, there was no slipping away of the intestines because they were adherent, but as I peeled them off the bladder and broad ligaments, and dissected out the tubes, it all sucked away and left the pelvis empty. In this case it was interesting to do an operation I had so often done with my eyes shut, so to speak, right out before my eyes, to peel the tubes off the rectum and tie in the bottom of the pelvis, and close it up tight without a drainage-tube. This is precisely the sort of case I should have formerly put a drainage-tube in, which would have required a longer time and more anxiety. Although it is not necessary in all these cases it is a great advantage, I think, to see what you are doing. It is like the difference between working with your finger in the bladder and with an electric light. Lots of operations have been done with the finger, but are done now more scientifically where you can look in.

I think that Dr. Strong deserves credit for his movement in this direction. I am sure it is a very valuable addition to pelvic surgery and will be more and more used.

Dr. Burt: I have not anything special to add, except that all of us who have been into the abdominal cavity in the regular position have time and again found conditions which were very difficult to treat. We have found adhesions many times which were very difficult to do anything with, because you have to work almost wholly by feeling; and I have known of cases of that kind in which without the greatest care the intestines would have been opened and fæcal fistulæ result. That would hardly be the case when the operation is conducted in this position. Then it is very evident that we can catch points of bleeding a great deal more satisfactorily than by the other method. In the easy cases it does not make much difference whether you operate in one position or the other, but in all the difficult cases I should feel like recommending this particular position.

Dr. Burt related a case in which both ovaries had been removed with the uterus. The patient is still flowing regularly.

Dr. Strong: With regard to this operation possibly superceding hysterectomy, I have not made up my mind yet. I do not see why it might not. Of course, a case seems very simple with a cancer at the tip of the cervix, but we never can feel quite sure just how things are above there; and I don't see that we add particularly to the danger of the patient by a nice, clean abdominal incision; and I do think we have matters so under our eye literally and so under our hand, we can make such an absolutely complete toilet of the peritoneum, and do away with all question of drainage and the infection that drainage may cause, that I think I shall operate as a routine method by the Warner method rather than by vaginal hysterectomy.

With regard to separating from below first, I don't see any particular advantage to be gained. If you do it yourself, you must stop after you have separated from below, take time and disinfect yourself again, and go on with the abdominal part of the work. If you trust the separation to somebody else, it is not your operation, it is a sort of combined affair. I see no advantage gained. You can get every bleeding vessel just as well, and be just as sure you are below the limit of the disease. If you have any question, you can have an assistant put his finger in the vagina and feel the limit of the disease.

With regard to the question of peritonitis to which Dr. Cushing alludes, I accepted Dr. Whitney's report. He said it was not a case of septic peritonitis, no evidence of sepsis, at least. The patient had peritonitis in the chronic form at the time of operation, and a certain amount of general sub-acute peritonitis, such as we find in cases of malignant disease. There was a tremendous amount of violence done in the operation. It was one of the worst cases of digging out I have ever encountered.

With regard to the length of the incision, the full benefit of the position can only be obtained through a full abdominal incision.

With regard to going out into the broad ligament, if you have the abdomen open and find a mass in that broad ligament, you don't know absolutely that that is cancer; and if you can get at it, I don't see why not do it. If you do it by this method, you can get that piece out entirely; and if you can do that, your operation is just as justifiable as to take out a cancer of the breast where you find a gland somewhere near it affected.

Another thing: you do a good deal of good to the patient, even if she is generally infected. The first case I did in March, 1892. I had to take out the whole right broad ligament to the junction. You could have curretted her, but the disease would have gone on. Now she is well, and enjoys life as much as anybody can.

Dr. Paul Thorndike made some

REMARKS ON NEPHRO-LITHOTOMY, WITH REPORT OF A CASE.[3]

Dr. F. S. Watson: I saw this patient just before leaving town last summer, and he was then in such an enfeebled condition that Dr. Thorndike has more than usual reason to be congratulated upon the outcome of his operation. The hour is so late that I will only refer to one point in connection with the diagnosis of renal calculus, which I have pointed out several times before, and that is, that sometimes the only symptom of stone in the kidney is an irritable bladder. The true cause of this symptom is often overlooked. The urine may be absolutely normal in these cases for considerable periods of time.

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[3] See page 532 of the Journal.

Dr. H. W. Cushing: What was the direction of the incision into the kidney?

Dr. Thorndike: As the kidney was drawn up into the wound, my finger could feel an induration in the posterior wall of the pelvis of the kidney. I cut down upon this hard mass, making an incision almost vertically on the back of the pelvis of the organ.

Dr. Watson showed two cases in which he operated for

EXTENSIVE ACUTE ADENITIS AND CELLULITIS OF THE AXILLA,

by excision of the inflamed tissue. I would like to call your attention to a somewhat rare form of suppuration, and to the method of treatment which was employed in some cases which were examples of it, at the City Hospital last spring. These two patients show the ultimate results in two of a series of seven cases. Last spring there came into my wards seven cases of acute axillary inflammation, involving both the glands and cellular tissue, and extending in several cases down the side — in one case as low as the seventh rib — upward to the clavicle, backward to the scapula, and forward along the upper arm. This condition originated in the glands and connective tissue of the axilla, primarily, and did not extend upward from below except in one case from a poisoned wound of the hand. The patients were all seriously ill. In one or two there was some doubt as to their living. The method of operation I adopted was to turn back a large flap from the axilla and expose its contents freely, and then to dissect out all the tissue which was inflamed, as far as it could be reached, and curette what could not be dissected out cleanly. As far as I know this is not a usual practice. The operations involved an extensive removal of tissue. I was interested to know the ultimate result. The question of subsequent ability to raise the arm came into consideration. These were two patients, both very ill at the time of operation, now five or six months ago. The line of the incision is shown here in the cicatrix, and the flap that was laid back. Every case did well. The wounds united well. One or more drainage-tubes were inserted for a time and counter-openings made. The patients made excellent recoveries without exception. For that reason, and the fact that there is no disability in these cases, I thought they were worth showing. The longest time that any of them were in the hospital was, in one case, seven weeks; in all the others, from three to five weeks.

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Recent Literature.

A Manual of Chemistry, Inorganic and Organic. With an Introduction to the Study of Chemistry. By Arthur P. Luff, M.D., B.Sc. (Lond.), M.R.C.P. Illustrated with 36 engravings. Philadelphia: Lea Brothers & Co. 1892.

This book has been written especially for the use of students of medicine. It is better than the average of books of its class, but does not possess any features that call for especial commendation, or extended notice.

Elements of Materia Medica and Therapeutics. Including the Whole of the Remedies of the British Pharmacopœia of 1885 and its Appendix of 1890. By C. E. Armand Semple, B.A., M.B., (Cantab.), M.R.C.P. (London). With 440 illustrations. London and New York: Longmans, Green & Co. 1892.

This work is divided into two general classes, — inorganic and organic substances. In the former the arrangement has a chemical basis, in the latter a botanical one, except, of course, in the organic substances derived from the Animal Kingdom. The book is elementary in character, attempts too much in a small space, and considers questions relating to industrial chemistry to an extent out of proportion to the size of the volume. On the contrary, what is given under therapeutics is usually too meagre to be of much service. The author assists the memory of the student by the introduction of numerous illustrations, especially those relating to the sources and manufacture of such substances as hydrochloric acid, animal charcoal and ferrocyanide of potassium. In some cases, however, the illustrations are somewhat juvenile.

The Extra Pharmacopœia. By William Martindale, F.S.C. Medical References, etc. Seventh Edition. London: H. K. Lewis. 1892.

This small book gives a brief outline of the sources, preparations and uses of the remedies employed in medicine, including especially the more recent compounds. Under therapeutics a number of references are frequently given which would enable the physician to gain further information if he so desired. Among the test-solutions described are some of those used in testing urine for sugar and albumen, and the diazo-test. The book closes with an index and posological table. It is not adapted to the United States Pharmacopœia, and there are other pocket works published in this country that would be of equal service.

A Text-Book of Nursing. By Clara Weeks Shaw. Second edition, revised and enlarged. With illustrations. New York: D. Appleton & Co. 1892.

All that it is necessary to say is that this is a second edition of a standard text-book noticed with commendation in this Journal about six years ago.

The work has been carefully revised, and considerable new matter added to keep it abreast of the advances in medical and surgical knowledge since the first edition was published in 1885.

Essentials of Medical Physics. Medica Physics. By Fred. J. Brockway, M.D. Philadelphia: W. B. Saunders. pp. 330. 1892.

This little volume belongs to the series of Saunders' Question Compends, especially designed for students of medicine. It is illustrated by numerous cuts and gives the main facts of medical physics in plain language. While admirably adapted to help medical students who are preparing for their matriculation examinations, it might be consulted with profit by older practitioners who are likely to forget much of this elementary knowledge.

Nearly one hundred pages are devoted to electricity, electro-dynamics, electrical machines, etc.; this part is especially comprehensive and practical.

Virchow has been elected an honorary member of the Imperial Russian Natural Philosophy Society.

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EXPERIMENTAL TERATOGENY.

In a recent issue of the *Bulletin de la Société d'Anthropologie de Paris* is published the eighth Broca lecture, by M. Camille Dareste, on the production of monsters by direct experimentation.

Such matters have often been discussed by this Society in eloquent and instructive addresses, and ideas stated which might be considered premature, did we not remember that it is a peculiarity of the human mind to supply by hypothesis the links undiscovered by practical science.

Geoffrey Saint-Hilaire made partial experiments (1820–26) in this direction, which were imperfect, owing to deficient appliances. The first rather full work in this subject was that of Baer, published in 1828. The latest treatise on Human Monstrosities is the handsome work by Hirst Piersol of Philadelphia, 1891.

Monstrosities have been looked upon as extra-natural; but when studied by scientific methods they appear merely as diseases of the embryo. These anomalies of organization, as seen by ordinary observation, are, in nature, comparatively rare, and their origin little, if at all, understood or susceptible of investigation. By experimentation, however, we are brought face to face with the actual causes of these variations, and can produce artificially all that has been or may be brought about without the intervention of man. The field for this work is unlimited — all the domain of the possible. Observation and experiment may supplement each other.

A first step is to change the direction of evolution of the fecundated germ. This direction results from the combination of two elements: (1) The initial constitution of the germ, with all the hereditary tendencies coming from its progenitors; (2) the influence of the external world (environment) that incites the evolution of the germ and brings about the formation of the embryo. Artificial incubation, used in very ancient times, may be cited as illustrative of physical conditions.

After countless trials, say M. Dareste, direct observation of facts has resulted in a knowledge of circumstances controlling both the abnormal and the natural evolution of the chick.[1]

In the course of this study, he produced thousands of monsters, which were examined at various stages of embryonic development. Most of these types are related to teratologic forms already described in mammifers, including man — all being vertebrates.

As in normal, so in teratologic evolution, the initial step must be sought during the first period of fœtal life. An arrest of development of the embryon or annexes is the cause of most simple monstrosities. The union of juxtaposed parts plays a much less important rôle in production of such deformity, and is always consecutive to arrest of development.

From among his many experiments resulting in types of abnormal forms, are presented the particulars of the most remarkable products — as spina bifida, cyclopia exencephalia, ectromelia and symelia. Spina bifida is due, not (as has been supposed) to distension from dropsy, but to incomplete development in prenatal stages; which Dr. Dareste has observed several times in the chick, and once in the human. In cyclopia, the normal separation of the retinal tract of the blastodermic layer does not take place, resulting in a single eye, or a form presenting, in greater or less number, the elements of two eyes. This condition is connected with imperfect evolution of the brain; with it a solitary olfactory cavity also often exists. Exencephalia, ectromelia and symelia are found to be due to pressure from undeveloped amnion upon various portions of the enclosed structures: to the same origin, are attributed congenital deformities of the extremities, as club-foot. Two distinct hearts — normal condition — were observed in some cases; in others, but one, evidently resulting from union of two cardiac analogues. This primitive duality, discovered by him in 1868, has since appeared in a mammifer, (the rabbit), and in several species of fish. One form, not belonging to any known type, often seen, was umbilical hernia of the head — *omphalocephalia.*

Dareste states that he has a unique collection of such forms, examples of thousands of beings which he has brought forth from the possible world to introduce them to the actual.

By such methods, he maintains, of studying the variability of animal organization, we shall be able to unite the elements necessary for the elucidation of the grand problems of anthropology, chief among which is: the origin of diverse forms presented by the human family — the foundation stone of biology.

Darwin wrote eighteen years ago. "The experiments of Camille Dareste are full of promise for the future."

Emigration. — On account of the regulation imposing quarantine upon emigrants, the Guion line has taken off its vessels for the present.

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[1] The details of *modus operandi* — different temperatures, partial heating, shaking, varnishing shell, etc.,— are published in *Recherches sur la Production Artificiale des Monstruosities ou Essaies de Teratogenie Experimentale.*

THE BRAIN CENTRES OF THE EMOTIONS: ARE THERE SUCH CENTRES?

According to Spencer and Bain, those physical states which we class as feelings are inseparable from those which we class as intellectual processes. Feeling, thought, and volition constitute a "trinity in unity"; they are characteristic in their several manifestations, yet so dependent among themselves that no one could subsist alone; neither will nor intellect could be present in the absence of feeling, and feeling manifested in its completeness carries with it the germ of the two others (Bain). Feeling, according to Spencer, is the primordial unit of mind, and emotions are highly complex aggregates of simple feelings.

Dr. S. V. Clevenger, in the *American Naturalist* for November, 1892, accepts and reinforces this view. The emotions have vaguely been regarded as having several centres, or a single centre. Often in physiological writings we encounter the term "emotional centre," and reasons more or less incorrect have been advanced locating this "emotional centre" at the base of the brain.

Emotionalism, Dr. Clevenger says, in a broad sense is nothing more nor less than degrees of excitement. So from this standpoint it is a condition, an exaltation or depression of the nerve-centres; and hence it would be absurd to look for its centres. Joy, grief, anger, fear, jealousy, are all conditions which may engage every cell in the body at times. The fact that there may be crying and laughing centres in the medulla does not constitute that portion an emotional centre any more than we are justified in calling the leg centres in the brain-cortex, kicking centres. The laugh and cry may be purely automatic, and without reference to the emotions at all. Besides, some emotional exhibitions, such as tremblings and pallor, indicate that during emotional excitement nerve force is pretty well diffused throughout the body, and that no particular set of nerves is engaged. It would seem that in such instances there is excellent evidence of the absence of an emotional centre, and the shaken-up general nervous system can find no special outlet for the feeling.

When a rupture of a blood-vessel in the motor centres of the brain causes paralysis, and in cerebral degenerative states, such as are induced by alcoholism and senility, there is an increase of emotionalism. The patient may cry and laugh easily; but in such instances the higher control is lost, impressions are diverted from former channels in the brain to the more automatic ones lower down, but the emotionalism is the product of brain injury and is a debased condition, and hence has no centre in the brain. The fact that the brain-base at its junction with the spinal cord has laughing and crying reflex centres may warrant this area being named an emotional centre in a very limited sense; but, strictly speaking, there can be no such thing as a centre for the emotions, for laughing and crying are but two among a great number of emotional exhibitions, and they may recur unconsciously.

LESIONS OF ORGANS AND TISSUES IN CHLOROSIS.

Dr. Charles Luzet, in his recent able treatise on chlorosis,[1] discusses the subject of the pathological anatomy of this disease, and arrives at the conclusion that "the pathological lesions of chlorosis may be limited to troubles of hæmatopoiesis, in relation with modifications of nutrition alone, no known anatomical lesion of any organ as yet explaining these modifications." In numerous cases, however, morbid changes in organs are found. There is, for instance, the chlorotic aorta, characterized by want of development, tenuity and smallness of that blood-vessel; there are histological alterations, dystrophies, fatty and sclerous degenerations of the aorta and other blood-vessels (*aplasie arterielle*); there is the over-small heart and the hypertrophied heart; there is the fatty liver, the ulcerated stomach, the fatty, flabby, and pigmented muscles; occasionally a "fœtal state" of the spleen, marrow, and other hæmatopoietic organs.

Lancereaux and Bezançon have established the existence of a special nephritis with chronic course, linked to the "arterial aplasia." This nephritis is anatomically characterized by a sclerosis starting in the arteries of the kidney, and producing atrophy of the secreting elements and particularly of the glomeruli. In many cases there is atrophy (infantile state) of the genital organs, hence absence of menstruation in the female. But these facts are not common, for Virchow declares that chlorosis, which he regards as inseparably connected with vascular hypoplasia, is not accompanied with or dependent on any constant morbid alteration of the sexual organs. According to his careful observations, from this point of view there are three kinds of chlorosis:

(*a*) Chlorosis with vascular hypoplasia, without notable change in the sexual organs.

(*b*) Chlorosis with vascular hypoplasia and excessive development of the genital apparatus.

(*c*) Chlorosis with vascular hypoplasia and want of development of the sexual organs.

Luzet gives reasons for his belief that the lesions above mentioned are none of them essential or primary, but rather the consequences of a fundamental want of development. The aplasia or hypoplasia of which so much has been said "can be regarded only as the signature of a disease of the germ." The same may be said of the "infantile state" of the genitals. The ovarian hypertrophy, associated with menorrhagic chlorosis is too rare an occurrence to be considered as any thing but a simple coincidence. The cardiac hypertrophy is only a secondary lesion, consecutive to stenosis of the aorta, renal aplasia, etc. Lastly, the degenerative lesions of the organs and tissues are dependent on the faulty blood-formation; but these are not peculiar to chlorosis. The essence of the disease is "defective hæmogenesis; in consequence of which the red blood corpuscles are abnormally vulnerable," and perish faster than they can be regenerated.

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[1] *La Chlorose*, Paris, Rueff & Cie, 1892.

It is worthy of note that Schücking in a recent article in a German medical journal favors this view defended by Luzet, that the condition of the vessels and tissues is secondary to and dependent on that of the blood; while Kahane, Schubert and Scholz believe with Virchow that the true nature of the disease is one of hypoplasia of the vessels.

MEDICAL NOTES.

The Late Epidemic of Cholera in Germany. — The health-office report from Berlin states that there have been in Germany this year 19,647 cases of cholera of which 8576 have been fatal. There appears to be a discrepancy in the reports, since the official reports from Hamburg show that there have been 23,000 cases and 11,000 deaths from the disease in that city alone.

The American Public Health Association. — The twentieth annual session of the Association was opened in the city of Mexico on Tuesday, and is still in session. Many of the members arrived on Monday and were escorted to their quarters accompanied by bands of music. Later, they visited many of the public institutions and expressed themselves as highly pleased. Our special correspondent will before long inform our readers of everything of interest occurring during the session.

Milk in Chicago. — A recent inquiry concerning the condition of the milk-supply in Chicago has called the attention of the papers of the city to the great need of municipal legislation for the protection of the milk-supply, and it is probable that some ordinance will soon be passed. Most large cities already restrict the milk-supply, and impose penalties for milk which does not come up to a certain standard; a far smaller number take any means at all to prevent the use of milk from tuberculous cows. The State of New York attempts to prevent the distribution of milk from dangerous herds; but as a large part of the milk-supply comes from other States, the danger is only partially avoided.

The Samuel D. Gross Prize. — This prize is to be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens. The successful competitor must publish his essay in book form and deposit one copy in the S. D. Gross Library of the Philadelphia Academy of Surgery. The first quinquennial prize of one thousand dollars will be awarded in 1893. They must be written in the English language, and sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before June 1st. Each essay must bear a motto, and be accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. The envelope of the successful competitor only will be opened, and the unsuccessful essays will be returned if reclaimed. No award will be made unless one is considered worthy. These prizes are given under the will of the late Dr. Gross.

BOSTON AND NEW ENGLAND.

The New Building for the Harvard Dental School. — A meeting of persons interested in the erection of a new building for the Dental School of Harvard University was held in Horticultural Hall yesterday, November 30th. President Eliot presided, and addresses were made by Bishop Brooks, Rev. A. McKenzie, Dr. H. P. Bowditch of the Medical School, and others. Much interest was manifested by those in attendance, who were numerous notwithstanding the stormy weather. One gentleman condoned his absence by a subscription of one thousand dollars.

The Water-Supply of Boston. — In a special report to the Mayor, the Boston Water Board, in view of the present interest in sanitary matters, describes the water-supply of the city. Boston, except Charlestown, is supplied with water from Lake Cochituate and the Sudbury River. Charlestown is supplied from Mystic lake. Apart from the Mystic, the water supplied to the city is a mixture of the two principal sources of supply, the Sudbury and Cochituate, which are brought by separate aqueducts to the Chestnut Hill and Brookline Reservoirs respectively, and there mingled before being distributed into the pipe system. All the analyses and examinations made in recent years show that the water is naturally excellent in quality, that it maintains this high standard. In the construction of its large water basins the city, has, at the expense of hundreds of thousands of dollars, removed all the top soil from the valleys which have been dammed for storage purposes. The aqueducts are thoroughly brushed out twice a year to prevent growths upon their walls, and a biological laboratory has been established at Chestnut Hill Reservoir, in which the most careful studies are made and recorded every week of the condition of the water in all the basins and reservoirs forming the sources of supply. In addition to the investigation made under the direct control of the Board chemical analyses are carried on by Thomas M. Drown, M.D., under the direction of the State Board of Health. Also for many years Edward S. Wood, M.D., of the Harvard Medical School has made quarterly chemical analyses of all sources of supply. The Board believe that the quality of the water of the city is excellent, and that it may be safely used by everybody. On the other hand, regarding the Mystic supplied to the people of Charlestown, the Board has already expressed the opinion that it is not satisfactory as a permanent source of supply. Charlestown, however, has been piped for the introduction of Cochituate and Sudbury water, which could be turned on at an hour's notice in case of an unfavorable change in the state of the Mystic supply. Some statistics having recently appeared in a Boston newspaper comparing the present death-rate of Boston with the death-rate of England forty years ago, statistics taken from official sources are given: 1852 — England, 22 per 1000; Massachusetts, 17.6 per 1000. 1890 — England, 19.5 per 1000;

Massachusetts, 19.4 per 1000. 1852 — London, 22 per 1000; Boston, 25.5 per 1000. 1891 — London, 21.4 per 1000; Boston, 22.9 per 1000. As the city of Boston has shown a marked improvement in its death-rate in the period quoted, and as a more minute study of death-rate statistics will prove that in those diseases commonly attributed to impure water-supply — such as typhoid fever and cholera infantum — Boston stands well in the list of cities, any attack on the purity of the water-supply, based on death-rate statistics, is not supported by the facts in the case.

The New Building at Austin Farm. — The new dormitory for the insane at Austin Farm in Boston, was dedicated and formally opened last week, under the direction of Drs. T. W. Fisher and E. B. Lane. The building will accommodate at least 100 patients, and is the first of a series to accommodate about 400. The walls are of a three-inch plank, plastered on the outside and the inside, making the wood practically fireproof. The situation of the building is good.

Adulteration of Milk in Massachusetts.— The ratio of samples of suspicious milk found to be adulterated as a result of the examinations by the Massachusetts Board of Health in the month of October, was 47.6 per cent. One of the complaints entered by the Board during this month on account of milk adulteration, that of John Casey, a dairyman of Worcester County, was the worst of the kind which has ever come under its observation. Twelve samples of milk were taken from Casey's wagon, at Charlton Station, from as many full cans, with the following result: Total solids, 6.53, 6.32, 5.49, 4.72, 7.69, 5.41, 12.94, 8.92, 6.97, 7.30, 6.30, 11.22. Average of total solids, 7.48. The average composition of this lot of milk proved that nearly fifty per cent. of its volume was added water, and in some of the cans as high as sixty-five per cent. Casey was convicted and fined!

Dartmouth Medical College. — The graduation exercises of the class of 1892 in the Dartmouth Medical College took place last week. Twenty-eight candidates received the degree of M.D., of whom eight were from New Hampshire and fifteen from other New England States. The next recitation term will begin on January 3d.

NEW YORK.

The New York Post-Graduate School and Hospital. — The corner-stone of the new building, at the corner of Second Avenue and Twentieth Street was laid yesterday. An interesting address was delivered by Prof. T. Gaillard Thomas, M.D., and the exercises were conducted by the Rev. M. R. Vincent, D.D., and the Rev. H. Y. Satterlee, D.D.

The New York Orthopedic Hospital. — On the evening of November 22d, the trustees of the Orthopedic Dispensary and Hospital gave a reception to the medical profession and the trustees of similar institutions, in honor of the completion of their new buildings in East 59th Street. The hospital as reconstructed, is a handsome brick structure five stories in height, and having a double basement. The first floor is devoted to the dispensary department. On the second floor are the children's dining-room, apartments for the house-surgeon and matron, and, in the rear a large "sun-room," where the children will take their recreation. On the third floor are two wards for boys, and on the fourth, two wards for girls, with nurses' rooms on each; while on the fifth floor are additional rooms for nurses and servants. On the roof has been built an isolating ward, and this can be entirely separated from the remainder of the hospital by means of an outside entrance and stairway. The double basement is devoted to the mechanical department. Six skilled workmen are employed, and every surgical appliance used in the institution is manufactured there. There are in all fifty-two beds in the hospital, and forty-three of these are now occupied. Dr. Newton M. Shaffer has been the attending surgeon in charge since 1869, and the success of the institution, which was for many years merely a dispensary, is largely due to his efforts. Besides the house-surgeon there is an out-door visiting surgeon for the dispensary patients.

A Case of Small-Pox in the Post-Office.— A colored man employed in the newspaper distributing department of the general post-office having developed malignant small-pox, Post-Master Van Cott at once ordered that every one connected with the post-office should be vaccinated, and, accordingly, all the clerks and other employees, amounting to nearly a thousand, have been vaccinated by the physicians of the Bureau of Contagious Diseases of the Health Department.

THE S. D. GROSS PROFESSORSHIP OF PATHOLOGICAL ANATOMY.

The Committee appointed by the General Committee to audit the account of Dr. Richard J. Dunglison, treasurer of the S. D. Gross Professorship Fund of the Alumni Association of the Jefferson Medical College, respectfully report that after an examination of such account they find that there were sixty contributors to the Fund, the total amount contributed being $3,499.10. In accordance with a resolution of the General Committee these contributions have all been returned to the donors, and the treasurer has presented a voucher for each amount thus refunded. A great portion of the whole amount has been retained undistributed until recently, so that the interest on the amount might so accumulate as to enable the Committee to refund to each subscriber the full amount of his contribution, without any deduction for expenses of publication of circulars, postage, etc., which were necessarily heavy, from the widespread diffusion given the objects of the Fund.

The names and addresses of the subscribers and the amounts contributed by them, are as follows:

Dr. S. W. Gross, Philadelphia, Pa.	$1000.00
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Dr. J. B. Ferguson, Fort Lisseton, Dak.	20.00
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Persifor Frazer, Philadelphia, Pa.	20.00
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Dr. B. A. Watson, Jersey City, N. J.	20.00
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Dr. R. C. Hays, Shippensburg, Pa.	1.00
Dr. I. C. Brown, Columbus Junction, Ia.	1.00
	$3,499.10

J. Ewing Mears, M.D.,
William B. Atkinson, M.D., } *Auditing Committee.*

Philadelphia, October, 1892.

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OBITUARY.—FRANKLIN HENRY HOOPER, M.D.

Dr. Hooper, whose death occurred on November 22d, was the son of the late Robert C. Hooper, and was born in Dorchester, September 19, 1850. On leaving school he was taken to Europe, owing to illness in his family, and finished his education in Switzerland and Germany. He returned to this country in 1870, and began his medical education at the Harvard Medical School, in 1872. Dr. Hooper completed his medical study in 1876, and went immediately to Europe, where he spent several years in medical centres, especially in Paris and Vienna. In Vienna he devoted himself assiduously to the throat clinics, especially to Schroetter's, and while there made many valuable preparations of the cartilages, muscles and ligaments of the larynx, which were used afterwards in his courses for students and graduates. On his return to Boston, in 1880, he was appointed at once assistant in the Out-patient Department for Diseases of the Throat, at the Massachusetts General Hospital. Although he started with the determination to devote himself in private practice exclusively to diseases of the throat and nose, he accepted, for a year, the position of district physician of the Boston Dispensary, at the North End, in order to familiarize himself with general diseases, an example which it would benefit all specialists to follow. Recognizing the close association of affections of the ear and nose, he made a special study of aural disease at the Massachusetts Eye and Ear Infirmary, and was afterwards appointed aurist at the Boston Dispensary. A similar position was offered him at the Massachusetts General Hospital, which he declined, in order to accept an appointment as physician to out-patients with diseases of the throat, at the Boston City Hospital. Here he held the summer service for a number of years, doing excellent work, and giving valuable counsel in the arrangement of the throat clinic in the new building. He finally resigned this service on account of increasing private practice, and perhaps consciousness of failing strength. He, however, continued his connection with the winter service, at the Massachusetts General Hospital, as assistant, and afterwards as physician, till the end of his life.

In 1883, he began his experimental work at the Physiological Laboratory of the Harvard Medical School, which resulted in the publication of well-known papers on "Experimental Researches on the Tension of the Vocal Bands," "The Respiratory Function of the Human Larynx," "Concerning the Position of Paralyzed Vocal Bands," "The Anatomy and Physiology of the Recurrent Laryngeal Nerves," and the "Effects of Varying Rates of Stimulation on the Action of the Recurrent Laryngeal Nerves," which may be found in the "Transactions" of the American Laryngological Association, to which body he was elected a Fellow at its meeting in Boston, in 1882. These communications gave him a high rank in the profession as a scientific worker.

His reputation in the community, and the large practice which came to him before his death, were due, in addition to his recognized excellence as diagnostician and practitioner, in great measure, to his adoption of general anæsthesia in the removal of adenoid vegetations from the vault of the pharynx. This method had been used and recommended by various individual practitioners in Europe, but had not been adopted as a safe and usual method of practice. There was a dread of fatal spasm in doing such a bloody operation directly over the larynx. Dr. Hooper satisfied himself that the blood would be swallowed, and that the operation, if properly done, was perfectly safe, and so opened an immense field for practice. Incidentally this led to the more frequent use of the finger in the diagnosis of cases of mouth-breathing in young children, and instead of large adenoid hypertrophy in the upper pharynx being rare, as supposed by him before, it was found to be exceedingly common. The effect of its removal from scores of mouth-breathing children was so striking, not only in the improvement of the voice and of the appearance of the child, but in many cases in the restoration of hearing, and great improvement of general health, that Dr. Hooper was rightly looked upon as a public benefactor. Later Dr. Hooper successfully performed laryngoscopic operations for the removal of growths from the larynges of children under general anæsthesia.

Dr. Hooper, for several years, had been professor of laryngology at the Dartmouth Medical College, and instructor in the same branch at the Harvard School. At the former he gave a short course of lectures in the summer season, and at the latter his excellent clinical courses for graduates are to be especially mentioned. To see him do his work was an education to many men; he showed such rare care and neatness, not only in the operation, but in the preparation of instruments, specimens, drawings, etc., which were used in his courses. Dr. Hooper was a member of the various local medical societies, and one of the founders of the American Climatological Association, from which, however, he resigned, after a few years' membership, on the ground that he did not care to belong to an association to which he was not likely to contribute.

In his frequent visits to Europe he became personally well-known to most of the leading laryngologists, and took part in the section for laryngology at two International Congresses, at Copenhagen in 1884, and at Berlin in

1890. At the latter he demonstrated his method of experimental work on the larynx of the dog.

Such is the record of Dr. Hooper's professional career. Although a comparatively brief one, it had enabled him to make rapid progress, and he had already been for several years in the full tide of success as a practitioner, and his reputation as a surgeon in his specialty had extended far beyond the limits of his own city.

The disease to which he finally succumbed had already cast its shadow across his path in the early years of his professional life, but the anxiety which this must necessarily have caused him did not seem to dampen in any way his ardor for his profession. As early as 1884, his tongue, which had given him considerable discomfort from small ulcerations during his youth, became the seat of several well-marked leucomatous patches, which slowly but steadily increased in size. These were followed by several small epithelial growths, which made their appearance in the autumn of 1891. The removal of a portion of the tongue checked the progress of the disease at this point; but, after a summer spent in apparent health and comfort in Europe, the disease made its appearance in the glands of the neck and grew with great rapidity. His illness, which he bore with great fortitude and without a word of complaint, was, fortunately, unattended by distressing complications, and the end was comparatively a peaceful one.

Dr. Hooper was a man of a modest and unassuming disposition, and had little to say about his successes as a practitioner, and the honors which came to him were not of his own seeking. His skill was none the less appreciated by those who benefited by it. His tact in dealing with children was of much value to him in the special line of work in which he had made his reputation.

It may be proper to add here that Dr. Hooper was a man of most refined tastes, as one could readily see who had once had the privilege of being his guest, and that his social qualities were such as to bring him a host of friends.

But his sterling character was never more apparent than when he was obliged to face the stern realities of a disease which cut him short in the prime of life. It can with justice be said that he occupied a place, even in the crowded ranks of our profession, which cannot easily be filled. He was one of those men who has given to the profession of this city a certain flavor of which Boston has always justly been proud.

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Correspondence.

LETTER FROM HEIDELBERG.

[From our Special Correspondent.]

Heidelberg, November 7, 1892.

Mr. Editor: — It is possible that some of your readers who are more or less familiar with the larger medical centres of Europe, and the methods of teaching which there prevail, may be interested to know something of medical study outside of these larger places. I am surprised in looking over the *Universitäts Kalender* for the current year, to find that Munich is credited with 1,443 students of medicine, almost as large a number as Berlin, and far more than any other German university. Leipzig comes next, with 834, and Wurtzburg follows closely, with 743. The total number of students of medicine in all the German universities is about 8,800, of which, evidently, a large majority receive their chief medical training in the smaller university towns. These towns, in many cases, appear necessarily to have limited clinical material, but their hospitals must draw upon a wide surrounding country. A few weeks' stay in Heidelberg has shown me something of the clinical resources of a town of only about 30,000 inhabitants.

The hospitals of Heidelberg are all grouped together in the western end of the town, and are admirably appointed and extensive buildings. The great medical teacher, of course, is Professor Erb. He has a daily clinic of one and a half to two hours, which on Wednesdays is devoted to nervous diseases. Besides this he has, four times a week, a course on the special pathology and therapeutics of the nervous system. He is a man of a little over fifty, and of impressive appearance. He talks very rapidly, but differentiates so clearly the points he makes, that what he says is easy to follow and to remember. He adheres always to the custom of having a student ostensibly conduct the examinations of the patient, though the student often resembles the rest of the audience in every respect, except that he remains standing through the hour, while they sit.

Another interesting personality at Heidelberg, and a man of charming courtesy, is Vierordt. His manner of speech is very animated, and he contrives in his polyclinic to introduce a very wide range of cases, including cases from the Luisen Anstalt, the children's hospital of the place. Vierordt is but thirty-six years of age, yet his book on medical diagnosis, which first appeared four years ago, has already reached its third edition, while the American translation has attained a second edition.

The surgical department is under the guidance of Czerny, who is a brilliant operator and a good lecturer. In no department of medical science do the old and new world approach the similarity, in fact the absolute identity of treatment that prevails in surgery. In philosophy, jurisprudence and in other branches of science, the attitude of the two continents is somewhat diverse. The followers of almost any profession, including general medicine, who have been used to practice in one part of the world, would find themselves not quite *au fait* in the surroundings of another hemisphere. But the surgeon can turn from the operating-table in Europe to the table in America, and lay his hand on precisely the same accessories of his calling.

The colored caps of the corps-students, so frequently seen in Heidelberg streets, do not appear in the medical clinics, though the other "outward and visible" and more prominent sign of the corps-student's life is common enough, to wit, the sabre-scarred cheeks. By the way, modern surgery has laid its hand on the students' duel, which the German government cannot with all its endeavor reach, and the swords of the contestants, it is said, are rendered aseptic, *secundum artem* before each duel. To be sure, the minimizing of face scars is not held as so great a desideratum among German students as among the general public. And yet the surgeon who repairs the wounds made by the almost daily duels has no sinecure, and he holds a warm place in the students' hearts. On All-Saints' Day I chanced to see two corps-students entering the cemetery, and following them saw them lay a wreath on the grave of a doctor, not so recently dead that they could probably have personally known him. Yet he was the man who, for years, had stitched the wounds made in the old Hirschgasse Wirthshaus, and successive academic generations still kept his memory green.

C. F. W.

METEOROLOGICAL RECORD,

For the week ending November 19, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...13	30.36	39	44	34	81	72	76	W.	S.E.	6	8	C.	F.	
M..14	30.34	47	56	38	77	83	80	S	S.	6	7	F.	O.	
T..15	30.19	49	54	44	93	100	96	N.E.	E.	6	13	O.	R.	0.03
W.16	29.74	54	60	49	97	88	92	E.	S.W	35	16	R.	O.	1.08
T..17	30.09	57	65	49	77	84	80	W.	S.	8	7	C.	O.	
F..18	29.81	58	65	50	92	84	90	S.E.	S.	15	16	O.	R.	0.20
S..19	29.82	45	50	40	80	50	65	W.	S.W.	11	9	F.	C.	0.04
☞	30.05	50	56	43	85	81	83							0.19

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 19, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	677	237	15.45	22.80	2.10	7.50	1.05
Chicago . . .	1,250,000	456	151	21.34	13.42	1.54	11.22	4.64
Philadelphia .	1,092,168	379	128	17.42	13.52	.78	14.04	.26
Brooklyn . .	955,333	332	128	16.20	19.50	2.10	7.80	.60
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	193	60	15.12	16.74	1.62	7.56	1.62
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	104	35	11.52	11.12	1 92	7.68	1.92
Cleveland . .	281,353	70	24	29.82	12 78	—	17.04	8.52
Pittsburg . .	255,000	101	55	25.74	11.88	8.91	8.91	.99
Milwaukee . .	234,440	101	55	16.83	30.69	1.98	12.87	.99
Washington .	230,360	106	29	19.74	15.04	2.82	4.70	9.40
Nashville . .	87,754	28	7	—	28.56	—	—	—
Charleston . .	56,048	34	13	2.94	5.88	2.94	—	—
Portland . . .	40,000	11	1	9.09	—	—	—	9.09
Worcester . .	92,313	16	9	25.00	—	12.50	—	—
Lowell . . .	82,455	30	10	3.33	20.00	3.33	—	—
Fall River . .	82,128	32	12	12.52	12.52	6.26	3.13	—
Cambridge . .	74,644	19	9	5.26	31.56	—	—	—
Lynn	60,869	16	4	12.50	12.50	—	6.25	—
Springfield . .	47,052	14	5	14.28	21.42	7.14	—	—
Lawrence . .	45,910	16	6	18.75	12.50	—	6 25	—
New Bedford .	44,947	19	5	—	21.04	—	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Salem	31,495	6	0	16.66	—	—	16.66	—
Haverhill . .	30,065	11	2	27.27	—	9.09	9.09	—
Chelsea . . .	29,479	5	2	—	—	—	—	—
Fitchburg . .	27,444	—	—	—	—	—	-	—
Gloucester . .	26,805	6	6	16 66	16.66	—	—	16.66
Malden . . .	26,783	5	0	—	20.00	—	—	—
Newton . . .	26,498	10	0	—	20.00	—	—	—
Brockton . .	26,464	5	2	20.00	—	—	—	—
Taunton . . .	26,464	8	4	—	12.50	—	—	—
Waltham . .	20,942	6	2	—	16 66	—	—	—
Pittsfield . .	18,294	3	2	33.33	—	—	—	33.33
Quincy . . .	17,930	3	1	—	33.33	—	—	—
Northampton .	15,684	7	1	28.56	14.28	—	28.56	—
Everett . . .	14,745	1	0	—	—	—	—	—
Newburyport .	14,031	6	2	33.33	16.66	—	33.33	—
Amesbury . .	13,561	2	1	—	50.00	—	—	—

Deaths reported 2,861: under five years of age 1,007; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 476, acute lung diseases 498, consumption 308, diphtheria and croup 253, typhoid fever 59, diarrhœal diseases 58, scarlet fever 49, whooping-cough 21, measles 13, malarial fever 11, cerebro-spinal meningitis 9, erysipelas 6.

From scarlet fever New York 10, Chicago 9, Philadelphia, Boston and Pittsburgh 7 each, Brooklyn 3, Cleveland 2, Worcester, Fall River, Cambridge and Medford 1 each. From whooping-cough New York and Brooklyn 7 each, Washington 3, Chicago, Philadelphia, Cleveland and Lawrence 1 each. From measles New York 7, Chicago 5, Milwaukee 1. From malarial fever New York and Brooklyn 4 each, Chicago 2, Boston 1. From cerebro-spinal meningitis New York 3, Brooklyn 2, Chicago, Worcester, Lawrence and Gloucester 1 each. From erysipelas Brooklyn 3, New York, Philadelphia and Lynn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending November 5th, the death-rate was 19.6. Deaths reported 3,837: acute diseases of the respiratory organs (London) 319, measles 130, diarrhœa 78, scarlet fever 75, diphtheria 70, whooping-cough 40, fever 40.

The death-rates ranged from 11.3 in Swansea to 30.3 in Salford; Birmingham 21.4, Bradford 16.4, Croydon 21.6, Hull 22.7, Leeds 18.1, Leicester 15.3, Liverpool 25.2, London 18.2, Manchester 25.7, Newcastle-on-Tyne 18.2, Norwich 17.3, Nottingham 17.2, Portsmouth 15.9, Sheffield 20.9, West Ham 18.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 19, 1892, TO NOVEMBER 25 1892.

Leave of absence for one month is granted First-Lieut. James D. Glennan, assistant surgeon, U. S. A.

Leave of absence for one month, on surgeon's certificate of disability, with permission to leave the limits of the department, is granted Major John C. G. Happersett, surgeon, U. S. A.

Leave of absence for one month with permission to apply for an extension of three months, is granted Captain L. W. Crampton, assistant surgeon, U. S. A.

Leave of absence for one month, with permission to apply to the proper authority for an extension of one month, is granted Major Calvin DeWitt, surgeon, U. S. A.

The leave of absence for seven days granted Captain W. W. R. Fisher, assistant surgeon, U. S. A., is hereby extended fourteen days.

A board of officers to consist of Col. Joseph R. Smith, assistant surgeon-general, U. S. A., Major David L. Huntington, surgeon, U. S. A., Major Benjamin F. Pope, surgeon, U. S. A., is, by direction of the President, appointed to meet at Whipple Barracks, Arizona, on Monday, November 28, 1892, or as soon thereafter as practicable, for the examination of Captain Louis M. Maus, assistant surgeon, with a view to determining his fitness for promotion, as contemplated by the Act of Congress, approved October 1, 1890.

SOCIETY NOTICES.

Boston Society for Medical Observation. — A regular meeting will be held at 19 Boylston Place, on Monday, December 5, 1892, at 8 o'clock.

Readers: Dr. H. W. Broughton, "A Few Cases of Appendicitis."

Dr. W. L. Burrage, "The Treatment of Chronic Endometritis by Curetting and Gauze Drainage, with Synopsis of Twenty-seven Cases."

Election of members at 9 o'clock Report of committee on journals.

John C. Munro, M.D., *Secretary.*

Surgical Section of the Suffolk District Medical Society. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, December 7, 1892, at 8 o'clock.

"On the Treatment of Bubo by Excision and the Attempt to Secure Union of the Wound by First Intention," Dr. F. S. Watson.

"A Case of Meningeal Hæmorrhage; Trephining; Recovery," Dr. J. W. Elliot.

"Conclusions Drawn from a Study of Cases of Fracture of the Skull," Dr. James G. Mumford.

"An Improvement in Instruments for Trephining," Dr. E. H. Bradford.

"A Case of Linear Craniotomy," Dr. J. C. Warren.

Charles L. Scudder, M.D., *Secretary*, 94 Charles Street.

APPOINTMENT.

Dr. John Ridlon, has been appointed Professor of Orthopedic Surgery in the Post-Graduate Medical School of Chicago.

RECENT DEATHS.

Jean Antoine Villemin, M.D., well known as a pathologist, especially by his work on tuberculosis, died in Paris, October 6th, aged sixty-six years.

Franklin Henry Hooper, M.D., M.M.S.S., died in Boston, November 22, 1892, aged forty-two years.

BOOKS AND PAMPHLETS RECEIVED.

The Physician's Visiting List (Lindsay and Blakiston's) for 1893. Forty-second year. Philadelphia: P. Blakiston, Son & Co.

Consumption and Kockine. By Dr. Rudolf Seiffert. Translated by Wolf von Schierfraud. Chicago: Ackerman & Eyller. 1892.

Hygiene and Public Health. By Louis C. Parkes, M.D., D.P.H., London University, Fellow of the Sanitary Institute, London, etc. Third edition. Philadelphia: P. Blakiston, Son & Co. 1893.

A Manual of the Practice of Medicine, prepared especially for Students. By A. A. Stevens, M.D., Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Philadelphia: W. B. Saunders. 1893.

Hygienic Measures in Relation to Infectious Diseases. By George H. F. Nuttall, M.D., Ph.D., Associate in Hygiene and Bacteriology, Johns Hopkins University and Hospital, etc. New York: G. P. Putnam's Sons. 1893.

A Treatise on Nervous and Mental Diseases, for Students and Practitioners of Medicine. By Landon Carter Gray, M D., Professor of Nervous and Mental Diseases in the New York Polyclinic, etc. Philadelphia. Lea Brothers & Co. 1893.

Mechanical Support in Fracture and Dislocation of the Sixth Cervical Vertebra. Tubercular Ostitis of Tarsus; Rheumatoidal Arthritis of Tarsus. At What Age Should the First Treatment of Congenital Club-foot be Instituted? By H. Augustus Wilson, M.D., Philadelphia. Reprints. 1892.

Original Articles.

OPERATIVE TREATMENT OF RESISTANT CLUB-FOOT.[1]

BY E. H. BRADFORD, M.D.

In presenting this paper written on the subject of the treatment of resistant club-foot by means of radical operation, the statement should be made at the outset that it is not intended to advocate operative interference, even tenotomy, in all cases of club-foot, even of the congenital form. One of the most successful cases of congenital club-foot I am able to report was treated without any operative measures, even tenotomy. The result may be shown by the accompanying foot-print (Fig. 1). The drawings from photographs have already been shown;[2] but the foot-imprint is even more convincing than the photograph, and warrants the assertion that the feet are now perfectly normal in a child fifteen years of age treated without tenotomy when a year old. This can be seen by a comparison with the imprint of a normal foot (Fig. 2).

In this article investigation will be limited to those cases which, either through previous neglect or bad treatment or the obstinate nature of the deformity, have developed into the most persistent type of the distortion, resisting the simpler measures of treatment. In the 160 cases I have treated there has been no hesitation to perform more radical operations, such as wedge-shaped exsection of the tarsus, though this method, as will be seen later, is at present not advocated. While it is readily admitted that the successes of Drs. Taylor, Judson, and Shaffer have shown conclusively that club-foot can be in many instances satisfactorily corrected by means of mechanical treatment alone, in advocating operative measures for the persistent cases, the claim, however, is made that in the severest and most resistant cases cure can be effected more speedily, certainly and safely by proper radical operative measures than by simpler means. As Dr. Morton has well said, some cases of congential club-foot are corrected without great difficulty and permanently cured, while in others the deformity is resistant, and there is a tendency to relapse; and in treating of club-foot, in some instances time is of importance, and also the inefficiency or poverty of the parents has to be considered. Many resistant cases could be treated by mechanical means alone, provided the parents had sufficient persistency to continue the treatment for six months or a year or longer with daily or frequent visits; but where persistency and attention cannot be commanded, mechanical treatment becomes impossible, and these cases remain doomed to deformity unless some means can be devised which will enable the surgeon to cure in a short time. It is for this reason that operations on the bone, radical in character, are sometimes demanded which otherwise might have been avoided. The choice is between such methods as involve the least mutilation and give the best results in the speediest time.

Of these methods three deserve careful consideration: (1) Forcible correction, preceded by thorough division of the ligaments and tendons; (2) Removal of the astragalus, an operation frequently performed on the European continent, and advocated lately by Dr. Morton, of Philadelphia[3]; (3) Osteotomy of the neck of the os calcis and of the astragalus, preceded by careful division of the soft parts of the inner side of the foot.

It is not proposed to consider the claims of wedge-shaped resection of the tarsus, although this method has given good results. But any one who has had experience with it will know that an unnecessary amount of bone is sacrificed where this method is relied upon.

Forcible correction, combined with division of the shortened soft tissues accessible to the knife, will be found to be a method which in a large majority even of the most resistant cases will prove entirely satisfactory. It has the advantage of avoiding any unnecessary sacrifice of bony tissue, and has given excellent results.

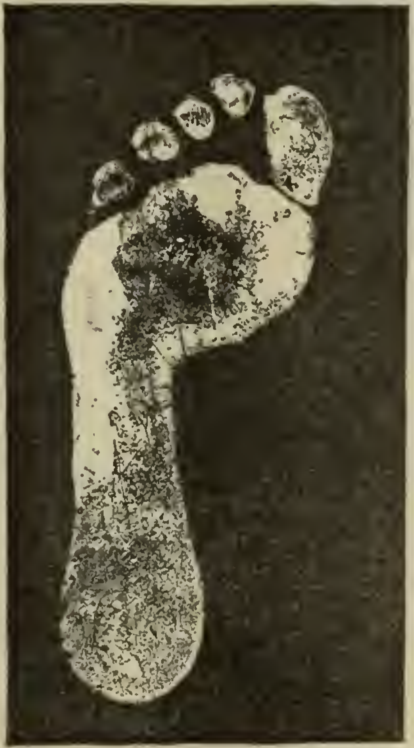

Fig. 1. Imprint of foot of a child sixteen years old, treated when one year old for congenital club-foot.

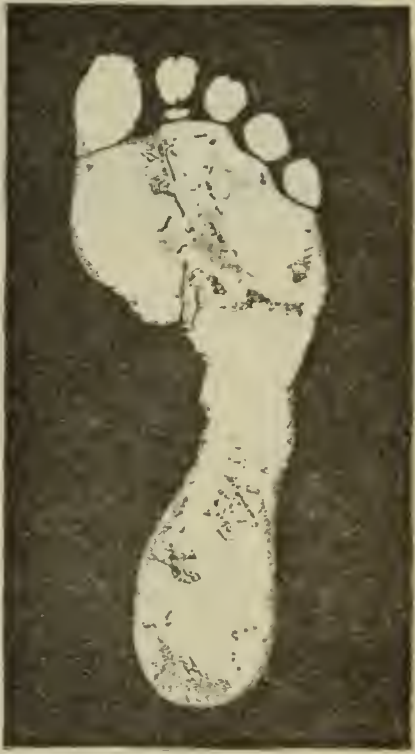

Fig. 2. Imprint of normal foot.

The accompanying illustrations will serve to show the fact that in cases of the severest type, the method is capable of giving satisfactory results without any sacrifice of bony tissue (Figs. 3, 4, 5, 6).

This case has already been reported in the *Revue d'Orthopedie*, March 1, 1892.

The foot-imprint represents the ultimate result three years after operation, and shows a sole of a foot entirely flat in walking, which three years before had been of the severest type of deformity in a woman thirty-five years of age. A lever wrench was used in correction previous to tenotomy having been done. Two sittings were required as the skin tore on the inner side of the foot at the first, and it was thought advisable to delay complete rectification until a fortnight had passed after the first sitting. The patient was enabled to walk about with crutches two weeks after the second operation, and a splint was applied one month later. The patient began to walk with the splint and a cane about this time, and she is now able to walk about freely without any appliance. It is now four years after the operation.

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[1] Read before the American Orthopedic Association.

[2] Transactions American Orthopedic Association, vol. i.

[3] Transactions of American Surgical Association, vol. viii, 1890, p. 71.

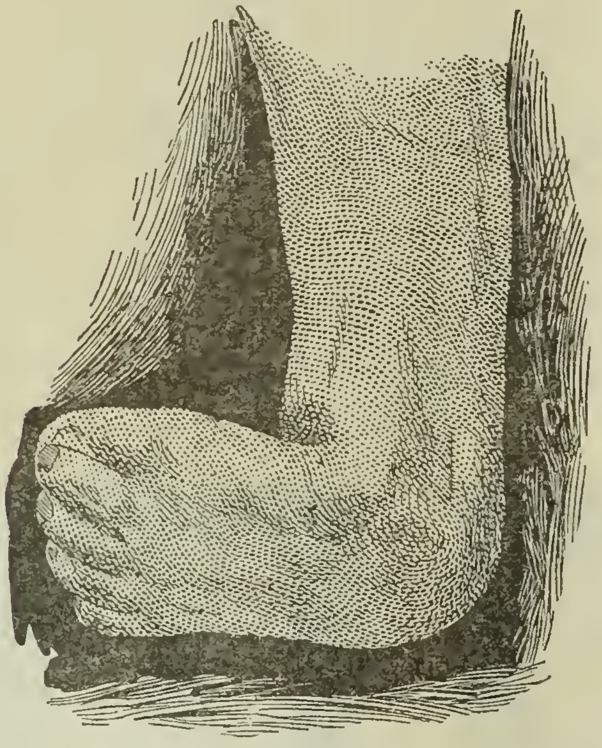

Fig. 3. Drawn from photograph of foot of a woman thirty-five years old, suffering from congenital club-foot.

She suffered somewhat a year after the operation from the pain of flat-foot, the foot having been over-corrected and the woman being a stout and heavy one. The cure may be considered a complete and permanent one.

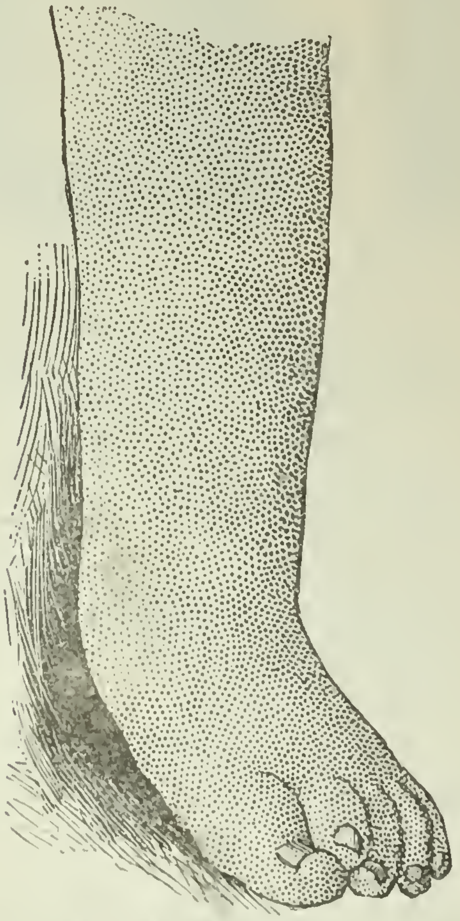

Fig. 4. The foot one year after forcible correction.

In regard to a choice between open incision and subcutaneous division of the soft parts preceding forcible correction, in a majority of cases I have employed the subcutaneous method, using a section of the insertion of the anterior and posterior tibialis anticus tendon and of the scapho-astragaleal ligaments, according to the method recommended by Drs. Parker and Shattock. After some practice with these methods, it has hitherto seemed to me that I have been able, in a majority of cases to satisfactorily divide all of the soft tissues by subcutaneous division. The plantar fascia is divided first: the tenotome is then inserted on the inner edge of the foot, at a short distance below the internal malleolus, directly towards the scaphoid; it is then passed directly under the sole of the foot, hugging the bone, and drawn inwards and

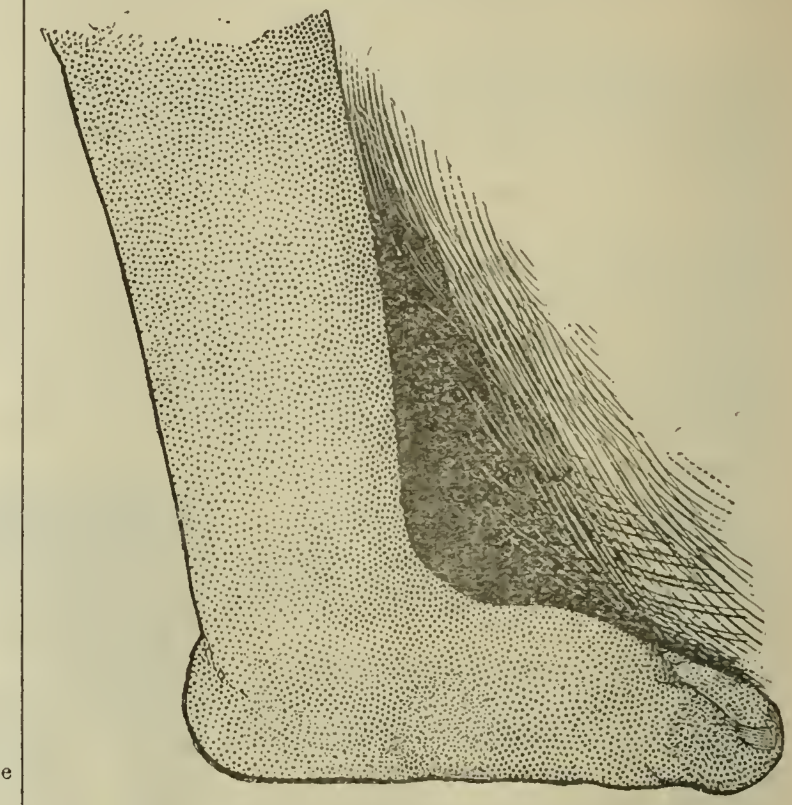

Fig. 5. Foot one year after forcible correction.

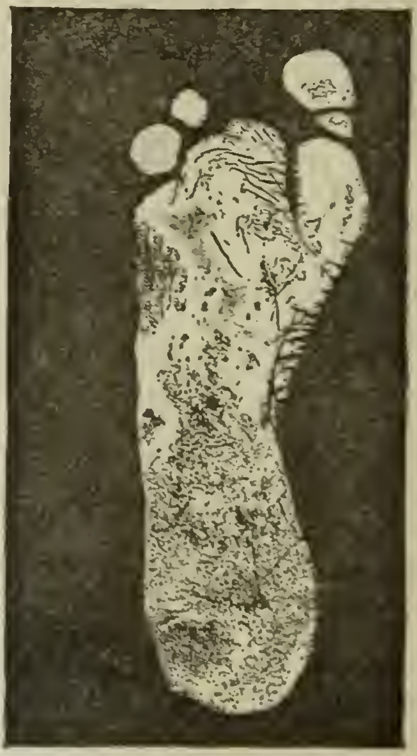

Fig. 6. Sole-imprint of the same foot three years after forcible correction.

forwards, keeping close to the edge of the scaphoid as it joins the astragalus. The tenotome is then inserted on the outer side of the foot at the junction between the cuboid and the os calcis. After this, the foot is forcibly corrected, such fibres as have not been thoroughly divided being stretched, and the tendo-Achillis is divided with the tenotome.

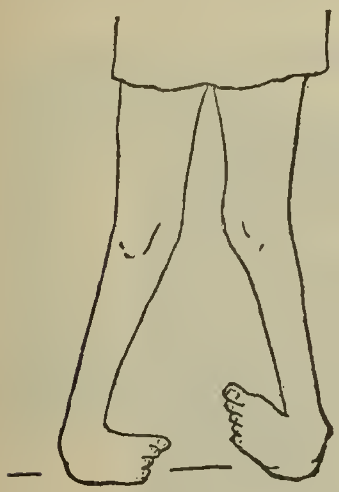

Fig. 7.

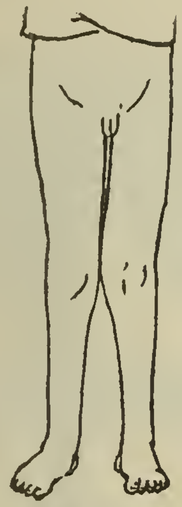

Fig. 8.

Fig. 7. Congenital club-foot in a boy six years of age, drawn from a photograph.
Fig. 8. After forcible correction.

But in many cases during the past year I have operated by means of an open incision introduced by Dr. Phelps; and I must frankly admit that the readiness with which everything is exposed and the certainty with which everything can be divided has led me to believe that, contrary to my previous opinion, the latter method is more thorough, and is to be preferred in resistant cases. There is one disadvantage, however, namely, the greater time needed for healing, as compared with that after subcutaneous division. The resulting scar is also an objection, though not a great one. In one case I have seen over-correction in a flat-foot follow too extensive section, but this can be avoided by proper judgment.

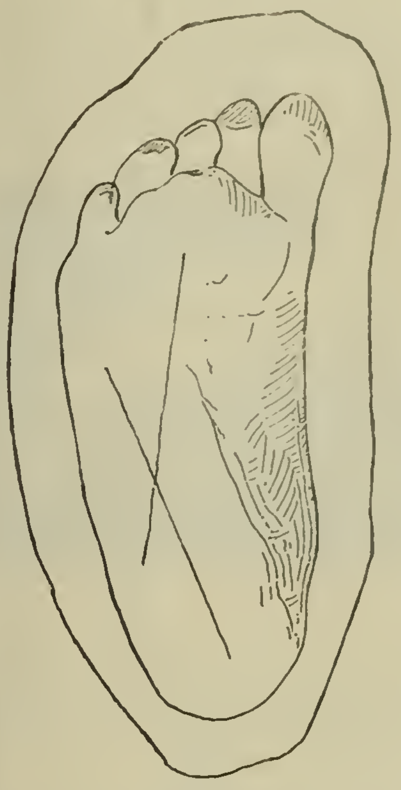

Fig. 9.

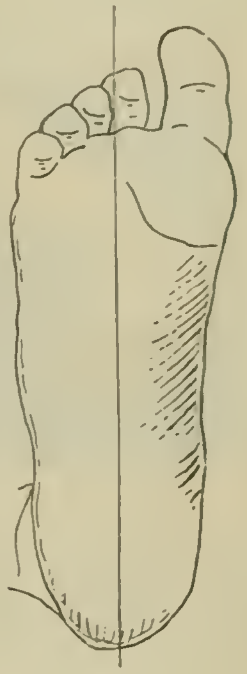

Fig. 10.

Fig. 9. Plaster-of-Paris imprint from a boy of eleven, after excision of astragalus for resistant club-foot.
Fig. 10. Drawn from photograph of foot of a boy of eleven, after osteotomy of neck of astragalus for club-foot.

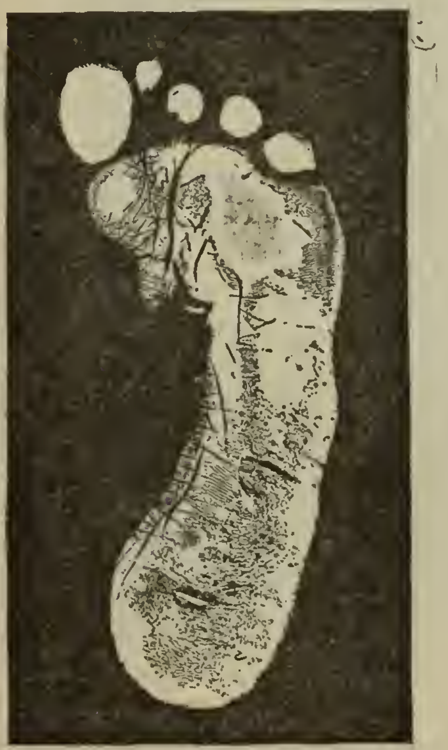

Fig. 11. Sole-imprint after removal of astragalus for club-foot.

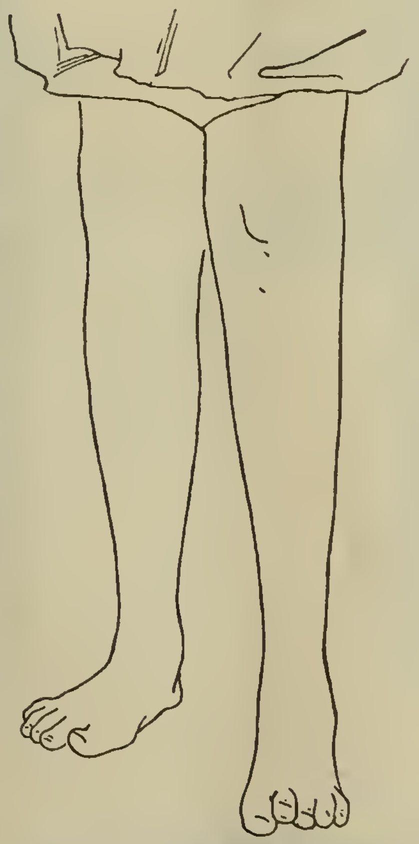

Fig. 12. Drawn from photograph after removal of astragalus of left foot for club-foot.

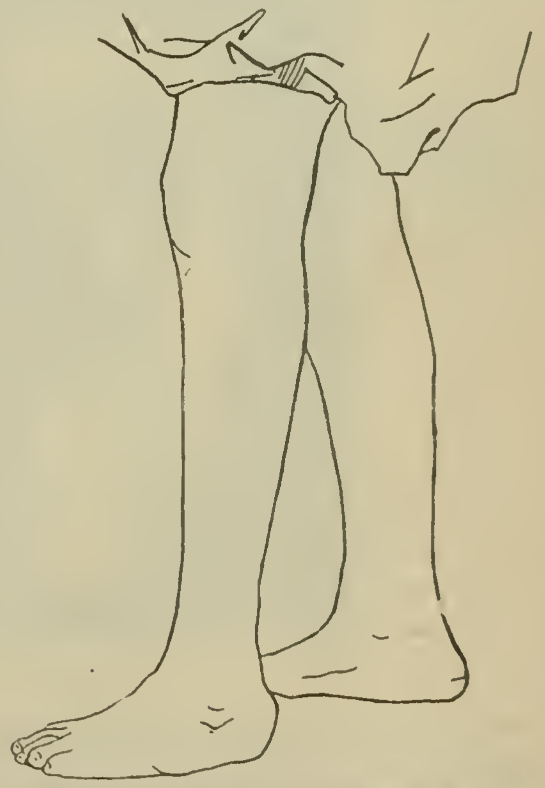

Fig. 13. Drawn from photograph after removal of astragalus of left foot.

The case of forcible correction mentioned well represents what can be done in a great many club-feet of the severely resistant type by this method; but in some instances such perfection cannot be attained in this way; either the deformity is so great or the undivided interosseous ligaments resist, that it is impossible to thoroughly over-correct. Repeated operation

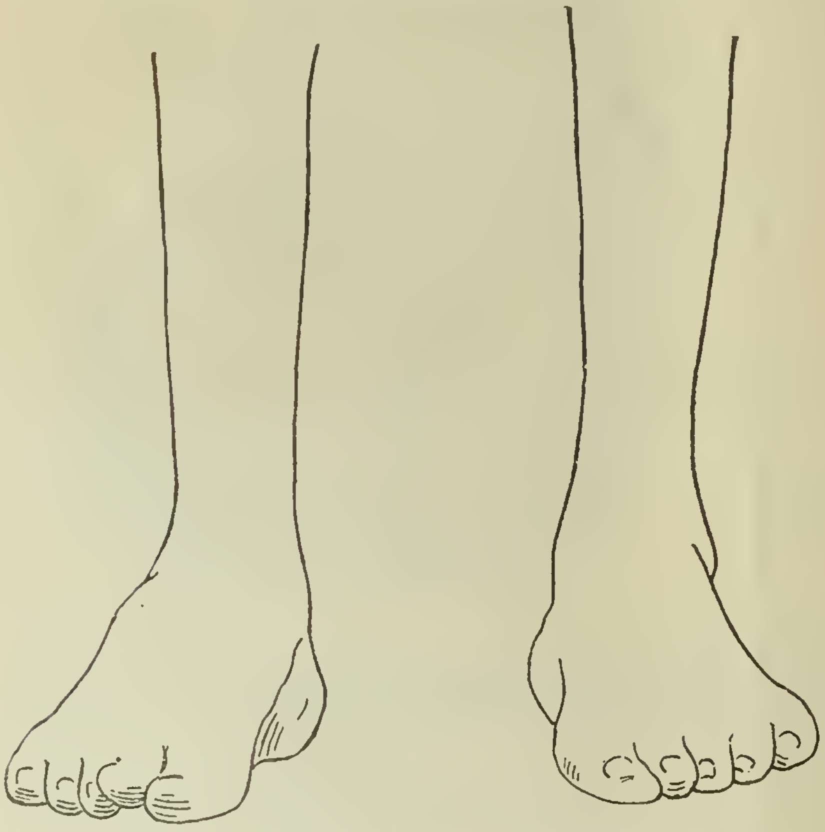

FIG. 14. Drawn from photograph after removal of astragalus.

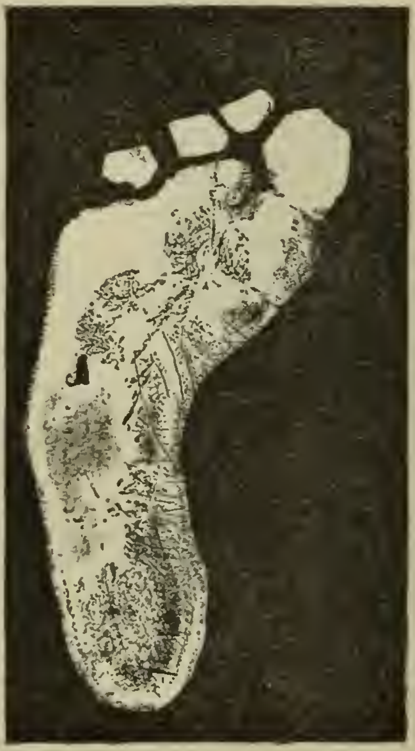

FIG. 15. Sole imprint of a case of club-foot corrected by tenotomy with inversion of the foot without contraction.

will in time stretch the contracted ligaments, but in some instances a satisfactory result is not gained. Example of this will be seen in the accompanying photographs (Figs. 7, 8). The deformity was of a very severe type; one foot was entirely over-corrected; the left foot, however, was nearly corrected, but not enough to prevent a relapse.[4] In this instance a great deal of force was used, and two sittings were given; but what appeared to be resistance at the joint between the cuboid and the os calcis was sufficiently strong to prevent bringing of the cuboid into an over-corrected position. The distortion at the astragalo-scaphoid articulation was satisfactorily corrected, but when the attempt was made to raise the outer edge of the foot at the same time that the front of the foot was turned up and brought up, an amount of resistance was encountered which could not be corrected by force. It formerly appeared to me that this was due to the strength of ligamentous bands uniting the important tarsal bones, and that if sufficient force were applied the difficulty could be overcome.

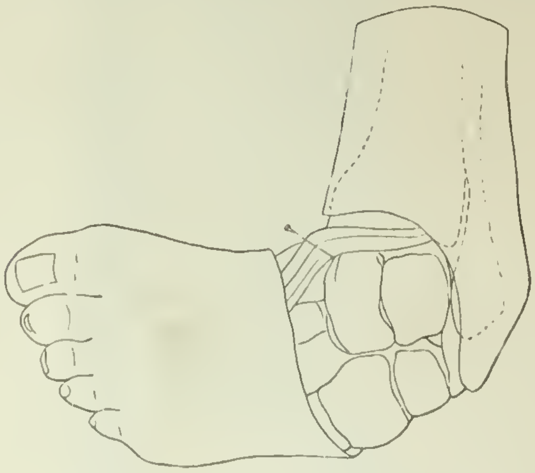

FIG. 16. Drawn from specimen of adult club-foot.

I am unable to state in how large a percentage of cases complete correction by means of force is possible. In a large number of cases this is true, but experience has shown me, in the 160 cases which have come under my care, that in five, relapses have occurred after satisfactory over-correction by force, as in the case just mentioned. In most of the cases the feet were small, the children being very young. I had explained this on the supposition that owing to the elasticity of the bones in the feet of children, the force could not be applied in such a way as to rupture or stretch the contracted ligaments. It also seemed probable that in some instances deformity of bone was the impediment; and for this reason I have in the last year excised the astragalus in five cases, in the belief that the astragalus was the bone chiefly affected, and because excellent results were reported as following this operation, especially in the interesting article by Dr. Morton. The results in five cases operated upon by me in this way are given below. The operation is itself a simple one. An Esmarch bandage is applied, and an incision made on the outer side of the foot, beginning a little above the external malleolus, and curving forward and reaching to slightly beyond the head of the metatarsal. After dissecting back the flaps by cross incisions, the astragalus is separated from the scaphoid, the tibia and fibula, and, after forcibly twisting the foot, from the os calcis. Some difficulty is often encountered in dividing the strong ligament betweed the astragalus and os calcis, but after the use of some care this ligament is divided, and also the astragalus is removed. A counter opening is sometimes made on the inner side of the foot; the wound through the skin is stitched; and after removal of the Esmarch bandage, the wound is dressed aseptically and the foot placed in a corrected position and fixed by means of a plaster bandage applied over a large aseptic dressing. The foot can, after operation, be placed without difficulty in the proper position and if proper care is used in asepsis, no evil effects follow the operation and the wound should heal well. After three weeks the plaster bandage is removed, an appliance put on, and later the patient allowed to walk. The result is a useful and often an excellent foot, and correcting appliances are not required after the ankle regains strength, that is, in from two to three months.

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[4] The patient died of diphtheria before an operation for complete correction of the left foot could be undertaken.

The results after this operation are shown in the accompanying pictures. It will not be found, however, that the results are entirely perfect, and it must be admitted that the removal of so large and important a bone as the astragalus, is in itself a mutilation which it is desirable to avoid if as good result can be obtained in other ways. An examination of the imprints of the sole in all the cases showed that a slight inversion still remains. This gives a result which, although satisfactory in that the resulting feet are not noticeably deformed and are useful, cannot be regarded as perfect, and perfection is what should be aimed at. This may be seen in the tracing of the feet shown in the accompanying illustrations. If the sole of a normal foot be examined, it will be noticed that a line drawn through the middle of the sole is a straight one. In the cases of club-foot after removal of the astragalus, it will often be seen that the median line in front of the medio-tarsal articulation forms an angle with the median line posterior to that articulation. This, which is not to be seen in a normal foot, is evidently due to the obliquity of the anterior facet of the os calcis, normally at right angles to the long axis of the foot, as it is well known from pathological specimens that this obliquity exists in a certain number of cases. A picture of the sole of what may be termed a perfect result is seen in the accompanying photograph (Fig. 10).

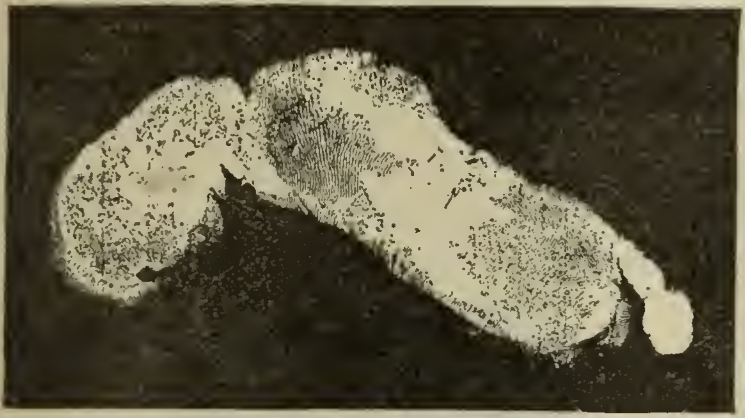
Fig. 17. Imprint left foot, congenital club-foot, before operation.

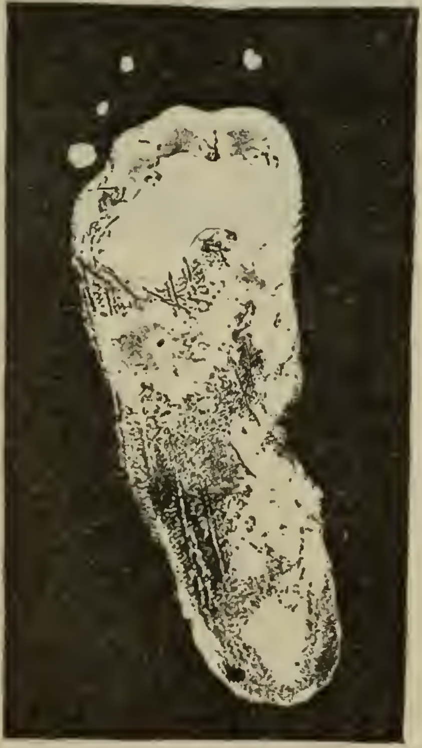
Fig. 19. Imprint left foot after operation.

In two of the five cases of excision of the astragalus I have done, the deformity was in both feet; in the others the deformity was of one. In all the cases the deformity was congenital, and had been treated with care before. Two of the cases had been treated by me, and had relapsed later; and they were earlier cases where the details of treatment were not as thoroughly understood by myself as later experience has taught. One was a boy of twelve; the second was a boy of ten, double deformity; the third, a boy of six; the fourth, a boy of ten; and the fifth, a girl of ten. The results were satisfactory.

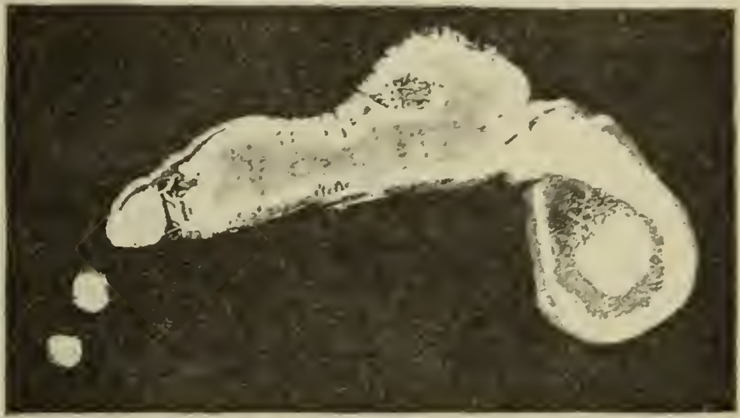
Fig. 18. Imprint right foot before operation.

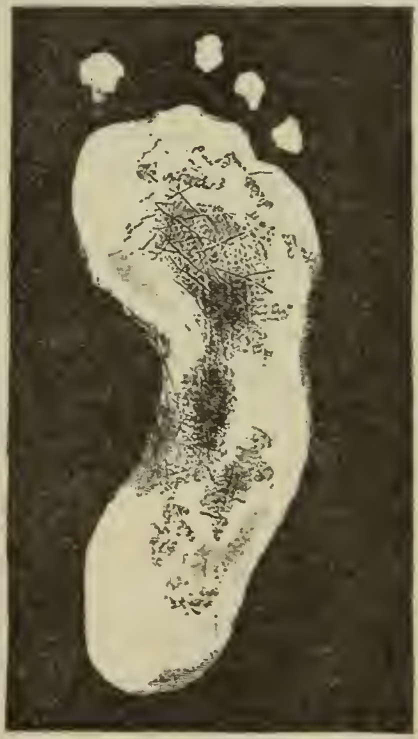
Fig. 20. Imprint right foot after operation — osteotomy of neck of astragalus and os calcis.

In all of these cases the slight obliquity inward of the anterior portion of the feet was noticed, marring the perfection of the result; though in no way preventing the usefulness of the foot or the activity of the child. This is indicated by the sole-impression of the imprint of the foot of Case 2 (Fig. 11). In Case 5, some twisting of the foot remains, as is seen by the illustrations (Figs. 12, 13). The astragalus was removed without difficulty. The wound healed; and the patient was soon able to walk about freely, with motion at her new ankle-joint. Judging from external appearances and the history of the case, it is evident that some internal and anterior obliquity at the articulation of the os calcis must be present, for after removal of the astragalus the inward inversion of the front of the foot should disappear, unless some other cause than the distortion of the astragalus was present (Fig. 14).

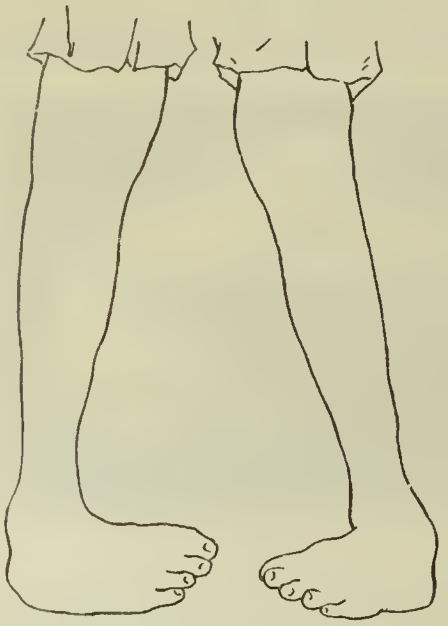
Fig. 21. Drawn from photograph, before operation in boy of twelve.

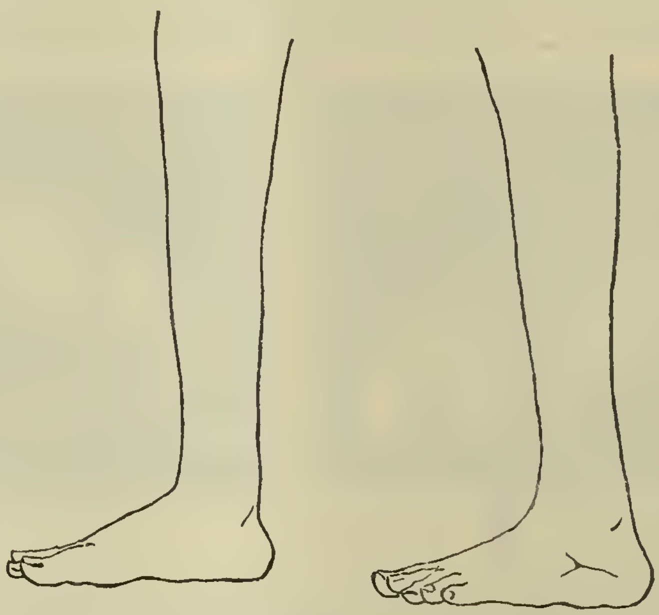
Fig. 22. From photograph after operation in boy of twelve — osteotomy of neck of astragalus and os calcis.

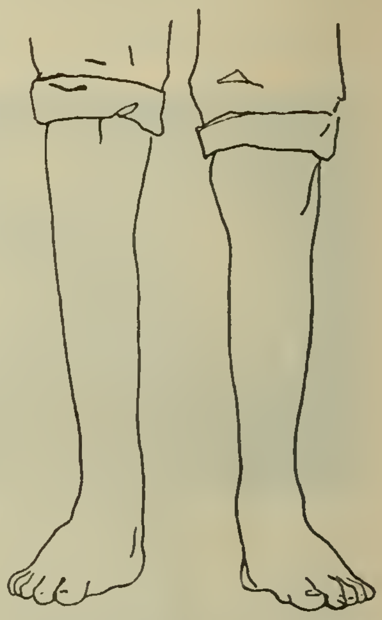
Fig. 23. Drawn from photograph after operation.

If the removal of the astragalus is not sufficient for complete correction it is evident that the deformity exists also elsewhere and the obliquity in the facet of the head of the os calcis suggests itself as a cause of the continuance of the distortion. This obliquity of the os calcis is demonstrated by the accompanying foot-print, which shows the foot-print of a case of congenital club-foot, treated by mechanical stretching and tenotomy of the tendo-Achillis (Fig. 15). The deformity is entirely corrected, as far as can be demonstrated, by complete flexibility and excellence in gait. There are at present no contractions either in the tendo-Achillis, plantar-fascia or in any part of the foot. The foot can be placed readily in an over-corrected position. The child walks about without apparatus, which has been discarded for several years. There is a tendency, however, for the child to toe in, especially when running, and the foot-print indicates that the anterior part of the foot turns to the inside. This appears to be due to the obliquity in the articulation of the facet of the os calcis. The same condition is seen in the photograph from the dissection in the Warren Museum (Fig. 16), and even better in a specimen of adult congenital club-foot, prepared by Dr. Goldthwait.

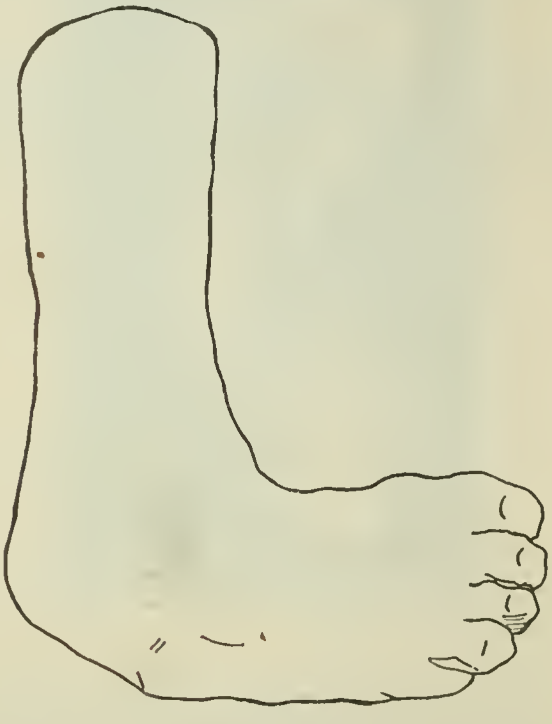
Fig. 24. Drawn from casts before operation in a boy of ten with congenital club-foot.

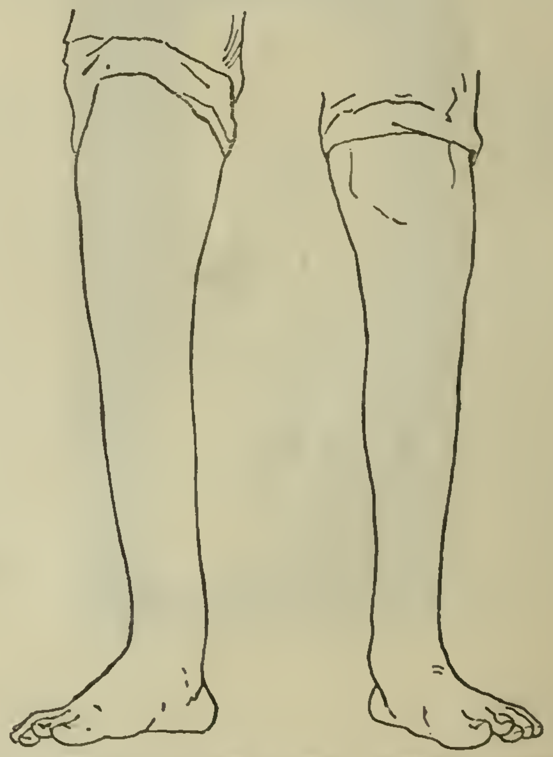
Fig. 25. Drawn from photograph after operation — double osteotomy of neck of astragalus and os calcis.

On examination of this specimen, it will be clearly seen that the obstacles to the correction of this deformity do not lie alone in the distortion of the astragalus, nor in the ligamentous tissues which bind the scaphoid to the astragalus. After these may be removed, there remain evidences of distortion in the os calcis at its junction with the cuboid. The articulated surface of the os calcis, as it lies in contact with the cuboid, is oblique relative to the axis of the foot, rather than at right angles to this axis. It is manifest that in this individual case it would be impossible to entirely replace the cuboid in the proper position in relation to the os calcis simply by a division of the soft parts on the inner side of the foot and also that after removal of the astragalus all the osseous obstacle to correction is not removed.

The method of procedure for attacking the projection of the os calcis is a simple one. An incision should be made, starting below the external malleolus with convexity upward reaching to the projecting head of the astragalus and passing downwards toward the outer side of the foot towards the sole. This flap should be drawn down by means of hooks, and the neck of the os calcis laid bare. An osteotome can be inserted a short distance from the line of the cartilage, and the wedge-shaped piece of bone removed from the neck. The foot can be forcibly corrected with but little force if the contractions of the soft parts on the inside of the foot have been stretched or divided. If, however, there is, as there often is, also resistance at the astragalus, the upper portion of the skin above the incision can be retracted, and the neck of the astragalus easily seen, an osteotome inserted, and either the astragalus divided by a linear osteotomy or a wedge-shape piece removed. The operation can be done very readily and with but little mutilation of the foot.

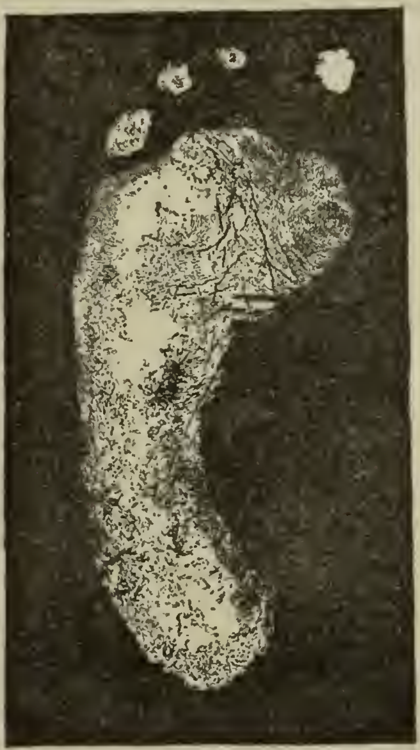

Fig. 26. Sole-imprint after osteotomy of neck of os calcis and astragalus.

I have operated in this way in three cases of double congenital club-foot with satisfactory results in the past year. The accompanying photographs and imprints indicate the results. They were taken (Figs. 17, 18, 19, 20, 21, 22, 23,) some time after the operation, proving the ultimate result to be satisfactory. Nothing of particular interest in the history of either case is to be recorded, except that in the first case, open incision was done on one foot and osteotomy of the neck of the os calcis and the astragalus were done upon the other foot with tenotomy but without open incision on the inner side of the foot. The result, as indicated by the tracing, would appear to show that the open incision without osteotomy gave a more satisfactory result than osteotomy following subcutaneous tenotomy. This is perhaps due to the fact that the foot on which osteotomy was done was the most severely deformed of the two. But it may suggest also the fact, which I have found in other instances, that subcutaneous incision does not divide as thoroughly as an open incision. In several instances I have divided by means of subcutaneous tenotomy as thoroughly as I was able to do, and I have subsequently cut down by an open incision to see if I had left any tissues undivided; and I have satisfied myself that with the tenotome in the foot, fibres may be left undivided by subcutaneous division, which can be only discovered by open incision, as is the case in subcutaneous division of the insertion of the sterno-cleido mastoid.

In the second case (Figs. 24, 25), the result was entirely satisfactory, and both were operated upon by osteotomy of the neck of the astragalus and of the os calcis. In previous cases I have attempted to osteotomize the neck of the os calcis, without thorough division of the plantar fascia in inner ligaments. They were earlier cases, and the operation was not done with precision or with the carrying out of the details already mentioned; and they may be fairly considered experimental cases. Although the deformity was corrected satisfactorily and useful feet resulted, yet the greatest possible perfection was not gained, as is shown in the accompanying foot-imprint, (Fig. 26), which, it will be seen, though that of a useful foot and in result to be compared with that after enucleation of the astragalus, yet is not so excellent as in the best cases.

In conclusion it can be said that not only is club-foot of the most persistent variety entirely and completely curable, but also that in many cases the milder means are sufficient. It is, however, demonstrable that in a certain number of cases osseous deformity of the neck of the astragalus and os calcis exists; and where this exists, the perfect correction can be made with but little mutilation of the bone, by either a linear osteotomy of the neck of the os calcis, and of the astragalus, or the removal from the neck of either or both a small wedge of bone, if this is preceded by thorough division or stretching of the contracted soft parts. Thorough lengthening of the contracted ligaments and fascias, as well as tendons, either by stretching or tenotomy or open incision, is essential for a perfect result; if this is not done a less perfect result is obtained.

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CASES OF CHOLECYSTOTOMY, WITH SOME REMARKS UPON THE TECHNIQUE OF THE OPERATION.[1]

BY A. T. CABOT, A.M., M.D.,
Surgeon to the Massachusetts General Hospital.

Last year I reported two cases of cholecystotomy; and my reason for bringing the subject forward again this autumn is, that there are one or two points in technique which I have learned during this summer's work, which, it seems to me, make the operation easier of execution and somewhat safer.

I have opened the gall-bladder six times during the past summer, and have removed gall-stones in four of these cases; in one case the stoppage of the common duct was due apparently to malignant disease, and in the other, although no stones were found in the gall-bladder, fragments were present there, which seemed to show that a stone had recently disintegrated.

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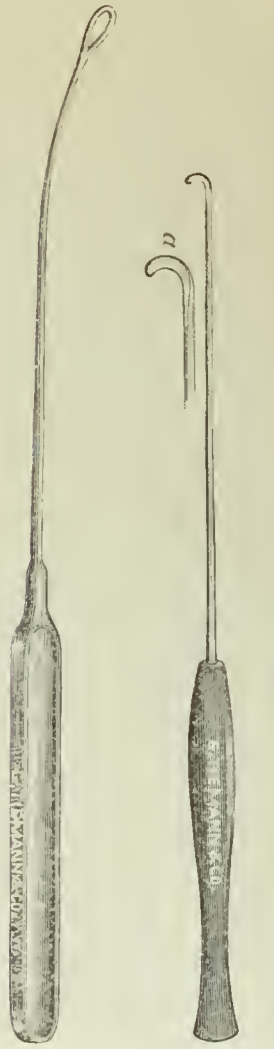
[1] Read before the Boston Society for Medical Improvement, October 24, 1892.

First, I wish to speak of the difficulty of dislodging stones from narrow ducts. In Case III, after removing one stone from the gall-bladder, I found that another stone was impacted in the cystic duct, at its junction with the common duct, so that the passage of bile along the common duct was checked, and the patient was very icteric. The cystic duct between the gall-bladder and the point where this calculus was lodged, was so narrow that the forceps could not be manipulated in it, and the walls were so rigid that it could not be readily dilated. After trying many expedients, a narrow loop of wire improvised for the occasion, was passed alongside of the stone, which was then easily dislodged and drawn forward.



a, Actual size of hook.

I have since had a wire loop made for the operation. It is small enough to slip along a narrow duct, and its outer surface is rounded and smooth, so that it does not catch, while the inner edge is somewhat sharp, so that it holds on to the calculus when it is once passed beyond it. With this, the removal of calculi in narrow passages is rendered comparatively easy. The accompanying figure explains this instrument better than I can describe it.

Another difficulty which I met with in three of my cases, was in making an incision through the walls of a duct which was felt to contain a calculus. It is so difficult to carry a sharp instrument deep down below the liver, guiding it wholly by the finger, and to make the incision at just the right point, over a calculus more or less movable, when important organs and vessels are lying close about the duct to be incised, that I felt the need of some instrument that could be operated at the end of the finger, without danger of lacerating structures against which it was not intended to be directed, and yet which would easily penetrate and open the walls of the ducts.

After using a knife in two such operations with great difficulty and trepidation, it occurred to me that with a blunt hook having a sharp edge on the inside, one could easily work through the walls of the duct, and then, cutting towards the finger, could make a sufficient incision for the removal of the stone. I had such an instrument made for me by Messrs Tiemann & Co., and have since had an opportunity to use it in Case VIII, with most excellent results. In the two previous cases this part of the operation had taken considerable time, which was mainly spent in endeavoring to protect the parts about, so that they should not be injured unwittingly. With the hook, of which I give a figure, the incision down upon the calculus was so easy that it took but a moment to perform, and the removal of the calculus, when found, certainly did not require more than two or three minutes in all.

This instrument is particularly useful in operating far under the liver, where a straight cutting knife cannot be easily carried. The point, which is somewhat sharper than an ordinary aneurism needle, is rubbed through the wall of the duct down on to the stone, and then a slight traction on the hook, making it cut its way out, opens space enough for the introduction of forceps and the easy removal of the stone. If the opening is not sufficiently large, the hook can be re-introduced and the incision somewhat prolonged.

In Case V, the difficulty in grasping the calculus in the hepatic duct with any forceps of the ordinary shape was so great, that I have had a curved pair of dressing forceps adapted to reach this part of the duct. Their blades are made so slender that they will readily slip between the calculus and the walls of the containing cavity, and they can be opened widely in narrow quarters.

I will briefly report the salient features of the cases that I have operated upon for gall-stones. The two cases previously reported are mentioned here, to make the list complete.

Case I.[2] Mrs. P., age thirty-eight, had a distended gall-bladder, from which on September 30, 1891, four good-sized stones were removed. The walls of the gall-bladder were stitched to the parietal peritoneum. Recovery without fistula.

Case II.[2] A delicate woman of twenty-nine had an abscess in and about the gall-bladder, caused by the presence of a large number of stones. This was opened and the walls of the gall-bladder were stitched to the parietal peritoneum, on December 9, 1891. The cavity about the gall-bladder was an irregular one, and no stones were found at the time of the operation. After the operation many stones were discharged through the opening, and now, almost a year later, the fistula still discharges a glairy fluid. No stones have been discharged for a number of months.

This was a patient of Dr. A. L. Norris, and was seen with him and Dr. J. T. G. Nichols.

Case III. Mrs. R., fifty years of age, was sent to me by Dr. H. F. Copeland, of Whitman, Mass. This patient's grandmother died with gall-stones, and several other members of the family have had liver trouble. Some fifteen or sixteen years ago she had several attacks of severe abdominal pain, which, as she remembers, was located under the right side of the chest, and was accompanied by a moderate jaundice, the stools at that time being light clay-colored. After several such attacks, she had no more until the 19th of May, 1891. She then had a severe attack with jaundice, and since that time has had twenty or more, all quite severe in character. When I saw her, she was rather thin, very much jaundiced, with a dry skin; the stools were clay-colored, and the urine was dark and contained much bile. Palpation showed doubtful resistance at the seat of the gall-bladder. There seemed to be a mass there, indistinct, which moved up and down with the liver. Percussion showed the liver to be decidedly enlarged downward.

The operation was done on May 17, 1892. Oblique incision, just below the lower edge of the liver. Gall-bladder found in a contracted condition, and opened. One stone was removed from it, and another stone was felt further along, at the junction of the cystic and the common duct. Between the gall-bladder and this second stone the duct was quite narrow. After dilating it as far as possible, many attempts were made to remove the stone with forceps, and finally it was dislodged and pulled forward with a wire loop. It broke during manipulation, and was removed in two pieces. The gall-bladder was stitched to the parietal peritoneum with catgut, and two anchoring stitches of silk. A tube was placed in the gall-bladder.

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[2] See Boston Medical and Surgical Journal, April 28, 1892.

The recovery of this patient was uneventful. The jaundice slowly disappeared, and it was not until June 13th that the stools began to show a decided color. On June 25th the sinus was finally closed. Mrs. R. has since been heard from, and has remained perfectly well.

Case IV. Mrs. T. F. A., a spare woman of fifty-one, was seen by me on June 17, 1892, in Providence, in consultation with Dr. C. T. Gardner and Dr. R. F. Noyes. The history was as follows:

Three or four years before, Mrs. A. had occasional attacks of pain, referred to the right side. Two years ago she had a double ovariotomy for dermoid cysts, done by Dr. G. W. Porter of Providence, and made a good recovery. Eight or nine weeks later she had an attack of pain in the region of the liver, with moderate jaundice. This was somewhat more severe than in previous attacks, and she had chills and a high temperature with it. At the time that she began to grow better from this attack, she vomited what seemed to be pus. She was then well until November, 1891, when she again had chills and high temperature. Jaundice soon developed and persisted from that time. Through the winter she had her ups and downs, but on the whole she lost flesh and the power of taking food. When I saw her in June, she was deeply icteric. I found the liver small, with nothing to feel, and no sensitiveness to superficial pressure; but on deep pressure beneath the cystic notch, if a long breath was taken at the same time, a tender spot was reached. It being evident that Mrs. A. was running down hill slowly but steadily, an operation was advised for the purpose of seeing whether gall-stones existed, and removing them if they were found.

The incision was in the ordinary place, parallel to and below the edge of the liver. The gall-bladder was much shrunken. The stone which was causing the trouble was found impacted in the common duct, close down to the duodenum. Much difficulty was found in so exposing the parts that this duct could be incised and the stone removed. It was finally accomplished, however, and a drainage-tube was placed in the cavity from which it had come, with gauze packed around it to protect the general peritoneal cavity from the invasion of bile. The operation was a difficult one on account of the depth at which the stone lay.

At the end of the operation there was an escape of fluid through the tube which was placed in the cavity which suggested duodenal contents. I did not see the patient again, but heard from Dr. Gardner that she died the fourth day after the operation, from tetanus.

There was much pain and distention of the bowels, suggesting peritonitis. The discharge through the tube on the first day resembled bowel contents, but after that there was a large escape of bile up to the time of death.

Case V. M. B., a man of sixty-two, was sent to the hospital by Dr. Joseph Williams, of Charlestown. He had a good family history, and was a steady, sober man. For two or three years he had been troubled with indigestion. One year before entering he began to have icterus, with "flashes of pain" in the region of the umbilicus. During the three weeks before he came to the hospital, he had about a dozen sharp attacks of pain in the right hypochondrium, each one of which lasted from five to six hours. His stools during this time became very white (clay-colored), and the jaundice at the time of entrance was extreme.

Examination showed an irregular extent of resistance below the liver, not easily defined through a stiff and rigid abdominal wall. There was tenderness in this region. The urine was dark, with a specific gravity of 1,011. It contained some granular casts, stained with bile-pigment. I operated upon him July 23, 1892. The omentum was found adherent to the parts about the gall-bladder, which was much shrunken, and lay far under the liver. It was opened, and many small stones were removed. The cystic duct was impervious to a fine probe. A further search was made, as what had been found up to this time did not account for the jaundice, and a large stone was felt in the hepatic duct, well back in the liver. With much difficulty an opening was finally made into this duct, and the finger was introduced. The stone could be felt, but it was very difficult to catch it, and it escaped out of reach into the much dilated hepatic duct each time that an effort was made to seize it. Finally it was caught with forceps, and broke in the effort to extract it. The pieces, as far as possible, were washed out. Both the gall-bladder and the hepatic duct were drained by tubes, and gauze was packed around them close down to the opening.

He made a slow recovery, there being much trouble from protrusion of a portion of the transverse colon through the wound. This was finally, however, controlled; and on August 17th his stools began to have a little color. From this time he recovered rapidly, and was discharged early in September entirely well.

Case VI. Daniel M., aged seventy-two, entered the Massachusetts Hospital July 29, 1892, in the service of Dr. W. W. Gannett. His illness began two years before, with an intermittent, dull pain in the hepatic region. Later gastric distress after eating appeared, with great loss of strength. Soon this epigastric pain became quite severe, and was followed by vomiting. The vomitus was often streaked with dark matter. Since April of this year, he had had frequent attacks of abdominal distension, relieved by belching of wind and vomiting. He lost about fifty-seven pounds weight. Three weeks before entrance a yellowness of the skin was noticed, and in three days he had become intensely jaundiced, which condition continued; he was very much troubled by pruritus, and the stools were clay-colored. There was constant tenderness and pain in the hepatic region, and immediately after taking food. He had in addition a sharp epigastric pain, which was usually relieved by vomiting. On examination the liver was found to be somewhat enlarged, but no defined tumor could be made out. Although it was felt to be a case of probable malignant disease, an exploratory operation was advised, and this was done on August 4th. The usual incision was made, and after separating some adhesions, the gall-bladder was readily found. It was examined externally first, without anything being discovered. An opening was then made into it, and the interior of it and of the duct was thoroughly explored, but no stone could be found. There was a nodular feeling at the lower part of the gall-bladder, and one or two little masses could be felt outside of it, and in the loose tissues about. A tube was placed in the gall-bladder, and the wound was closed. Everything went well in relation to the wound, yet the patient continued to have pain, and difficulty in keeping down any food, steadily lost strength, presently developed a persistent hiccough, and died August 14th.

Case VII. Mrs. C., aged forty, entered the Massachusetts General Hospital July 27, 1892. For three years she had been subject to attacks of pain in the region of the liver, these attacks being accompanied by jaundice. For two years she had an attack about once a fortnight, and latterly these attacks had come very frequently, there having been three during the fortnight before entrance. Her attacks were frequently accompanied by vomiting, and always by rise of temperature. After her entrance into the hospital, the attack with which she entered subsided. On August 1st, the operation being delayed while waiting for an instrument, she gradually got better; and by August 10th, the icterus had almost wholly disappeared. It being thought that these attacks were due to a stone in the gall-bladder, it was deemed wise, in consultation with Dr. Gannett, to operate between the attacks. This was done on August 11th.

The incision was made in the usual place. The gall-bladder was found shrunken. Nothing could be felt in it, and on opening it, a few little, disintegrated portions of what appeared to have been a stone, were found. No stone of any size could be felt in any of the ducts. A drainage-tube was placed in the gall-bladder, and the wound was closed down to the tube. Mrs. C. made a good recovery from this operation, but her convalescence was considerably retarded by bronchitis, with dulness at the base of one lung.

Case VIII. Lydia J. B., a spare woman, fifty-nine years of age, was referred to me by Dr. J. T. G. Nichols of Cambridge, and entered the Massachusetts General Hospital August 9, 1892, with the following history:

Twenty-five years before she had an attack of hepatic colic. Since then, at intervals she had had numerous similar attacks. Two months ago a severe attack began, accompanied at first by vomiting, later with chills and considerable fever. Since then she had had a steady, dull pain in the right hypochondrium and back. She was somewhat jaundiced at first, but this had gradually disappeared, the stools being now of a good color. The temperature, however, and pain persisted. It was deemed wise to operate. There was slight tenderness felt in the right hypochondrium, with some resistance; but nothing definite could be made out. The operation was done on August 10th, with the usual incision. The gall-bladder was found nearer the middle line of the abdomen than usual. It was much shrunken. It was incised, and about forty small stones were removed from it. The cystic duct was found to be impervious, just at its exit from the gall-bladder. In the cystic duct just beyond, pressing against its junction with the hepatic duct, was another stone, larger than any of those just removed. With the sharp hook, which I then used for the first time, I quickly opened the duct down onto this stone and removed it. This operation with the hook was very easy. The opening into the gall-bladder was then sewed up, and a tube was introduced into the cavity from which this last stone was removed. Gauze was packed around this, and the abdominal wound was closed down onto the tube and gauze.

On the next morning the patient's temperature had fallen to normal, and she made a good recovery, somewhat prolonged, owing to a persistent bronchitis.

In most of these cases, as will be seen, the gall-bladder was shrunken, and could not be felt before the operation. The decision for, or against, interference had to be made from the symptoms therefore, unaided by physical signs.

Usually, when a distinct history of sharp attacks of hepatic colic was obtained, a stone was found. In one case (No. VII), however, although the patient had had many seemingly typical colics, no consistent stone existed at the time of operation. The soft little fragments which were in this gall-bladder may have been portions of a disintegrating stone, or they may have been flakes of inspissated bile, some of which were large enough to occlude the ducts temporarily during their passage.

In two of these cases I have reported (Nos. V and VI), there was a strong suspicion of a malignant growth before operation, but it was decided to operate on the ground that, if such growth existed, the operation would do no harm, while, if the symptoms were due to gall-stones, great benefit might result. In Case V gall-stones were found, and the man made a good recovery; while in Case VI the suspicion of a malignant growth was confirmed, and the progress of the disease was unaltered by the operation.

Judging from the cases that I have operated upon, and from those of which I have had knowledge, it makes less difference than one would suppose, whether the gall-bladder is drawn up and stitched to the abdominal wall, or not.

If adequate drainage is provided for the bile, the cases in which openings are made into the deep lying ducts do well, and the bile does not exert any very irritating action upon the peritoneum with which it comes in contact. When, however, the gall-bladder can be drawn up to the surface, it is well to stitch the opening into the wound and thus shut it off from the peritoneal cavity. When this is done, I think it important to sew the gall-bladder to the parietal peritoneum rather than to the skin. In this way, it seems to me, there is less liability to the formation of a persistent fistula; for if there is a deep wound through the abdominal wall above the wound in the gall-bladder, there is a better chance for granulations to close across the opening than there is when the edges of the gall-bladder are drawn up to the edge of the skin, as in this way the surface from which granulations can grow is much curtailed.

In these cases I have always followed the rule of providing drainage for the gall-bladder, and have not attempted to at once close the wound in its wall by sutures.

In Case VI, I did stitch up the wound in the gall-bladder, but I provided drainage for the bile by a tube introduced into the cystic duct beyond. I am of the opinion, however, that in favorable cases the cystic wound might be safely closed, and that the time of convalescence might be thus considerably abridged. It would be possible to secure the wound of the gall-bladder against the under surface of the abdominal wound, as the stump of an amputated uterus is treated by Dr. Kelley's intra-peritoneal method, and thus the danger of an escape of bile into the peritoneal cavity might be greatly diminished, if not avoided.

OPERATION FOR REMOVAL OF THE STAPES WITHOUT ETHER.

BY CLARENCE J. BLAKE, M.D.

The following cases are reported as illustrations of a mode of procedure available for purposes of diagnosis by elimination as well as for operation in chronic non-suppurative middle-ear disease, and also, in the first instance, as presenting a condition consequent upon middle-ear disease which the literature of the subject shows to be not uncommon in that class of cases of a high grade of deafness to which the operation of stapedectomy is supposed to be applicable.

The first case was that of a man twenty-nine years of age, who was first seen in October, 1878, with a history of impairment of hearing in both ears following typhoid three years previously; the hearing had subsequently improved, but had again decreased in consequence of severe head colds. At that time both membranæ tympani were slightly opaque and the hearing in both ears for a watch, tuning-fork and voice was much less than the thickening in the middle-ear, as judged by the opacity of the membranæ tympani would apparently warrant; the watch was not heard on contact and the voice in a moderate tone only within a foot of each ear and better in the right; the hearing by bone conduction was good in both ears.

A diagnosis of thickening of the tympanic mucous membrane, especially about the stapes, was made, a prognosis of possibly slight improvement only was given, and treatment of the middle-ear by means of the catheter with stimulating vapors was begun and continued at intervals for three years, but without appreciable improvement.

In October, 1881, it was decided to attempt mobilization of the stapes, and this was done through a crescentic incision in the posterior superior segment of the membrana tympani, with a result of slight improvement in hearing aerially, which lasted for three days and then gradually decreased. Subsequent treatment, including care of the general health, occasional use of the Eustachian catheter, and more or less continuous massage (Hommell's procedure), resulted apparently in a maintenance of the hearing in the right ear, the left ear having become comparatively useless. It was finally proposed to resort to the operation of stapedectomy in the left ear, and as the case was one which had been followed with care in its observation, it was decided to do the operation under conditions which would permit testing both the hearing and the tactile sense of the patient during the progress of the operation. Personal experience as well as the recorded observations of others[1] having shown the inefficiency of cocaine instillations in the external auditory canal for local anæsthesia, it was decided to make the first incision in the membrana tympani under the influence of cocaine introduced per tubam, and to follow this up by further cocainization of the middle-ear through the incision, should that be necessary, previous experiments made in tenotomy of the stapedius, disarticulation, circumcision and mobilization of the stapes having shown these parts to be exceeding tolerant of interference so far as painful sensation was concerned.

The patient was seated upright in a chair, the head being held by an assistant. The ear was thoroughly scrubbed with a corrosive solution, and five minutes before operating from three to five drops of a ten per cent. solution of cocaine was injected through the Eustachian catheter, with a distinct sensation in the middle-ear and with an apparent decrease of the injection of the manubrial plexus which had been caused by the previous cleaning process. The operation was substantially the same as that previously described.[2] The cut in the membrana tympani caused no pain; there was little or no bleeding, and the slight oozing from the edges of the cut was checked by a twenty per cent. solution of cocaine on a cotton-tipped probe; the incudo-stapedial articulation and the stapedius tendon were plainly visible. Hearing-tests which had been made before the operation, were now repeated with substantially the same results. Politzer's acoumeter was heard when held so close to the ear that the hammer was on a line with the posterior border of the concha, the tuning-fork (512 v. s.) was heard aerially $\frac{25}{65}$ths. and by bone-conduction $\frac{35}{65}$ths. Nos. 1 and 2 Politzer's forks were not heard aerially, nor was the Galton whistle, ranging from 6,000 v. s. to 12,000 v. s.

The next step was division of the tendon of the stapedius, which caused no pain, but gave to the patient a slight subjective sound like a musical tone of high pitch, a symptom before noticed in cases of tenotomy of the stapedius and mobilization of the stapes in chronic suppurative cases, when done without ether; division of the incudostapedal articulation was also painless, but gave such friction sound, described as rasping, as might be expected from contact of a knife with bone. After disarticulation a broad rectangular knife was passed behind the incus to make sure of complete severance, and the hearing-tests again repeated gave no evidence of improvement. Efforts at mobilization showed the stapes to be firmly fixed, and in an attempt at circumcision by means of a fine paracentesis needle, the knife met with bony resistance on the superior and posterior borders of the niche, and gentle traction, made with a blunt hook, resulted in the coming away of the head and both crura of the stapes, broken off close to the foot-plate. There was no sense of suction on this extraction, no vertigo, no change in pulse, and no special sensation on the part of the patient except a snapping noise which was presumably heard at the moment of fracture. Investigation of the fenestral niche by means of the probe showed the base-plate to be apparently fixed by bony union, especially to the posterior and superior walls, the surface of the base-plate also seemed to be roughened; and this condition, taken in connection with the subsequent examination of the crura which showed them to be distinctly atrophied, placed this case in the class described by Schwartze, where atrophy of the crura follows long-continued anchylosis of the base-plate of the stapes.[3]

The whole operation, including the tests made in its progress, lasted but twelve minutes, and was without pain to the patient, who was, however, it should be said, a well man of an equable temperament. Five days after the operation, during which interval there had been neither pain nor other discomfort, the hearing-tests in the left ear gave the same results for the Politzer's acoumeter and for the duration of the tuning-fork aerially, but the hearing was improved in the following respects: Galton's whistle, previously not heard at all, was now heard throughout its whole register; the tuning-forks (Nos. 1 and 2) were heard plainly, as was also the voice in a low tone close to the ear; a loud voice, however, even if one or more feet distant, was heard only confusedly, though with the facility acquired through long deafness the sentences used in testing were construed rather than heard, a circumstance which illustrates the importance in voice-tests, not only of reproducing the voice with as nearly as possible the same pitch and intensity, but also of constructing the test sentences with a deference to the force value of the consonant sounds.

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[1] Katz: Monatsschieft für Ohrenheilkunde, September, 1891. Stetter: Monatsschieft für Ohrenheilkunde, August, 1892.

[2] Operation for removal of the Stapes: Boston Medical and Surgical Journal, November 17, 1892.

[3] Schwartze: Pathological Anatomy of the Ear, translated by J. Orne Green, M.D., p. 120.

The second case was that of a woman fifty-five years of age, who was first seen in April, 1876, on account of chronic catarrhal inflammation of both middle ears, the hearing distance, as tested by the Politzer's acoumeter, being at that time in the right ear one-half inch and in the left ear fifteen inches. Under local treatment the hearing in both ears at first improved, but subsequently decreased, until at the time of the operation the acoumeter was not heard in the right ear; the upper portion of the scale of Galton's whistle was also not heard, and the tuning-fork (512 v. s.) was heard only $\frac{12}{65}$ths. As the hearing in the left ear was also materially decreased, it was decided to operate upon the right ear, and without ether if possible; the ear was therefore cleansed in the manner above described, and five minutes before operation three drops of a ten per cent. sterilized solution of cocaine were injected through the Eustachian catheter. The incision in the membrana tympani was the crescentic peripheral cut already described; but, as the first part of the incision caused pain, a further period of three minutes was allowed to elapse, and the incision was then continued with comparatively little discomfort, the only further use of cocaine consisting in the application of the ten per cent. solution on a cotton-tipped probe to the edges of the cut, care being taken, for the purposes of a subsequent experiment, not to carry this cocaine into the middle-ear.

Tests of hearing at this stage of the operation showed no improvement or change, either by aerial or bone conduction, and served to confirm the diagnosis of fixation of the stapes in consequence of the long-continued thickening process in the middle-ear. Careful tactile examination of the accessible portions of the inner tympanic wall, especially in the neighborhood of the fenestral niche, by means of a probe, showed lack of sensitiveness to touch, with exception perhaps of a slight pricking sensation; if however, the probe came accidentally or intentionally in contact with the cut edges of the membrana tympani, especially on its superior posterior margin, there was sense of discomfort, which amounted to pain as the effect of the cocaine passed off, which it apparently did before the more important part of the operation was continued, and care was therefore taken in subsequent manipulations to avoid touching the edges of the opening of the membrana tympani. Under these conditions the operation continued and was completed, including the tenotomy of the muscle, disarticulation and removal of the stapes without pain to the patient. The division of the muscle caused a sensation of a dull thud to the patient, and in dividing the articulation between the incus and the stapes, the grating sound made by the knife was distinctly heard. The anchylosis at this point was very firm, and the disarticulation was effected with such difficulty that at its completion the incus dropped, not only outward but also slightly downward, in such a manner as to show that it was separated from the malleus also; under this condition its removal seemed advisable, and this was easily done by means of the blunt hook and forceps, the only pain caused being incident to the passage of the body of the incus through the opening in the membrana tympani. The stapes was now plainly in view: and as no improvement in hearing had been so far effected, this bone was also extracted by means of the blunt hook passed between the crura from above, and came away with the sensation to the patient, of a loud report, but without causing either pain or vertigo, the pulse, which had been 80, rose to 100 and became weaker but returned to its former rate and volume within two minutes.

Subsequently to the operation, in both of the above cases there was no other discomfort than that naturally incident to holding the head in a constrained position; and in this respect, as well as in the conditions of the operation itself, the result was a satisfactory one. Indeed, the use of the cocaine may, in most cases of middle-ear operation of the above class, be limited to the region of the membrana tympani, and may therefore be introduced through a preliminary incision as has been heretofore done with similar opening made for simple moblization of the ossicula. In an operation of this kind begun under cocaine, there is also always the alternative of recourse to ether should the local anæsthetic fail of its effect or the patient find the restraint of self-control too great an effort.

Clinical Department.

ECTOPIC GESTATION.[1]

BY CHARLES P. STRONG, M.D.

MRS. J. W. P., aged thirty-seven. Two children, sixteen and fourteen years ago; since never pregnant, unless what the physician told her was a "false conception" three years ago was a miscarriage at six weeks. Referred to me, April 29, 1892, by Dr. Sanford, of Everett.

Last natural flow was six weeks ago, that is, in the middle of March. April 5th, had, after exposure to cold, severe pain in left side. Dr. Conroy, of Everett, called, and found her temperature 99°, pulse 80. Pain quieted by phenacetine. The next day there was no pain; normal temperature. Examination by Dr. Conroy showed slight tenderness in left lateral cul-de-sac, with possibly slight enlargement of left tube. Ordered hot douche.

When seen by me, April 28th, three weeks later, she had had quite profuse flowing for two weeks; some pain in left side, extending into rectum; soiled one to two napkins daily.

The abdomen being very thick, examination was in a measure not quite satisfactory; but these details were at the time recorded. The uterus was low in the pelvis, enlarged, freely movable, in shape resembling a pregnant uterus; no rhythmatical hardening observed. Cervix softened and shortened, with patulous external os. Left broad ligament broad at base. Tenderness along left tube, which was slightly enlarged but in apparently its normal position. Excessive development of uterine arteries.

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[1] Read before the Obstetrical Society of Boston, June 11, 1892.

I found that the history of "false conception" of three years previous pointed probably to a pelvic abscess, which would account for the conditions at this time evident on the left side; and my diagnosis was abortion in the early weeks of pregnancy with retained decidua — a slight possibility of tubal gestation to be cleared up by an examination under ether at the time of curetting out the uterus, which I advised to be performed at once.

On May 14th the patient entered my private hospital. In the two weeks' interval, during which she was under the care of Dr. Meade, of Everett, there had been elevation of temperature and increasing pain. Examination under ether showed a mass evidently in the *right* broad ligament extending nearly to the umbilicus, crowding the uterus well to the left side, and posteriorly distending the fossa behind the uterus, in part elastic in part firm. There were slight decidual remains in the uterus which measured four inches in depth.

My diagnosis was, as recorded, ectopic gestation, with possibility of purulent salpingitis. I operated at once in Trendelenburg's position. Enucleation of the sac was difficult, owing to universal peritoneal adhesions. Separating along the lower border of the broad ligament, the sac ruptured, disclosing about one pint of dark clotted blood. The entire sac was removed. The tube contained decolorized fibrinous clots near its uterine end and was enlarged quite uniformly to the diameter of one inch.

Recovery uneventful. Microscopical examination by Dr. W. W. Gannett showed the presence of the villi of the chorion in the tube. He writes as follows:

"The specimen is an irregular sac about the size of an apple, with peritoneal covering roughened by adhesions. The cavity is directly continuous with the Fallopian tube at the uterine end, and is evidently a dilated tube. The inner wall of the cavity is rough and shreddy, and the cavity itself contains dark red masses which are blood-clots.

"Microscopic examination of bits taken from the lining of the cavity shows a structure made up of branching, tufted blood-vessels, many having club-shaped extremities. These are the characteristic chorion-villi; and the diagnosis of *tubal pregnancy* is warranted."

The case was unmistakably one of ectopic gestation. The examination of April 28th in my office, and the subsequent journey home, started up a fresh hæmorrhage leading to rupture within the folds of the broad ligament. There was, among the clots, no fœtus found.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., BOSTON.

RAILWAY SERVANTS' EYESIGHT.

The reports of two committees on this subject, one appointed by the Council of the Royal Society of England, and the other by the Council of the British Medical Association, have been published in the past year.

The Committee on Color-Vision appointed by the Council of the Royal Society on March 20, 1890, consisted of eleven members, all of them well known in the scientific world, nearly all fellows of the Royal Society; its chairman was Lord Rayleigh, Sec.R.S.; its secretary, Captain Abney, C.B., F.R.S. The committee held thirty meetings, and examined more than 500 persons as to their color-vision. They tried various methods and apparatus. They examined as witnesses a number of gentlemen representing boards of trade, the science of navigation, steamship and railway companies, and the ophthalmic branch of medicine. In order that their recommendations and the grounds on which they have made them, may be intelligible to those who are concerned, a careful description of the character of normal color-vision, and of the many and not uncommon variations therefrom, is given as a part of the report. There are some few people who fail to distinguish blue from green, and others, equally few, who only see in monochrome; but the color-blindness which is most common, and therefore most dangerous, especially as the colors generally used for signals are red and green, is the so-called red-green blindness. A red-green blind person will regard a certain hue of green as identical in color with some hue of red, and another hue of green as identical with white; some will entirely fail to see red of a particular hue. Examination of such persons by means of the spectrum shows that this form of color-blindness may be divided into two classes, which for convenience may be termed green-blindness and red-blindness. With the normal eye the part of the spectrum which appears brighter than any other is the yellow; to the green-blind it is nearly at the same place; to the red-blind it is the green. To a person belonging to either of these two groups there is in the spectrum a green which he cannot distinguish from white, and which may be designated as his neutral color. On the one side of this neutral band in the spectrum he will see green or red, more or less diluted with the neutral color, and on the other side blue, also similarly diluted. The dilution increases as the neutral point is approached, and for some little distance on each side of it — unless a comparison with white be at hand — the dilution is so large that the color may be mistaken for the neutral color, that is for white.

When signal-lights are used as tests, color-blind persons may sometimes be able to name the colors correctly, recognizing them by their relative brightness, and by their dilution with neutral colors. The committee confirmed this by practical tests; men absolutely color-blind passed such tests without being detected.

The test is therefore inadequate for safety, for the recognition of a color-signal by its brightness might easily become fallacious under the influence of a dirty glass or a misty atmosphere. The red signal of danger might then be mistaken for the green or white signal of safety, and *vice versa*, especially as the signal-light has, as a rule, no white light adjacent to it with which it may be compared.

The recommendations on which the committee unanimously agreed are as follows:

(1) That the board of trade, or some other central authority should schedule certain employments in the mercantile marine and on railways, the filling of which by persons whose vision is defective either for color or form, or are ignorant of the names of color, would involve danger to life and property.

(2) That the proper testing, both for color and form,

of all candidates for such employments should be compulsory.

(3) That the testing should be entrusted to examiners certificated by the central authority.

(4) That the tests for color-vision should be those of Holmgren, the tests of wools being approved by the central authority before use, especially as to the correctness of the three test colors, and also of the confusion colors. If the test be satisfactorily passed, it should be followed by the candidate being required to name without hesitation the colors which are employed as signals or lights, and also white light.

(5) That tests for form should be those of Snellen. It would probably, in most cases, suffice if half normal vision in each eye were required.

(6) That the candidate rejected for any of the specified employments should have the right to appeal to an expert approved by the central authority, whose decision should be final.

(7) That a candidate who is rejected for naming colors wrongly, but who has been proved to possess normal color-vision, should be allowed to be re-examined after a proper interval of time.

(8) That a certificate of the candidate's color-vision and form-vision according to the appointed tests, and his capacity for naming the signal colors, should be given by the examiner; and that a schedule of persons examined, showing the results, together with the nature of the employments for which examinations are held, should be sent annually to the central authority.

(9) That every third year, or oftener, persons filling the schedule employments should be examined for form-vision.

(10) That the tests in use, and the mode of conducting examinations at the different testing-stations, should be inspected periodically by a scientific expert, appointed for that purpose by the central authority.

(11) That the colors used for lights on board ship, and for lamp signals on railways, should, as far as possible, be uniform, and that glasses of the same color as the green and red sealed pattern glasses of the Royal Navy, should be generally adopted.

(12) That in case of judicial inquiries as to collisions or accidents, witnesses giving evidence as to the nature or position of colored signals or lights should be themselves tested for color- and form-vision.

The report of the Council of the British Medical Association on the efficient control of railway servants' eyesight was prepared by a committee appointed by the Council on October 21, 1891. The chairman of the committee was Mr. N. C. MacNamara; the secretary, Dr. Geo. Mackay; and the five other members also were all well-known ophthalmic surgeons.

The committee endeavored to obtain precise information as to the method of sight-testing employed on every British railway; and, through the courtesy of the respective managers and in some cases of the medical officers, they obtained returns which may be considered as fairly complete. It appears that some few companies employ no visual tests or have no definite method of testing, and that as concerns the others the present want of regulation has led to the adoption of methods which do not generally secure the safeguards desired by the companies themselves, which in some cases do injustice to the companies' servants, and which do not sufficiently ensure the safety of the public.

The following are the recommendations of the committee:

(1) That all candidates for railway service — certainly all those applying for duties connected with the safe-conduct, signalling, and moving of trains — should undergo an examination in eyesight.

(2) That the examiners in all cases should be qualified medical men. To ensure that these gentlemen are not themselves color-blind, and that they are familiar with ophthalmic work, the committee suggests that no railway company should appoint an examiner except on the recommendation of a consulting ophthalmic surgeon, who shall certify that his nominee is in all respects well fitted for the duties of the office.

(3) That the following standards of vision should be required on all the railways of the United Kingdom:

Class A. For the posts of engine-cleaner, fireman, driver, signalman, and pointsman, there should be required: In one eye normal acuteness of vision and normal refraction. In the other eye, acuteness of vision not less than one-half of the normal without glasses. Care should be taken by the examiner to determine that the condition of visual acuteness is not dependent on any latent error of refraction, for example, high hypermetropia which by becoming manifest might lead to the candidate's disqualfication in later life. In each eye normal color-sense. Unrestricted fields of vision. Strabismus or any defective action of the exterior muscles of the eyeball or unhealthy condition of the eyes or eyelids should disqualify a candidate for any of the above appointments.

Class B. For all other situations in the executive service concerned in the moving and signalling of trains: With both eyes open visual acuteness of not less than two-thirds of the normal without glasses, provided that neither eye has less than one-third of normal vision without glasses. In each eye normal color-sense, and unrestricted field of vision. Strabismus, or any defective action of the exterior muscles of the eyeball, or unhealthy condition of the eyes or eyelids, should disqualify a candidate for any of the above appointments.

The committee believes that the wearing of glasses is compatible with the duties required of some employés who would be included in Class B. In such cases they are of opinion that men should be encouraged to wear spectacles in order that their visual power may be raised above the standard defined for this class.

Re-examination. — (*a*) That in Class A re-examination of the eyes and visual power should take place on each promotion, and also on transference of any servant from Class B to Class A. (*b*) That powers should be possessed and systematically exercised for re-examining railway servants at approved intervals, and otherwise as may appear desirable; for example, after neglect or act which may be attributed to defective sight, especially such as are connected with accidents, collisions or derailments. After every acute affection of the eyes or lids. After serious accident, especially those which could cause concussion of the brain, and after diseases of the brain in general. After the diagnosis of diabetes mellitus, or albuminuria, as well as secondary syphilis. In general, on the recommendation of the railway surgeon or the medical man who has been treating the person.

The following general rules should also be enforced:

(1) That each eye should be tested separately for color-sense as well as for form-sense.

(2) That the test for color-sense should be that of Holmgren carried out in strict accordance with his directions. After this test has been passed, the candi-

date should be required to recognize and name promptly the colors used in signalling. We wish to emphasize the importance of employing glass of standard color in railway signal lamps, as recommended by the committee of the Royal Society.

(3) That the test for form-sense should be carried out by means of Snellen's type, and in accordance with his published instructions.

(4) Any employé on a railway reported to be disqualified for any service on account of defective eyesight shall have a right of appeal to the consulting ophthalmic surgeon of the line on which he is employed, whose decision should be final.

(*To be continued.*)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, October 24, 1892, Dr. Blake, Chairman, *pro tem.*

Dr. M. H. Richardson showed

SPECIMENS OF THE VERMIFORM APPENDIX.

He said: I wish to show eight appendices which I have removed recently with four deaths and four recoveries. Since reporting eighty-one cases in April, I have been called to twenty-three others. I have removed the appendix in many of these cases, and in all I have found the same general characteristics. All have been swollen, gangrenous and perforated. With one exception there has been a fæcal concretion at the point of ulceration. In that case there was doubtless a foreign body which became lost in the appendicular abscess, and was washed out at the time of the operation. It is interesting to me to observe that in the cases of early interference the appendix is easily isolated, and that even in a spreading peritonitis the prognosis is vastly more favorable than at later periods, even if the operation is performed as early as the third or fourth day. In one of the specimens you will observe that the omentum has been removed, and that it has the same gangrenous appearance seen in the appendix itself. In this case I separated the adhesions about the appendix thinking I could feel it at the bottom of the abscess cavity. It proved to be the omentum tied down by adhesions, the appendix being situated at the brim of the pelvis. Before I could close the abdomen I had been obliged to separate the adhesions in all directions. The child died of shock. It has been a source of much regret that I tried to remove the appendix in this case, and I have no doubt that the decision to make the attempt was wrong. Having started, however, in this direction, it was impossible to abandon the operation till the appendix was tied off.

After an experience of more than a hundred cases of appendicitis, most of which have been, especially of late, of the more serious forms, I feel very uncertain as to the best course to pursue in many cases. At times I have opened an abscess about a perforated appendix with the greatest care, doing as little damage as possible to the parts. In many such cases I have found at the autopsy a large and foul appendix, from which great quantities of fæcal matter had been discharged into the abdominal cavity. In other cases I have tied off the appendix securely, and the same fatal result has followed in a few hours. There is no question in my mind that it is always better to remove the appendix in general peritonitis if the manipulations are not too prolonged and severe, and the patient's condition is fair. On the other hand, in localized peritonitis, I think it is very questionable whether it is ever safe to break up the adhesions, in the absence of indications of a general peritonitis. The discouraging fact is that in most of the cases, owing to the false security felt by the attendant, encouraged by those who make light of this most formidable disease, it is impossible to save the patient by any method of treatment. It is therefore incumbent upon those of us who see the deplorable results of delay and doubt to insist as often and as strongly as possible upon the one glaring fact, that in the fulminating cases, early operations are followed by the most brilliant results, and that three, or even two, days' delay is often enough to put the patient beyond the reach of aid.

Dr. Cabot said that he agreed with Dr. Richardson in the conclusions that he derived from the case reported, namely, that it is better, when you open an appendicular abscess which is circumscribed, not to separate adhesions with the object of removing the appendix, but rather to leave it, even at the risk of there being for a time a fæcal fistula. He said that he thought in this way the chance of recovery was better than where the circumscribed abscess was broken into the general peritoneal cavity. Earlier in the disease, when the appendix is tied by light adhesions, he said that he should certainly separate those and remove the appendix, if the patient's strength was such as to allow that length of operation, as it almost always is when the operation is done early.

Dr. A. T. Cabot read a paper on

CHOLECYSTOTOMY.[1]

Dr. Richardson: This is a subject of great interest to me, and I think to every surgeon as well as physician. I had the pleasure of seeing some of Dr. Cabot's operations. In my experience the emergency has never arisen where it has been necessary to cut at all in the biliary passage. To use the knife or any cutting instrument in the region of the hepatic duct, seems to me a very hazardous procedure, no matter whether the cut is made inside or outside the duct, because the relations of the great vessels about the foramen of Winslow are very obscure. I do not think they are constant, and you cannot tell in cutting the hepatic duct how near you may be to those enormous trunks which collect the veins of the portal system. In all the cases I have had of cholecystotomy it has never been necessary to cut. I should think the instrument which Dr. Cabot shows would be very efficacious indeed, and that by that method the danger would be reduced to a minimum. I have always been able to dilate the duct with the finger and by bimanual manipulations to grasp the stone. That leads to the question of the distensibility of these passages. In the common as well as in the hepatic and cystic ducts, I have always been able to reach the stone by digital dilation, and no bad results have followed.

Of the modern operations none are more satisfactory than those upon the gall-bladder. I think that Dr. Cabot's cases, as well as my own, have shown that it is seldom necessary to resort to those dangerous procedures which are described now in all text-books.

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[1] See page 547 of the Journal.

I refer to the establishing of communication between the gall-bladder and intestine where it is impossible to bring the gall-bladder to the abdominal wound. I think in a paper I recently read I was able to show the safety of up-hill drainage by means of gauze. in cases where it was impossible to sew the gall-bladder to the abdominal wound. This method obviated the necessity of establishing such communication. Entero-cholecystotomy may become necessary where there is stricture of the common duct, as in Dr. Elliot's case. In such conditions it is impossible to re-establish the natural channel in any other way than by making a connection between the gall-bladder and duodenum. It seems to me a very good procedure in many cases to extirpate entirely the gall-bladder instead of trying to sew it to the abdominal wound. I feel sure that this is a good method in some cases. Whether we sew the gall-bladder to the wound or extirpate it, we cannot be sure that the bile will flow in its natural channels, at least for some days. There may be a gall-stone still impacted in the common duct, or there may be a swelling due to the irritation of an impacted stone. Stones long impacted in the common duct are always rough, while other stones are smooth. The manipulations to remove a rough stone may be followed by so much swelling that a temporary obstruction to the flow of bile is the result.

I have recently observed an unusual and interesting symptom in advanced cholæmia from gall-stone impaction, to which Dr. Cabot has not referred. The presence of large amounts of sugar in the urine would be remarkable whether coincident with or dependent upon retained bile. Its bearing upon the question of interference is certainly important. It seemed to me that the sugar was due to the presence of bile in the blood, and the immediate relief of the condition of jaundice by removal of the obstructing stones imperative. Five days after the operation there was but a trace of sugar in the urine. The woman died of hæmorrhage from the depths of the wound, which nothing seemed able to prevent. This was the only case in my experience of twenty operations upon the gall-bladder where hæmorrhage has followed, although it is everywhere spoken of as a great danger in operations upon cholæmic patients.

In regard to the best incision, I am strongly convinced that that parallel to the ribs, starting in the right linea semilunaris is the best one, not only because it gives the best view of the parts, but because we can get horizontal or even dependent drainage.

DR. BLAKE: I should like to refer to a case which illustrated the difficulty of determining the necessity for an operation. I saw a woman on Union Park Street, who presented the appearances of advanced malignant disease. In examining the region of the liver I found a pretty solid tumor, ovoid in shape, and in the region of the gall-bladder. I made up my mind that she had distended gall-bladder, and advised her going to the hospital for an operation. She was in such a weak state it seemed hardly justifiable. I mentioned the case to Dr. Cheever, and asked if he would undertake the operation if her condition warranted it. He said he would; but immediately raised the question of hæmorrhage, which was new to me. Much to my surprise, the next day the tumor had entirely disappeared, and the woman said there was no need of going to the hospital. It seemed the obstruction had yielded and the gall-bladder had emptied itself. A few days after, the gall-bladder had begun to fill again, I suppose she has a reservoir full of stones, and one having been displaced, another moved forward and obstructed the flow of bile. At times it is difficult to determine the absolute necessity for operation. I have no doubt that that woman's condition would be benefited by operation, inasmuch as all the stones could be removed at once.

DR. CABOT said, in answer to a question by Dr. Cutler, that one of his cases was one of malignant disease, that died in consequence of that condition, the course of the disease not being in any way affected by the operation. In one other case the patient died of tetanus, as was reported by the attendant physician, Dr. Cabot not seeing her after the operation.

DR. CUTLER: It is rather interesting, because I have seen several cases of this sort; and they have without exception done well. Dr. Cabot's experience, and also Dr. Richardson's, corresponds with that of some of the other operators, foreign ones especially. I have in mind a collection of cases by Professor Riedel, something like fifty cases with ninety per cent. of recoveries. Of those which died, several were carcinomatous; and, of course, the nature of the case was such that no operation was likely to be successful.

There is one other point which was spoken of by Dr. Richardson, that was the spontaneous closing up of the ducts after operative interference. In Professor Riedel's paper, which was a pretty exhaustive treatise, he describes the same thing, that whatever operative manipulation is pursued on the gall-ducts, he sometimes saw the swelling of the membrane inside the gall-passages of sufficient amount to stop the flow of bile or fluid for some little time, so that the wound did not drain into the intestine in a proper way.

With regard to hæmorrhage in icteric cases, all the authors I have read speak of it; and yet Riedel does not seem to have met with such cases at all, or if he has, he does not make it conspicuous in his paper.

As far as the bile going into the peritoneal cavity is concerned, I take it that bile is an aseptic fluid, and there is not any reason why it should cause irritation if the manipulation is short and the peritoneum be thoroughly cleaned. If, however, the case be one of suppurative nature, then I take it the danger is increased. How a catarrhal cholangitis could affect the peritoneum, I do not know. I suppose that also might be a somewhat dangerous thing. So far as the symptoms are concerned from the presence of stone, it is rather difficult sometimes to determine from the attacks of colic the presence of a stone. I understand a catarrhal cholangitis will give rise to much the same symptoms — colic, rise in temperature, a certain amount of chills, and a greater or less enlargement of the liver; and it may drag on for some time. Of course, usually the starting reason for a catarrhal condition is the presence of stones, but they are not always there at the time of the operation.

I also wanted to ask Dr. Cabot whether the matter of icterus existing in a patient to a marked degree had given an unfavorable prognosis. These patients usually are in quite an anæmic condition, and they are somewhat feeble. They seem to resist ordinary inroads rather slightly, so that I should suppose that very marked icterus would be to a certain extent a contraindication; yet I bear in mind a case that Dr. Cabot operated on within two years, where the icterus was quite marked and the patient recovered. Of course, if there be an inflammation around the outside of the ducts or outside of the gall-bladder itself at the same time with the icterus, that would complicate matters very much, and the patient might not recover.

In none of the operated cases I have seen was there more than slight hæmorrhage, and the danger from that did not seem to be considered by the surgeon.

Dr. Cabot said that, in regard to the line of incision, he had only used the oblique incision, which started over the edge of the rectus muscle, and ran outward parallel to the lower edge of the liver. He said that this was convenient, as some portion of the incision was sure to fall over the position of the gall-bladder, — a matter of some importance, for the gall-bladder could often not be felt before the operation, and he had found it in very different positions. In one case, in which the right lobe of the liver was considerably enlarged, it lay almost in the middle line of the abdomen, and in another case, in which the left lobe was so much increased in size as to suggest a malignant growth, the gall-bladder, a little shrunken mass, lay well out under the floating ribs. In either of these cases, the vertical incision along the edge of the rectus would have made the operation a difficult one, on account of the distance the gall-bladder would have lain from the opening.

In regard to crushing stones *in situ*, he said that he had not been fortunate in having cases which seemed to him suitable for this procedure. In the fatal case, in which the stone lay close to the duodenum, it was a hard stone, and would not yield to any force that could be exercised, without danger of injuring the soft parts. Also in the case in which the stone lay in the hepatic duct, it could not be grasped with the fingers. Those were the two cases in which crushing would have been of advantage, if it could have been carried out. Still, he said he should always prefer to remove the stone, if possible, as even after crushing there was a possibility that fragments would obstruct the duct and keep up the jaundice. He said that he had met with one such case in the practice of another surgeon.

He said further that he had not been so successful as Dr. Richardson in dilating the duct to a size sufficient to conduct the operation through it. In several of his cases the duct had been almost obliterated by the contraction of the cicatricial tissue around it. In his experience, the incision through the wall of the duct did not add to the danger of the operation, and certainly afforded a means of removing the stone with less violence and more precision.

In answer to a question of Dr. Cutler, as to whether the existence of icterus made him feel more anxious as to the result of the operation, he said that it certainly did, especially in view of the anorexia which accompanied it.

He also said that he had found in several of his cases a great diminution in the quantity of urine during the existence of the icterus, and this always was a source of great anxiety to him. In several cases in which it existed, he devoted considerable time and care to removing this condition by the administration of large quantities of water, before undertaking the operation; and that he always waited until the quantity of urine was satisfactory before proceeding.

Famine in Russia. — It is reported from unofficial sources that a large part of Russia will probably suffer from famine as much as was the case a year ago.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fifth Annual Meeting, held in Louisville, Ky., November 15, 16, and 17, 1892.

FIRST DAY, MORNING SESSION.

The Association met in the Council Chamber of the City Hall, and was called to order at 9.30 a. m. by the President, Dr. J. McFadden Gaston, of Atlanta, Ga.

AN ADDRESS OF WELCOME

was delivered by Dr. L. S. McMurtry, of Louisville, Chairman of the Committee of Arrangements, the response to which was made by the President.

The first paper read was by Dr. Bedford Brown, of Alexandria, Va., entitled

PERSONAL RECOLLECTIONS OF THE LATE DR. BENJAMIN W. DUDLEY, OF LEXINGTON, KY., AND HIS SURGICAL WORK.

The speaker paid an eloquent tribute to Dr. Dudley, and characterized him as the greatest living lithotomist that this country has ever produced and the most successful in the history of the world. The speaker's close relationship to Dr. Dudley, as private pupil and assistant for two years enabled him to present a clear and faithful sketch of his character and surgical work.

EXPERIENCES IN PELVIC SURGERY.

This was the title of a paper read by Dr. A. V. L. Brokaw, of St. Louis, Mo. Of all the surgical problems difficult to solve, it may be truthfully said, that these met with in the pelvis are most trying. The speaker knew of no surgical work which will compare with the experiences found in the pelvis; a diversity of conditions, complications and unexpected happenings are ever presenting. In a series of many operations but few will be alike in every particular. As his experience became larger, be was free to confess his inability to correctly diagnose the character of abdominal and pelvic troubles. He had diagnosed pus-tubes and found extra-uterine pregnancy, diagnosed extra-uterine pregnancy and found pus; diagnosed ovarian lesions and found the trouble located in the tubes, and *vice versa*. When well-defined pelvic lesions exist, nothing short of radical measures succeed. The one condition above all others where exploratory incision should be adopted was in cases of suspected extra-uterine pregnancy. It was correct and good surgery to open the abdomen and not wait for all the classical signs to appear. The symptoms of extra-uterine pregnancy were so frequently unreliable and obscure, that he was firmly convinced a radical position should be taken.

Dr. William Warren Potter, of Buffalo, desired to endorse that position of the paper pertaining to an early exploratory incision in cases of suspected extra-uterine pregnancy. As regards the use of the sound, he had brought an indictment against it some six or eight years ago, consequently he would not expatiate upon it at this time.

Dr. Joseph Taber Johnson, of Washington, said that as soon as the surgeon diagnosed something in the abdominal cavity that ought not to be there, anatomically or physiologically, and was histologically wrong, it should be removed. An exploratory operation was justifiable in cases of suspected extra-uterine pregnancy, and the surgeon should base his further procedures upon what he finds after making the exploration.

Dr. W. E. B. Davis, of Birmingham, Ala., thought the pendulum relative to surgical interference had swung a little too far. He believed that a great many of the so-called "tinkerers," who succeeded in relieving their patients, did not accomplish it so much by the local treatment they used as by having patients under their care, keeping the bowels open, giving constitutional treatment, seeing them regularly, etc. While, by so doing, they might not be cured in all cases, they were greatly benefited. Regarding the diagnosis, surgeons who were opening the abdomen constantly would rarely give a positive diagnosis in the case.

DR. BROKAW, in closing the discussion, said that in every case of suspected extra-uterine pregnancy it was good surgery to make an exploratory incision and operate before rupture took place.

DR. CORNELIUS KOLLOCK, of Cheraw, S. C., read a paper on

CRANIOTOMY UPON THE LIVING FŒTUS IS NOT JUSTIFIABLE.

He said this operation implied the death of the fœtus and a frightful mutilation of its body, often accompanied by serious lacerations of the vagina and adjacent tissues of the mother. Recent advances in obstetrics, gynecology and abdominal surgery contribute largely to a demonstration of the fact that a timely resort to Cæsarean section in pelvic obstruction is the great factor to success. In Germany, out of 149 cases of contracted pelvis, 109 women and 136 children were saved. If craniotomy had been done 149 children would have been destroyed and probably fifty women (perhaps more) making a sacrifice of at least 199 lives. In many of these cases exhaustion had supervened and septic influences had already been excited. This, added to a tardy disposition to union by first intention, caused by contusion of the parts involved in the uterine incision, lessened materially the women's chances for recovery. Zweiffel was successful in 29 cases out of 30; Schauta did Cæsarean section 15 times without a single death. Recently, in 18 operations done in Louisville 14 were successful. Of eight in Ohio six were successful. Dr. Price has done Cæsarean section a number of times successfully. Dr Kollock is firmly convinced that 85 or 90 per cent. of the cases of obstruction of the pelvis forbidding the delivery of the fœtus in the natural way, might be saved by a timely resort to Cæsarean section.

DR. HUNTER MCGUIRE, of Richmond, favored Cæsarean section. Some time ago he saw the report of a case by Dr. Thomas, of New York, where, in doing Cæsarean section, he proposed to take the uterus out of the cavity, and then open it. He thought this added very much to the danger of the operation, necessitating a larger opening, exposing the cavity of the abdomen a long time to the atmosphere, etc. He does not favor this procedure.

DR. L. S. MCMURTRY, of Louisville, said that a few years ago it would have been impossible for one to have presented the views that Dr. Kollock had without meeting with violent opposition. Cæsarean section was then regarded as an extremely heroic operation, and until recent years the mortality therefrom was very great; but since it has been carried to the present degree of perfection by Sænger and others it has strengthened the opinions of abdominal surgeons, who now consider it preferable to craniotomy. Within the last two months symphysiotomy had been brought before the profession, and practised as an alternative in certain cases for Cæsarean section. What the future of the former operation is to be we were not prepared to say.

DR. ARCH DIXON, of Henderson, Ky., advised Cæsarean section in a case in which he was called in consultation, but the family physician insisted upon his doing craniotomy, which was done; and while every precaution was taken with regard to rendering aseptic the field of operation, the woman developed pelvic peritonitis and died within four days. He believed a Porro operation would have saved the life of the woman and perhaps that of the child.

DR. W. D. HAGGARD, of Nashville, read a paper on

A CASE OF EXTENSIVE HEMATOCELE RESULTING FROM TUBAL PREGNANCY RUPTURING INTO THE BROAD LIGAMENT.

Although the fœtus was not found, that it was a case of tubal pregnancy with rupture into the broad ligament is clearly established by the clinical history and post-mortem appearances, summarized as follows: (1) Patient confessed having had intra-pelvic trouble previously (presumably gonorrhœal), for which she was treated locally. (2) At the time of the accident, caused from jumping from a wagon, her menses were past due. As to how long, her statements were misleading. (3) There was a fitful yet persistent flow from the uterus during her entire illness. (4) Paroxysmal, colicky pains in lower abdominal and pelvic regions of frequent occurrence. (5) Existence of a tumor above the pubes, which she probably mistook for a gravid uterus. (6) Persistent refusal to submit to a digital examination, probably fearing the detection of her pregnant state. The post-mortem appearances were: (1) Enlarged and softened condition of the uterus with a patulous os, showing escape of a sero-sanguinal, stringy fluid. (2) Enlargement of the left tube with a well-defined cavity from which the fruit sac escaped. (3) Existence of a deciduous membrane, as revealed by the microscope. (4) Discoloration of rectum, produced by blood dissection around it, producing constriction and partial death.

DR. S. M. HOGAN, of Union Springs, Ala., reported a case of

FIBROID TUMOR OF THE UTERUS; PREGNANCY; RUPTURE ABOUT THE FOURTH MONTH; OPERATION; SPECIMEN.

The woman, colored, was twenty-eight years of age, and from the symptoms and history of the case, he was satisfied there was a rupture, and the probabilities were that it was about the fourth month of gestation. He was also of the opinion that the rupture did not immediately destroy the fœtus, that it continued to grow in its abnormal position. The speaker felt sure that if he had operated on the case immediately after rupture, the patient's life would have been saved. In all cases of rupture he would advise Porro's operation to be done immediately; that in all cases, where the tumor is large or multiple, intramural or subperitoneal, with a sacciform dilatation of the posterior segment of the uterus, and the os above the pubic bone, or inaccessible, the same operation should be done. In all cases where the tumor is in front of the child, or blocking the passage it should be done, provided the pregnancy has advanced to the full time, or there should be hæmorrhage or rupture of the membranes, indicating that an abortion or miscarriage is imminent.

(*To be continued.*)

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NOTIFICATION OF INFECTIOUS DISEASES.

The laws requiring a notice of the occurrence of dangerous infectious diseases, to be furnished by the householder and by the attending physician are among the older sanitary laws of Massachusetts. That which relates to the householder was enacted in 1792, and that which relates to the physician in 1827. For many years, except in time of epidemics, these statutes were practically null and void, and but little attention was paid to their enforcement, especially in towns which neglected to choose boards of health.

The law upon this point has been amended from time to time, as occasion required. At first, the only disease specified in the act was small-pox, the interpretation of the term "other diseases dangerous to public health" being left to the discretion of the local boards of health. In 1884 diphtheria and scarlet fever were specified by an amendment, and the householder was required to disinfect his rooms "in a manner approved by the board of health." Another amendment required the keeping of records of such notices by the local boards of health. These records have proved extremely valuable for the purpose of tracing the course of epidemics in cities and towns and devising means for preventing their spread.

Various attempts have been made in England to enact a similar statute, but these efforts were unsuccessful until 1889. By the terms of the law then enacted the notification of infectious diseases to the sanitary authority was made compulsory throughout London, while the principle of local option was applied to all other districts.

During the year in which this bill was under consideration by Parliament, intense opposition had been manifested by many of the members of the medical profession throughout England. Of its final passage, Dr. Farquharson says: "Expecting trouble in the future, Government craftily postponed its final appearance till the last possible moment, and by that time grouse and holiday air had been too much for its opponents, and it went through without a jarring word; and now, secure from controversy and hostile divisions and professional disapproval, it has peacefully become an act, and rests its base of operations firmly upon legal sanction; and although the rôle of the prophet is proverbially a dangerous one, I may safely predict that this little bit of unobtrusive work marks an epoch-making point in sanitary progress, and will not only improve the public health, but directly save many lives."

The advantages of a system of notification of infectious diseases are sufficiently obvious. An epidemic of diphtheria, for example, springs up in some remote district of the State. How it came there may at first seem a mystery. But there it is; and though we may not shut the door to keep it out, we can at least keep it in, and prevent it from originating fresh foci of infection and danger. And for this purpose the local board of health is called in, and upon it is placed the responsibility of seeing that all necessary precautions for preventing the further spread of the disease are carried out.

The objections to this important measure in England, were two-fold, and singularly enough came very largely from the medical profession. The first objection took the lofty ground of defending personal liberty, and protested vigorously against the so-called meddlesome intrusion of sanitary regulations into the castellated sanctity of the Englishman's home. "By all means" said Dr. Farquharson "let fanatics of this sort catch any disease they like, so long as they keep it to themselves; but they cannot be surprised if others object to be drenched with infection in order to minister to their fads. Argument is thrown away upon those who hold abstract views upon the right of every rational being to do as he pleases; and all that we can do, after having effectually pointed out the error of their ways, is to appeal to the legislature to protect us from the danger of having such unsatisfactory neighbors."

The second objection came from those members of the medical profession who were strongly in favor of notification, but who believed that it should be made by the householder only. They objected to the dual notification, as they termed it, because it would impair the confidential relations between physician and patient; and, secondly, because the physician's primary intervention would prevent his being called in at all, and hence would result in an actual increase of infection in those towns where the system was in force.

The fallacy of these objections has been abundantly proven by the three years' experience of the towns of England where the notification act has been adopted. The notification of each case is made by a certificate by the attending physician, for which a fee of two shillings and six pence is paid, except in a case where the person giving the certificate is the medical officer of a public institution, when the fee is one shilling.

The diseases to which this act applies are small-pox, cholera, diphtheria, membranous croup, erysipelas, scarlet fever, typhus, typhoid and puerperal fever, and any other infectious disease which may be added to this list by the sanitary authority of a district.

It is probable that the act will in a few years be made compulsory for all parts of Great Britain.

Up to the present year (1892), the act had been adopted in 1,051 districts, having an aggregate population of nearly sixteen millions, to which should be added the population of London and fifty towns in which local acts made it compulsory, making in all a population of 24,012,399 over which the act was in force, out of a total of 29,001,018. In a few towns the sanitary authorities had availed themselves of the power to require notification in the case of measles, rötheln, chickenpox and hydrophobia.

In our own State of Massachusetts, there can be no doubt that the law relative to notification has been productive of excellent results in the prevention of disease, especially in the cities and large towns. It has furnished the local boards of health with the necessary information relative to the origin of outbreaks of infectious disease, and in many instances enabled them to take timely steps for preventing its further spread.

The recent law requiring local boards to keep records upon this important matter, has furnished information as to the prevalence of certain diseases in the principal cities and towns of the State. In the smaller towns it is probable that instances of failure to comply with the provisions of the statute are much more frequent than they are in the cities.

In the report of the State Board of Health just published, a table is presented for the first time, giving a summary of the records of such local boards of health as could be obtained in this direction.

From this table it appears that the number of reported cases and deaths and the percentages of deaths to reported cases was as follows:

Reported cases of diphtheria,	2,444
Reported deaths from diphtheria,	575
Percentage of deaths to reported cases,	23.5
Reported cases of scarlet fever,	4,517
Reported deaths from scarlet fever,	151
Percentage of deaths to reported cases,	3.34
Reported cases of typhoid fever,	2,414
Reported deaths from typhoid fever,	460
Percentage of deaths to reported cases.	19.05
Reported cases of measles,	5,861
Reported deaths from measles,	84
Percentage of deaths to reported cases,	1.4

The foregoing percentages may be considered as somewhat larger than the actual percentages of fatalities from these diseases during the year, for the reason that the number of deaths is known, while the number of reported cases is probably somewhat less than the actual number.

The two diseases, scarlet fever and measles, undoubtedly prevailed in an unusually benign form, since the percentage of fatality from these diseases (3.3 and 1.4) is considerably less than the average fatality in a long period of years.

Similar tables and percentages have recently been compiled for England for 1891, in which the ratio of deaths to reported cases was slightly greater in the case of each disease than those of Massachusetts for the same year.

IS ALCOHOLISM INCREASING AMONG AMERICAN WOMEN?

In the last number of the *North American Review* an article of interest to medical men by Dr. T. D. Crothers, discusses the question "Is alcoholism increasing among American women?"

He decides that inebriety among women is on the decrease. The great majority of cases of drunkenness in females are seen in connection with profound physical and mental degeneration. Female drunkards are "the mere wreckage of worn-out foreign families far down on the road to race extinction. . . . Drunkenness, prostitution, and lawlessness of all forms in women are unmistakable signs of disease and early dissolution. Only a small minority of American women are found at this level. On the street at nightfall, in large cities and low circles, a certain number of inebriate women may be seen; but these are largely demented beings of foreign birth, paupers in mind and body."

Among the higher ranks of society, inebriety in women is of very exceptional occurrence. Inebriate women are concealed as skeletons in households. When spirits are used for any length of time, the disorders take on a periodical form, in which hysteria and other emotional symptoms are prominent. The use of alcohol in women very soon merges into some other disorder, usually drug-taking, and spirits are abandoned.

Direct alcoholic heredity always leaves the females with defective vital force and unstable brain vigor, also with weak power of control. The strain of the reproductive period brings on central exhaustion, with strong tendency to organic disease. The female neurotic may use alcohol for the exhilaration which it brings, but only until she discovers some other drug with more pleasing effects.

"The emancipation of women from the slavery of caste and ignorance and the steady upward movement in mental and physical development will prevent any general increase in alcoholism or inebriety."

Dr. Crothers alludes to the fact that temperance reform movements are largely sustained by women. "A recent writer has said that over half a million women are active workers in the temperance field, and not one per cent. of the number have been or are users of alcohol or opium. Among men, a very large percentage of active temperance workers are reformed inebriates. One reason for this is, that women alcoholics and opium-takers quickly disappear from society, and shrink from all publicity or possible reference to their past. Another reason is advanced that women are the greatest possible sufferers from inebriety, and hence are more sensitive to the dangers of drink, and turn to reform movements for relief."

With regard to the consumption of patent medicines composed largely of alcohol, it has been found that the sale of such medicines in this country is confined almost exclusively to moderate and excessive drinking men; the women of this country are not large takers of patent medicines, as compared with the women of England.

"For several years past a noticeable falling off in the sale of spirits to families in cases and packages has been apparent in all large towns and cities. The family trade of stronger liquors and wines is changing to light beers and mineral waters. A rapidly increasing demand for table mineral waters has sprang up, and every drug and grocery store is supplying this want. This is limited to the homes of the upper and middle classes, and such waters are consumed by the women as well as by the men."

The writer concludes that the American woman has never been a straggler in the race-march, but is always in the van; and a wide survey of the field will show that inebriety of all forms must of necessity be diminishing.

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MEDICAL NOTES.

The American Public Health Association adjourned on Saturday, after the election of Dr. S. H. Durgin, of Boston, president.

The Georgia Board of Health. — A bill before the Georgia legislature providing for a State Board of Health appears to meet such opposition that it will probably not pass. The objection to the bill is that the Board is given too great power. The State health-officer would be able to quarantine a town in case of any infectious disease in it.

The President's Message and Immigration. — The President in his message to Congress takes up the subject of immigration, which has been much discussed since the recent cholera fright. He strongly recommends steps for the restriction of immigration, and also that quarantine matters be placed under federal control. Both of these conclusions are in accord with most of the opinions recently expressed by different writers, and, as far as can be learned, with the evidence being taken by the senatorial committee in session in New York.

Vivisection. — The Association for the Advancement of Medicine by Research, in England, have decided to publish a work describing the leading experimental researches to which physiology, medicine and surgery have been indebted for the means of progress in the healing art. It will be written by different authorities, and is intended to offset the numerous publications of the anti-vivisectionists.

A Sudden Outbreak of Cholera. — The rapidity with which an epidemic of cholera may attack and decimate a community is described by T. E. Heenan, United States Consul at Odessa, in a letter to the Secretary of State, in which he says that at Ashabad the cholera had almost disappeared early in August, and the event was celebrated with much rejoicing on the anniversary of the Emperor's name-day, which occurs in that month. The governor-general gave a dinner to which he invited a numerous company, and the various regiments were granted extra rations. Of the numerous guests who attended that dinner, one-half died within twenty-four hours. A military band of about fifty men who played during that fatal dinner lost forty of their number with cholera, and only ten of the men reached camp that night. One regiment lost half its men and nine officers before the next morning, and within forty-eight hours 1,300 people died with cholera. The cause of this outbreak was traced to a small stream of water which supplied the town. Four days previously the authorities were informed that cholera had broken out at a small Turkoman village situated on the banks of this stream about four miles from Ashabad. The inhabitants of this village were ordered to move their kilrtkas several miles back on the hills, which they did. On the day before the reappearance of the cholera at Ashabad a very heavy rainstorm occurred which washed the banks of the river and swept refuse and other matter from the abandoned village into the stream, and this matter was carried by the water into the city and distributed to all parts of the town by the numerous open canals through which the inhabitants were supplied with water. The population of Ashabad was not more than 13,000 of which ten per cent. died within forty-eight hours.

BOSTON AND NEW ENGLAND.

The River Charles.—Mayor Matthews, of Boston, in his letter accepting the Democratic nomination for mayor, says that "the Charles River, throughout its length, is a menace to the public health. The city is now engaged in the work of removing all the drains and sewers that enter into it from Boston territory; but the coöperation of the other cities and towns along its banks, and probably the intervention of the State will be necessary before the evil can be measurably remedied."

The Harvard Dental School. — At the meeting held last week of persons interested in the erection of a new building for the Dental School of Harvard University, the following executive committee was appointed to further the cause which those who called the meeting had at heart: Hon. Roger Wolcott, Col. Henry Lee, Dr. J. Collins Warren, Rev. E. A. Horton, Dr. Fred. C. Shattuck, Col. W. A. Tower, Hon. Oliver Ames, Dr. Morrill Wyman, Dr. B. E. Cotting, Hon. Henry H. Sprague, Hon. S. N. Aldrich, A. Shuman, Dr. H. P. Walcott, Col. Albert A. Pope, Hon. Martin Brimmer, William Endicott, Jr., E. W. Hooper, Dr. T. H. Chandler, Dr. Thomas Fillebrown, Dr. Eugene H. Smith, Dr. Dwight M. Clapp, Dr. Washburn E. Page, Dr. William H. Potter.

Typhoid Fever from Milk. — From August 20th to September 10th thirty-five cases of typhoid fever were reported to the Somerville Board of Health, which, after an investigation, came to an opinion that the epidemic was probably due to the use of infected milk which had been accidentally contaminated by a local milkman who was suffering from typhoid fever.

The Elliot City Hospital, Keene, N. H., was dedicated September 21st. The building and spacious grounds was the gift of Hon. J. H. Elliot, of Keene. The interior is very conveniently arranged, having four small wards and several rooms for private patients, and an excellent operating-room. The consulting staff consists of Dr. Geo. B. Twitchell of Keene, Drs. G. W. Gay and J. W. Elliot of Boston. The visiting staff is composed of Drs. Ira J. Prouty, H. K. Faulkner, J. B. Hyland, and G. C. Hill. Miss Elizabeth Howe is superintendent of nurses and of the training-school. An institution of this kind has long been needed in southwestern New Hampshire.

NEW YORK.

MEDICAL PAVILION AT THE ROOSEVELT HOSPITAL. — At the meeting of the Board of Trustees of Roosevelt Hospital, held November 29th, it was announced that Mrs. Elizabeth Anderson had given $350,000 to the hospital for the erection and maintenance of a medical pavilion to be known as the Milbank Memorial, in honor of her parents Jeremiah Milbank and his wife. Provision is to be made for sixty beds, and there will also be a handsome amphitheatre for clinical lectures. Mrs. Anderson stipulates that Dr. Francis P. Kinnicutt, under whose supervision the building is to be erected, shall be the director of the pavilion during his life, and that after his death or resignation his successor shall be nominated by the Faculty of the Medical Department of Columbia College.

NEW HOSPITAL FOR ST. LUKE'S HOSPITAL. — At a meeting of the St. Luke's Hospital Association, held November 27th, it was announced that the building committee, after conferring with the Medical Board, had selected the plan of Mr. Ernest Flagg for the new hospital buildings, as the best of those offered in competition. It embodies the pavilion system, and is regarded as eminently satisfactory from an architectural point of view.

HYDROPHOBIA. — A party of ten patients from Danville, Va., have recently been received for treatment at the Pasteur Institute, all of whom were bitten by a Skye terrier which caused the death of a boy, Curtis Lee, aged seven years, in the latter part of November.

TYPHUS FEVER. — During the past week two deaths have occurred from typhus fever, both patients being men who had been sleeping in down-town lodging-houses. The Board of Health has as yet been unable to trace the origin of the disease, or any connection between the two cases; but it is feared that there may be other cases of typhus in the city, as it is believed that the two patients contracted the disease from the same source.

THE NEW YORK COLLEGE OF PHARMACY, located since 1879 on East 23d Street, which has for some time past been contemplating a move uptown, has now secured a plot of ground 75 by 100 feet, on 68th Street, between Columbus Avenue and the Boulevard, and will erect a handsome and commodious building upon it. The architect's plans have been accepted, and it is expected that the new quarters will be ready for occupancy next autumn. There are now 150 members in the senior class and 207 in the junior, and accommodations will be provided for over 400 students in the new building. The cost of the latter, including the purchase of the site, is estimated at $150,000, and the present building and site are valued at $125,000.

Miscellany.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

ON November 29th the corner-stone of the new building for the New York Post-Graduate Medical School and Hospital, at the corner of 20th Street and Second Avenue, was laid with appropriate ceremonies. A tent had been erected for the accommodation of those attending; but as the weather was very chilly and damp the exercises were concluded in the present lecture-room, on 20th Street, near by.

Before the zinc box containing the records of the institution was deposited, the President, Dr. D. B. St. John Roosa, gave a history of the Post-Graduate, in the course of which he said: "Prior to 1882 physicians from all parts of this country and from Canada and the West Indies were constantly coming to New York for the purpose of getting advanced and special instruction in medicine and surgery. In 1874 an attempt was made in one of the medical colleges of the city to provide special instruction for these men by giving what was called post-graduate lectures. But those were too few, and too few patients were exhibited at one time, to be of any great service. The Post-Graduate Faculty of that institution (the University Medical School) on the 4th of April, 1882, giving up the work of teaching graduates and under-graduates in the same branches, determined to resign from that institution, and to found what was to be termed a post-graduate school. This was the beginning of this institution. The names of those who thus resigned and who thus founded this school are to-day deposited in this corner-stone. Like many others in the world, they builded far better than they knew. They little dreamed, much as they knew, of the necessity of such a post-graduate school — how great it really was. It was soon seen to be necessary that a hospital, as well as a dispensary, should be an integral part of the plan. The first hospital was one for infants under three years of age. In due time the women's ward, the men's ward, the orthopædic ward, followed that for the babies, until a fully equipped hospital, largely supported by the benevolence of New York, is under our own roof. It is to give room for the work of this series of hospitals that we are about to erect this building."

The principal address of the day was delivered by Dr. T. Gaillard Thomas. A portion of it, was devoted to the subject of the sacrificing of the health interests of the public to political ends, and was as follows: "As the fitness of the church for dealing with the moral problems of our nation is recognized, so would one think that the capacity of medicine to deal with its questions of health would be admitted beyond question. That no such admission is really and practically made among us, no more striking proof could be given than the fact that in the most important medical offices in

New York the near successors of two intelligent and incorruptible officers, Vanderpoel and Chandler, are a physician whose name is entirely unknown in the annals of hygienic medicine and a merchant whose knowledge of medicine is presumably no greater than that of his class in general. And yet to these men, ignoring the opinions, disregarding the sentiments, and entirely despising the inalienable rights of medicine, those who have the responsibilities of the government of this great seaport, coolly intrust its sanitary interests. Far be it from me to impugn the efforts or the motives of the two officials of whom I have made mention. So far from wishing to do so, I boldly take the unpopular stand that the attacks which have been made upon them are greatly to be deplored as unjust aspersions upon men who have done their best with the means at their command for the public good. They both deserve the gratitude of this city for their energy, their devotion, and their untiring labors. It is not these men who are at fault in any way. The fault lies with the deplorable state of politics with us, which has made the great sanitary interest of this metropolis spoils of political success, to be given as rewards of fealty."

Dr. Thomas said, in conclusion: "The time has surely arrived, when a Secretary of Public Health, chosen from the ranks of medicine, should constitute one of the members of the cabinet of the President of the United States; when Quarantine, with the host of questions which cluster around that word, should be a National, and not a State, function, and when medical men should be so thoroughly informed upon hygiene by competent instructors in all our colleges that no political body in our land would dare to stultify itself and insult public opinion by placing a merchant at the head of the Health Board of one of the largest seaports of world."

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A PAPER HOSPITAL.

A description of a portable paper hospital is given by the editor of the *Popular Science Monthly*, in connection with an article by M. Emmanuel Ratoin. Its entire dimensions are sixteen by five metres, and it will accommodate twenty beds. Folded up, it forms a load for three two-horse trucks. When it is set up, the three trucks, the length of which is equal to the width of the building, are brought up so as to be parallel in line and a few metres distant from one another, and are arranged so that their floors, which are to form a part of the floor of the building, shall be on a level. Light T-shaped joists of iron are stretched across the intervals, supported by trestles when necessary, to receive the paper panels completing the floor. The element of the construction is a panel, usually three metres by one metre and sixty centimetres, and a tubular beam ten centimetres in thickness and composed of two walls of pressed paper four millimetres in thickness, fixed upon a frame likewise of paper. The pieces composing this frame are V or U shaped. The panels are easily handled, and they fit at their edges so as to constitute a wall. The roof is composed of similar panels fastened in pairs. The two parallel walls are connected by a number of tie-beams composed of thin wire of galvanized iron. The floor is also composed of paper panels about a metre and a half square. By means of double walls, inclosing a cushion of air, such a building will well resist variations of temperature outside. The interior of the building is without visible framework and without posts. The building is closely jointed and might be varnished, making it easy to wash and disinfect. The windows are of wire gauze covered with a transparent coating. Ventilation is obtained through holes bored at the angle between the ceiling and the walls.

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THERAPEUTIC NOTES.

Europhen [1] is the name given to another of the now numerous substitutes for iodoform. Chemically it is "isobutyl-ortho cresol iodide," and is the product of the action of iodine upon a compound body of the phenol type. It is said to contain 27.6 per cent. of iodine, and is a yellow amorphous powder, with an aromatic odor recalling that of saffron. It is insoluble in water, and care must be taken when solutions are made in alcohol, ether, chloroform, etc., that they be made in the cold, as heat decomposes it, setting iodine free. When applied to dry surfaces, it appears to be inert; and in general it acts only when in contact with secreting surfaces, where it is decomposed and iodine liberated slowly. Its advantages over iodoform are its freedom from disagreeable odor and non-toxic effects, that it does not cake so easily, and is so light that a given weight will cover five times as much surface.

Abscess of the Maxillary Sinus. — Grant [2] recommends exploratory puncture through the inferior meatus with a straight trocar and steel canula three inches in length and a millimetre and a half in diameter, its proximal extremity funnel-shaped to receive the nozzle of an ordinary syringe after withdrawal of the trocar, for the purpose of washing the sinus with a warm, clear, aseptic solution, usually of borax and boric acid.

Epidermin. [3] — Kohn has made and used in Hebra's clinic, in Vienna, a vehicle for different substances as a local application. It is made by working pure beeswax with the aid of water and glycerine into a liniment, which forms a milky, semi-fluid mass, which applied to the skin dries in a few minutes to an elastic film which adheres closely and retains its elasticity. It is soluble in water, and is easily removed by water.

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[1] Squibb's Ephemnis.
[2] Journal of Laryngology and Rhinology.
[3] Bulletin of Pharmacy.

METEOROLOGICAL RECORD,

For the week ending November 26, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...20	30.11	40	46	35	73	50	62	N.W.	N.W.	10	14	F.	C.	
M..21	30.08	40	50	30	67	70	68	W.	S.W.	9	8	C.	O.	
T..22	29.90	37	42	32	67	50	58	W.	W.	15	18	C.	C.	
W.23	29.79	29	34	21	63	53	58	W.	W.	14	8	C.	C.	
T..24	29.80	26	33	20	58	57	58	W.	W.	16	14	C.	C.	
F..25	30.01	32	40	24	66	56	61	N.W.	N.W.	16	12	F.	O.	
S..26	30.26	34	41	26	77	68	72	N.W.	N.	9	3	C.	O.	
☞	29.99	34	41	27	67	58	62							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 26, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	1,827,396	673	210	14.55	21.45	1.80	6.00	1.20
Chicago . . .	1,250,000	389	140	19.98	19.44	1.62	12.69	2.16
Philadelphia .	1,092,168	—	—	—	—	—	—	—
Brooklyn . .	955,333	308	107	12.76	19.52	.64	6.72	1.92
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	186	45	10.80	14.58	1.08	4.32	2.70
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	101	25	10.89	14.85	—	6.93	2.97
Cleveland . .	281,353	79	24	15.21	12.65	1.27	10.16	1.27
Pittsburg . .	255,000	60	22	11.66	23.33	—	11.66	—
Milwaukee . .	234,440	70	29	17.16	17.16	2.86	9.91	2.86
Washington .	230,360	97	31	11.33	11.33	1.03	4.12	4.12
Nashville . .	87,754	24	6	8.32	8.32	—	4.16	—
Charleston . .	56,048	35	9	8.58	8.58	5.72	—	—
Portland . . .	40,000	14	1	—	7.14	—	—	—
Worcester . .	92,313	28	9	14.28	10.71	3.57	3.57	—
Lowell . . .	82,455	31	10	9.69	25.84	3.23	3.23	3.23
Fall River . .	82,128	35	10	22.88	14.30	—	8.58	5.72
Cambridge . .	74,644	17	4	29.04	5.88	—	23.52	—
Lynn	60,809	16	4	12.50	12.50	—	6.25	—
Springfield . .	47,052	14	4	28.56	14.28	—	28.56	—
Lawrence . .	45,910	—	—	—	—	—	—	—
New Bedford .	44,947	15	4	—	33.33	—	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	—	—	—	—	—	—	—
Salem	31,495	10	2	20.00	20.00	—	—	20.00
Haverhill . .	30,065	—	—	—	—	—	—	—
Chelsea . . .	29,479	8	2	—	25.00	—	—	—
Malden . . .	27,252	4	0	—	—	—	—	—
Newton . . .	26,498	5	1	—	20.00	—	—	—
Taunton . . .	26,464	8	2	—	12.50	—	—	—
Gloucester . .	26,008	3	1	—	—	—	—	—
Fitchburg . .	25,444	—	—	—	—	—	—	—
Waltham . .	20,942	2	0	—	—	—	—	—
Quincy . . .	18,669	9	3	11.11	—	—	—	—
Pittsfield . .	18,294	3	1	33.33	66.66	—	33.33	—
Northampton .	15,684	3	1	—	33.33	—	—	—
Everett . . .	14,745	3	2	—	—	—	—	—
Newburyport .	14,031	3	0	—	—	—	—	—
Amesbury . .	13,561	1	0	—	—	—	—	—

Deaths reported 2,166: under five years of age 711; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 411, acute lung diseases 406, consumption 250, diphtheria and croup 165, typhoid fever 44, diarrhœal diseases 30, scarlet fever 30. whooping-cough 13, erysipelas 13, measles 12, cerebro-spinal meningitis 9, malarial fever 3, small-pox 2.

From scarlet fever New York 9, Brooklyn 7, Chicago, Boston and Fall River 3 each, Cleveland 2, Cincinnati, Milwaukee and Quincy 1 each. From whooping-cough New York 6, Brooklyn 4, Chicago, Washington and Cambridge 1 each. From erysipelas New York 8, Chicago 2, Brooklyn, Washington and Lynn 1 each. From measles New York 7, Chicago 4, Boston 1. From cerebro-spinal meningitis NewYork and Chicago 3 each, Brooklyn, Boston and Worcester 1 each. From malarial fevers New York 2, Brooklyn, Charleston and Worcester 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,419, for the week ending November 12th, the death-rate was 19.5. Deaths reported 3,817: acute diseases of the respiratory organs (London) 357, measles 139, diphtheria 81, scarlet fever 74, whooping-cough 55, diarrhœa 46, fever 34, small-pox (Sheffield 3, Huddersfield and Halifax 1 each) 5.

The death-rates ranged from 13.0 in Leicester to 29.6 in Preston; Birmingham 21.8, Bradford 19.3, Croydon 23.6, Gateshead 16.5, Hull 26.7, Leeds 18.2, Liverpool 21.4, London 18.8, Manchester 22.6, Newcastle-on-Tyne 17.1, Nottingham 17.9, Plymouth 20.1, Portsmouth 17.8, Sunderland 18.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 26, 1892, TO DECEMBER 2, 1892.

By direction of the Secretary of War, paragraph 3, of Special Orders, No. 232, October 3, 1892, from this office, directing Major Robert M. O'Reilly, surgeon, U. S. A., to report for duty as attending surgeon, in this city on December 15, 1892, is amended to direct him to so report on January 15, 1893.

Captain Henry P. Birmingham, assistant surgeon, U. S. A., is relieved from duty at Boise Barracks, Idaho, to take effect upon the expiration of his present leave of absence, and will then report in person to the commanding officer, Fort Grant, A. T., for duty at that post.

The ordinary leave of absence granted Captain Eugene L. Swift, assistant surgeon, U. S. A., is changed to leave of absence on surgeon's certificate of disability, as extended as such two months.

The extension of leave of absence granted First-Lieut. Samuel R. Dunlop, assistant surgeon, U. S. A., is further extended one month.

So much of Par. 2, S. O. 232, A. G. O., October 3, 1892, as directs Captain Junius L. Powell, assistant surgeon, U. S. A., to repair to Fort Monroe, Va., for duty at that post, is revoked, and he will, upon the final abandonment of Fort Randall, S. D., report in person to the commanding officer, Jackson Barracks, La., for duty at that post, relieving Captain William C. Borden, assistant surgeon. Captain Borden, on being relieved by Captain Powell, will report in person to the commanding officer, Fort Adams, R. I., for duty at that post.

Major William H Gardner, surgeon, U. S. A., is relieved from further duty at Angel Island, Cal., and will report in person to the commanding officer, Fort Keogh, Montana, for duty at that post.

SOCIETY NOTICE.

Boston Society for Medical Improvement. — A regular meeting of the Society will be held on Monday, December 12, 1892, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. M. H. Richardson: "Cases of Chronic Intestinal Obstruction."

Dr. J. C. Munro: "Some Indications for External Urethrotomy."

Dr. A. T. Cabot will show specimens from a "Case of Pistol-shot Wound of the Brain."

Election of new members at 9 P. M. Election by ballot of committee to nominate officers of the Society for 1893.

G. G. Sears, M.D., *Secretary.*

APPOINTMENTS.

At a meeting of the Trustees of the Free Hospital for Women, held October 27, 1892, Dr. F. C. Shattuck and Dr. M. H. Richardson were appointed members of the consulting board of that institution.

Dr. Henry T. Byford has been elected to the Chair of Gynecology in the College of Physicians and Surgeons, Chicago, to fill the vacancy made by the death of Dr. A. Reeves Jackson.

At a meeting of the Board of Trustees of the Jefferson Medical College, Philadelphia, held on Wednesday, November 30, 1892, Dr. G. E. de Schweinitz, was, on the unanimous recommendation of the Faculty, elected Clinical Professor of Ophthalmology. At the time of election, Dr. de Schweinitz was Professor of Ophthalmology in the Philadelphia Polyclinic and Lecturer on Medical Ophthalmoscopy in the University of Pennsylvania.

RECENT DEATHS.

James Rosebrugh Leaming, M.D., died in New York, December 5th, aged seventy-two years. He was widely known as an authority and author on diseases of the chest, but for some years he has not been in active practice. At the time of his death he was consulting physician in St. Luke's Hospital and Professor Emeritus in the Women's Medical College, and the New York Policlinic.

George H. Bosley, M.D., of New York, died December 5th, aged fifty years. He served during the war as assistant surgeon and later, organized and took charge, of the Fever Hospital on Hart's Island. He also served for several years in the outdoor department of Bellevue Hospital.

W. W. Wilcomb, M.D. (Dart , 1887), died at Suncook, N. H., December 1st, aged twenty-seven years.

BOOKS AND PAMPHLETS RECEIVED.

An Operation for the Radical Cure of Stricture of the Lachrymal Duct, with Description of a Stricturotome. By Charles Hermon Thomas, M.D., of Philadelphia. Reprint. 1892.

A Treatise on Diseases of the Rectum, Anus and Sigmoid Flexure. By Joseph M. Matthews, M.D., Professor of Surgery, Kentucky School of Medicine, etc. New York: D. Appleton & Co. 1892.

Text-book of Nervous Diseases, being a Compendium for the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D., Professor of Nervous and Mental Diseases in the New York Post-Graduate Medical School, and in Dartmouth Medical College, etc New York: William Wood & Co. 1892.

Original Articles.

INTERMITTENT FEVER IN BROOKLINE.[1]

BY H. LINCOLN CHASE, M.D., BROOKLINE, MASS.

The report for 1890, of the State Board of Health, contains a valuable paper entitled "Intermittent Fever in Massachusetts," in which the writer, Dr. C. H. Cook of Natick, aptly says: "Intermittent fever in Massachusetts has reached its third stage. The first stage was one of skepticism, when no one, save those who were brought in contact with the disease, believed it to be indigenous as an epidemic in any part of the State; and, at the very first, even physicians who were having professional experience with it might properly have questioned their own conclusions as to its origin. The second stage was one of surprise that it should appear in *our* city or town, which heretofore had been supposed to be free from conditions favorable to its development. The third and present stage is one of questioning and expectation: questioning as to whether it be a visitor, or has come to stay, and expectation that it will appear in localities not yet invaded."

Knowing that the subject has engaged the attention of the medical profession in Brookline to some extent the past few years, and more especially the present year, our Secretary has invited me to give the Society an account of it as it appears in this ordinarily very healthful town. I am much indebted to Dr. Geo. K. Sabine, and a number of other Brookline physicians, for assistance in obtaining the information necessary for this paper.

Like the adjacent territory similarly visited by intermittent fever, namely Brighton, Roxbury, Jamaica Plain, West Roxbury and the Newtons, Brookline abounds in lenticular hills of glacial origin, of which some are thickly wooded. There are large tracts of more or less level woodland, and in a few places marshes and swamps.

Charles River, along which most of the cities and towns have intermittent fever, comes nearly, but not quite, within the borders of the town. Muddy River, however, is for quite a distance the boundary between Boston and Brookline.

The first case in Brookline of which I can learn, occurred thirty-seven years ago, and was reported to me by Dr. T. E. Francis. His patient was the child of a clergyman here who came from Brooklyn, N. Y., where the fever was not uncommon. The child never had it in Brooklyn, but after three or four years continuous residence on St. Paul Street, about a quarter of a mile from Muddy River, he had a well-marked attack, tertian type, which yielded to the usual treatment. It is not certain, however, that this case should be considered indigenous, as the latency of the disease for long periods of time is well established. Cases somewhat similar to the one just given are those of two well-known gentlemen of this town who served in the late war in malarious regions, enjoying immunity from the disease at the time, but suffering from intermittent some years after returning to Brookline.

Though till a very few years ago imported cases have been the only ones seen here, surrounding towns furnishing most of them, our neighbors in the Newtons have not been so fortunate, indigenous cases occurring there at least thirteen years ago.

As it is apparently by way of the Newtons, for the most part, that intermittent fever has entered the Chestnut Hill region of Brookline, the following quotations from the paper referred to will be in order.

Dr. Henry M. Field, of Newton, writes in 1889 as follows: "My first clinical experience with it in Newton must have been fully twelve years ago. Investigated very thoroughly, not believing that malarial disease could be *born* in the vicinity of Boston; but established the fact of such origin here beyond question." The disease did not appear in epidemic form until about 1887, although other sporadic cases were seen before that year. Since that date it has prevailed in most, if not all, of the wards of the city, as shown by the following quotations. Dr. Porter, of Auburndale, reports: "When first observed it was among Italian laborers in Weston, at Cambridge Reservoir; soon after at Islington and Riverside, — both skirt the Charles. Later, it appeared in nearly all sections of Auburndale, West Newton and other wards of the city." Dr. W. O. Hunt, of Newtonville, reports: "Many cases near swampy lands; a number where new roads were being constructed." Dr. L. R. Stone, of Newton Corner, has heard of cases "near a pond which has a great deal of vegetation along its banks." Dr. F. W. Webber, also of Newton Corner, reports: "Most cases were along the borders of the river, or in the immediate vicinity of some boggy swamp. Possibly southwesterly winds prevail when the disease is at its height." Also Dr. J. F. Frisbie, of Newton, reports: "Near swamp and pond." Dr. J. R. Deane, of Newton Highlands, reports: "Near upturned soil." Dr. W. H. Hildreth, of Newton Upper Falls, reports: "Generally near the Charles River." As to the number of cases, Dr. Deane reports about forty for 1889. Dr. Field has "kept no record; can only say, in general terms, that I find indications for more frequent prescribing of quinia than formerly, and in larger doses." Dr. Hildreth: "Not more than six during the past year." Dr. Hunt: "From seventy-three the first year, in lessening number to about twenty-six the past year." Dr. Porter, of Auburndale: "A good many; ten or twelve during the past year." Dr. Scales, of Newton: "About half-a-dozen; there have been only a few cases in this immediate vicinity." Dr. Webber: "It is such an ordinary thing that no note is made of it unless it comes in some specially high or favorable location."

I am informed, too, by reliable persons, that during the last three or four seasons the band of Gypsies that has been camping out just over the line in Newton has had unpleasant experience of malaria. Two years ago all the members of one family of the band are said to have had it.

Since 1889 intermittent fever has increased in the Newtons in number of cases and extent of territory affected, in Newton Upper Falls the past summer and autumn amounting almost to an epidemic. Stagnant ponds and the unusually filthy condition of Charles River are considered by the residents there the cause of this increase.

Our first indigenous cases in Brookline in recent years of which I can learn, occurred in the autumn of 1885 in a man and a boy in separate houses on Pearl Street, and were reported to me by Dr. Sabine. The location is on what is called "The Marsh," and not far from Muddy River. The same season, Dr. E. M. Buckingham reports he treated two cases from different families, both Boston City Hospital out-patients, and both living on Downer Street near Pearl Street, just over the line from Brookline, on the bank of Muddy River. One of them, twelve years old, was born there; both cases well marked. The same season (1885) Dr. Sabine met an indigenous case, tertian type, in a child living at Cottage Farm, near Charles River.

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[1] Read before the Norfolk District Medical Society, November 29, 1892.

Our next was in November, 1888, when Dr. Sabine had an indigenous case, tertian type, in a little girl living at the corner of Francis and Toxteth Street, Longwood, not very far from Muddy River. A well-marked case.

In May, 1889, on Longwood Avenue, not far from Muddy River, two cases were reported, both quotidian type, by Dr. H. M. Cutts. The patients were aged seven and nine years respectively.

June 26, 1889, Dr. B. S. Blanchard treated a well-marked case, a tertian, in a child eleven years old, in Monroe Place (Cameron Street), off Boylston street, near the village brook, which has its sources at Chestnut Hill and in Brighton. This was the first indigenous case met with in that part of the town. August 31st of the same year, 1890, Dr. Blanchard treated a lady fifty years of age, with intermittent, tertian type, close to the playground at Brookline Hills, a few hundred yards from the village brook. In September, on Edge Hill road, which overlooks at a short distance Muddy River, Dr. Cutts met a case, irregular type, in an adult.

In August and September, 1889, there were a number of cases at Chestnut Hill, a sparsely settled part of the town near the Newton line. At and near the crossing of Hammond Street by Boylston and Heath Streets, near the Holyhood Cemetery, are a number of houses of small farmers, gardeners, coachmen, icemen and farm laborers, the adults of both sexes numbering perhaps seventy. Not far from this settlement is Hammond's Pond, and between Boylston Street and the pond a tract of swampy, thickly-wooded land, while just across Boylston Street are three stagnant ponds, two of them about a foot deep, the third about six feet deep and fed partly by surface water and partly by a spring at the bottom. Just off Heath Street is a fourth stagnant pond, and bordering Hammond Street, close to Heath Street, a tract of boggy land covered in sum-with a rank growth of vegetation. The ponds were all made by digging out earth for filling purposes. In this settlement malaria became quite prevalent in the summer and autumn of 1889, but as the residents there generally sent for Newton physicians as being more experienced in treating malaria, few of us saw much of it there till more recently. Dr. W. P. Defriez, however, reports to me six cases, all tertian type, seen by him in August and September of that year. In 1890 an indigenous case, tertian type, was treated there by Dr. Geo. H. Francis. The patient was an iceman living close to Hammond's Pond. The following May this patient's wife and three-year-old daughter were treated by Dr. Francis for the same fever, tertian type, and several of the neighbors, he states, were ill with malaria at that time. Dr. Defriez reports seven cases seen by him that season, 1890, all tertian.

Chestnut Street, nearly two miles from Chestnut Hill, had a case the same season, reported by Dr. T. E. Francis, and Juniper Street, corner of Flora Street, not far from the Muddy River marsh, had two cases: all three tertian. Harvard Avenue, Washington Street, Brookline Avenue and Boylston Street in the village had one each, all tertian. Total number of indigenous cases for 1890, exclusive of Chestnut Hill cases, seven.

In 1891 there was a marked increase in the number of new cases; there were reappearances in patients of the year before; and the fever appeared in parts of the town till then exempt. The largest increase was found at Chestnut Hill and the region adjacent. The exact number of cases there, however, it is now impossible to ascertain; a conservative estimate would be from fifteen to twenty new cases.

Some of the new cases in other parts of the town the same season, 1891, occurred in the following locations: Warren Street, tertian, a young woman; Fisher Hill, a young woman and a school-boy, both tertian; Chesnut Hill Avenue (about a mile from the Chestnut Hill settlement) a tertian, young man; Boylston Street (about a mile from the Chestnut Hill settlement), a tertain, a young man; Flora Street, two, tertian; Edge Hill road, irregular type, an adult; Hawes Street (Longwood), irregular type, adult; St. Paul Street (near Beacon Street), a tertian; Harvard Street (almost in Harvard Square), a young woman, tertian; Total number, of indigenous cases for 1891, exclusive of Chesnut Hill cases, eleven.

In addition to these cases there were treated by Brookline physicians at least four new cases, tertian type, just across Muddy River, on Heath Street, Roxbury.

The season just ending (1892), the largest number in any one section has been, as in 1891, at Chestnut Hill, where it is estimated not less than forty cases have occurred. Of these I have myself treated only six; but Dr. Sabine, Dr. J. H. Woods and other Brookline physicians have treated cases there, and one or two Newton physicians a larger number. Then, with the knowledge gained from personal experience of the disease, a number of laymen have dispensed sulphate of quinia in pill form, and in a red, bitter solution, with varying success. Among my six cases in that locality the past season was one complicated by premature labor. During convalescence the patient's husband and the latter's aged mother came down with the fever, the last patient having it severely: tertian type in all three cases. The little six-pound baby, on the breast throughout, escaped an attack. A near neighbor of this family, a strong, young blacksmith, suffered severely from malaria for ten weeks, though in the care of an experienced Newton practitioner. Usually, attacks of intermittent fever in that neighborhood, as elsewhere in Brookline, have yielded quite readily to appropriate treatment.

The following list of cases occurring in other parts of the town this season (1892), must be incomplete; but as far as it goes it is reliable, as all the cases not my own were reported to me by the physicians in attendance. When not mentioned, the physician attending was some one of those already mentioned. Reservoir Place, a tertian, in a young man. Chestnut Hill Avenue (about a mile from the settlement), a man and a little child; latter's temperature went to 106°; both cases tertian. Ackers Avenue, off Chestnut Hill Avenue, a tertian in an adult. Newton Street (corner of Hammond Street), a tertian, in a young man; Cameron Street (close to the village brook) a tertian in a patrolman whose beat is the parkway in process of construction along Muddy River. Fay Place (close to the village brook, and at a time when the brook at that point was nearly dry), a tertian in a young man. Harvard Street (corner of Webster

Street), a tertian, in a young man. Near Francis Street, a tertian, in a young man. Longwood Avenue (in Stevenson's block) not far from Muddy River, three tertians all adults; reported by Dr. J. P. Murphy. Marion Street (near Beacon Street), a tertian, in an adult. Babcock Street (near Commonwealth Avenue), a quotidian, in a woman; reported by Dr. A. Cooper. Flora Street (near the parkway), a tertian, in a girl of fourteen. Pond Avenue (along edge of parkway), a tertian, in a young woman. Total number of indigenous cases for 1892 exclusive of Chestnut Hill cases, sixteen.

Besides these, all within the town, Dr. Cutts reports to me, without details, five cases he has seen just beyond the line in Roxbury; and I can myself report two typical cases, both tertian, in adults on Heath Street near Tremont Street, Roxbury, and a third case also tertian, in a young woman on Commonwealth Avenue, opposite the end of Pleasant Street, near Charles River and a stagnant pond.

I hardly need to say that malaria at Chestnut Hill, in the settlement described, has been assuming a somewhat serious aspect. The majority of the families there have had one or more members ill with it, some of them seriously.

The proximity to the stagnant pools already referred to, made by digging out the earth for various purposes, would seem to account in part for its prevalence. The rotten land about Hammond's Pond is probably also a factor in the problem. In Providence, R. I., and in Somerville, Mass., the prevalence of intermittent fever near stagnant ponds made there a few years ago is now resulting in the filling in of the same by the local authorities; similar action, taken before the spring, in regard to the stagnant ponds at Chestnut Hill, would, in the writer's opinion, be eminently proper. A survey of the swampy land in the same neighborhood, with reference to curing it by draining or filling in, or cutting down enough trees to admit sunshine and cause grass to grow, or a combination of two or more of these methods, should be seriously considered. Not only at Chestnut Hill, but in all other parts of the town, it would be an excellent prophylactic measure to fill in all stagnant ponds, and, where practicable, to cure all swampy land.

Frequent digging up of the roads for street-car tracks, electric wires, sewers, water and gas pipes we shall have to allow, also currents of air and streams of water from malarious districts; but this fact should only emphasize the more our duty to remove such sources of malaria as *are* within our control.

Our board of health is studying the situation at Chestnut Hill, and is ready to adopt the best method for abating the evil when that method shall be pointed out.

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COMPLEX FORMS AND SEQUELÆ OF INTERMITTENT FEVER.[1]

BY H. M. CUTTS, M.D., BROOKLINE, MASS.

Before entering upon the consideration of the subjects in the title, it may be well to say a word upon the pathology of malaria. It is essentially a disease of the red corpuscles of the blood, that is, they furnish the habitation for the plasmodium malariæ; in them it takes its seat, proliferates and dies, leaving behind it a ruined dwelling.

Locally, it also has its effects, "due to an especial development of the virus at given places," as the spleen, liver, brain and blood-vessels. It has been well proved that the etiological factor is a germ; and its action is both constitutional and local, both conditions always existing together.

It is probable that the blood of a person recently intoxicated with a mild intermittent of some regular type, which has been stopped with quinia, presents no marked pathological change. The death of the comparatively few infected corpuscles is quickly recovered from, and the health is not greatly impaired. But in the course of re-intoxication, or of a prolonged unchecked attack, the "red corpuscles become greatly diminished in number, the white more abundant, the blood clots imperfectly, and is of an abnormally dark color" (Loomis).

In a case like the above, the local symptoms are neither pronounced nor permanent. The favorite place for the local manifestation is the spleen; enlargement of this organ occurring often enough to allow "spleenic fever" as a pseudonym for malaria. Other organs are also affected; but with the crisis of the fever they quickly resume their normal condition, and it is not until repeated attacks have permanently disorganized them that they become pathological. These conditions, however, may be better considered later under the head of sequelæ. So much for pathology.

At first, in a region over whose face malaria is slowly creeping, the disease is apt to present itself in a mild form, a genuine intermittent fever of a regular type, commonly tertian (?). As it increases with age it increases in virulency. Among the recent intermittents appear the chronic, hardly recognizable under its various marks and disguises; the "types" lose their symmetry, and there arises a veritable jumble of symptoms of malaria and disease, of disease and malaria, but always with a little bit of malaria somewhere.

Latency. — Perhaps the first knowledge that intermittent fever has reached a neighborhood will be malarial manifestations in persons who have previously had the disease, and who quickly recognize their old enemy. Such persons are especially subject to re-infection, though it is fair to say that they might have brought the disease with them, it being perfectly possible for it to remain latent in the system for a considerable time, to reappear only when brought out by some current complaint (Loomis). These subjects, however, when re-intoxicated are apt to present malaria in its, so to speak, advanced forms. The symptoms, if intermittent, are more severe than the recent case, or they may at once assume the remittent type. Subsided affections which have been the sequels of former attacks may begin again to incommode the patient.

Irregularity (either in form, type or time). — Irregularities in form are most common and puzzling. The perfect picture of a paroxysm of intermittent fever, with its chill, febrile and sweating stages, is not by any means as common as might be expected; and especially is this true of infants. In them the "chill" is rarely present. At the onset of an attack they begin to yawn and stretch as if sleepy and tired; the little face gets pale and loses its plumpness; the lips and finger-nails get blue; there may be twitching of the eyelids and limbs — a picture that if once seen, is never forgotten. Then comes the fever, which is the essential element and always present; and lastly the sweating stage, which varies from a slight moisture on the forehead and palms of the hands to a profuse perspiration. Indeed, the teeth-chattering, bed-shaking "chill" is not often seen in mild cases, but is the symptom probably most frequently indistinct, and hence overlooked, by the physician who expects it to be prominent.

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[1] Read before the Norfolk District Medical Society, November 29, 1892.

The fever, of course, varies greatly in degree. The modesty of the chill stage, the height of the pyrexia, and the slight amount of perspiration, not more than would be easily set down to "general" causes, sometimes presents a combination which is not at once recognized in a newly infected district. So also may the "negativeness" of the whole paroxysm and its quick subsidence puzzle one, until he has been called several times at regular intervals to see the same phenomena.

The sweating, also, is of different degrees. It first and most consistently appears on the brow as the fever passes away. If slight, it may readily be overlooked by the persons who are attempting to describe to the doctor the symptoms of the attack. It may be only this or it may saturate everything in contact with the patient.

At least two stages of the paroxysm are nearly always prominent, and the febrile stage is always one of the two. There may be irregularity in the duration of either of the stages.

Type. — The quotidian type is probably the most common in the United States. In the same locality there seem to be a mutability of types, for the majority will be quotidian in one season and tertian during the next. The "quartan" is less common then either of the other two simple forms.

Flint says: "cases are observed occasionally in which one of the simple types is duplicated; that is, two sets of proxysms of the same type co-exist. Thus one compound type is called 'double quotidian,' two paroxysms occurring daily. Another compound type is a 'double tertian.' In a 'double tertian' a paroxysm occurs daily, but the paroxysms on successive days take place at different hours, and may differ in various ways, whereas on alternate days they occur at the same hour, and correspond in other respects."

There are cases in which the paroxysm occurs on the seventh, fourteenth and twenty-first day, besides other anomalies which are rare enough to be merely clinical curiosities.

I have had a case in this town which had had three paroxysms of the quotidian type before I saw her. The attacks began about six P. M. and presented, well-marked, all the phenomona. I saw her first on the fourth day and prepared with quinia to stave off the attack expected that evening. No paroxysm appeared and after continuing the quinia for a day or two she seemed all right. Exactly twenty-one days after the third quotidian paroxysm I saw her in another, at the same hour and with the same symptoms. She has had no other since then.

Time. — Usually the paroxysm may, in the regular type, be expected at about the same hour, "but sometimes there is a variation from this rule, and the variation is in accordance with a law whenever the paroxysms are said to be anticipating or retarding. They are anticipating when each successive paroxysm recurs earlier by the same period than the last. They may thus regularly anticipate half an hour, an hour and a half, etc. The paroxysms are retarding when each successive paroxysm is, in like manner, delayed" (Flint). It is well to bear in mind these variations as they have much to do with the treatment.

Masked Intermittent. — "For example, to-day a patient has a regular intermittent paroxysm; but to-morrow instead of a recurrence, perhaps he suffers from the most intense neuralgia" (Loomis). The neuralgia may be of any one nerve. Instead of a neuralgia we may have a hemicrania, asthma or indigestion. Sometimes diarrhœa, dysentery or suppression of the urine will take the place of the paroxysm. These substitutes are as regularly intermittent as the original malaria.

Remittent Fever. — So far as has been ascertained, it is the same poison which produces a disease quite different in its characteristics from intermittent fever, the differences, however, being in "degree rather than in kind." Instead of the short, sharp paroxysm of the intermittent with its period of apyrexia, we have a prolonged "continuous" pyrexia. The diurnal exacerbations may be like those of an intermittent, the stages of the paroxysm not being well marked; but the chief difference is that there is no period of apyrexia. The temperature during the twenty-four hours is always above normal and in a typical case presents much the same "curve" as in typhoid fever. This is the "continued fever," noted for its obstinacy and persistency in spite of treatment. I have seen one case of thirteen weeks' and another of eleven weeks' duration, without the temperature once reaching normal, though it never was very high. Here again there is a mutability of type, the intermittent ending in a remittent, or the remittent lapsing into an intermittent.

Typho-Malarial Fever. — Whether this be an intermittent or remittent, pure and simple, whose first stages resemble typhoid, or a typhoid complicated with malaria, it is of the utmost importance to decide. Both diseases are at their height at the same time of the year; and when combined, for there is no special germ for typho-malaria, they form a combination more dangerous than either alone. An examination of the blood for the plasmodium malariæ is both easy and final. Its presence settles the malarial factor; and appropriate treatment will stop the attack, or at least simplify the disease.

Pernicious Malarial Fever. — There is still another complex form to consider, though it is probable that in this climate we shall not be called upon to treat many cases, namely, pernicious malaria. Fortunately, climate is the most potent factor in the prophylaxis of malaria. It thrives best in a hot climate, or at least its most intense manifestations are there.

"Pernicious malaria is subdivided into three forms: (1) the algid or congested, (2) the comatose, (3) the hæmorrhagic.

"The algid or congested occurs more frequently than any of the others. Its perniciousness is due to an aggravation and sheer exaggeration of the cold stage of an intermittent attack" (Bemis). The patient dies before the febrile stage of the paroxysm arrives, or if he survives, he passes through an intensified and prolonged cold stage. On the other hand, the comatose form presents an excessive pyrexia, the skin, pulse and temperature showing a high fever, the cold stage being scarcely noticeable. The hæmorrhagic form is due to the effects of long-continued malarial toxæmia upon the blood, which is so altered as to favor hæmorrhage, and the "textural weakening of the vascular walls" by the same poison. The hæmorrhages occur during a chill at some point in the vascular system where there is congestion, the rupture being due to the extra pressure of the congestion.

Malaria may, besides all these irregularities, simulate a disease very closely. Typhoid fever has already been mentioned. Smith reports a case taken for Basedow's disease, while it has several times been mistaken for puerperal fever. It is frequently the only apparent cause of miscarriage. Though, as has been said, a few paroxysms of intermittent fever do not greatly injure the tissues which it specially attacks, treatment for the restoration of even the little damage should be undertaken.

Sequelæ in Recent Cases. — The natural sequence of the action of the plasmodium is anæmia. This, in recent cases of simple form, is quickly recovered from with the usual treatment.

Enlargement of the spleen "is probably due to the existence in it of latent germs" (Dock). Quinia should be continued while it lasts.

Bronchitis is a frequent sequel; and if the attack lasts for some time it may be concomitant. It is usually mild, but must be considered of great importance, as the step between it and pneumonia is but a short one.

Gastritis, or dyspepsia, and various forms of intestinal disturbances follow mild intermittents, especially in children. In them, also, albumen in the urine is frequently found, and glycosuria is sufficiently often present to make an examination for sugar important. The urine passed "is of a brownish color; and when it stands for a little while, a brownish-black deposit settles, over which the urine is perfectly clear" (Dock). This, Dock thinks, is almost characteristic in children, and is worth while remembering, for it is in the little ones that the diagnosis is difficult to make.

The heart seems not often to be affected. Though in the chronic cachexia it is actually weakened, in the mild forms attacks of palpitation at regular intervals seem to be its only malarial manifestation.

The nervous system is profoundly affected, there being almost always pains and neuralgias during the paroxysm or in place of it; and in dengue, which is closely related to malaria, the arthritic pains are almost equal to those of rheumatism.

Neuralgias have already been mentioned.

The liver is apt to be enlarged, but, with the spleen, will quickly subside.

Sequelæ in Chronic Cases. — He who possesses a chronic malarial cachexia can have anything in the disease line that is obtainable. The profound depression of the system due to the great destruction of the blood corpuscles and the persistent active manifestation in localities, has not only disorganized nearly every organ in the body, but has rendered the subject more liable to intercurrent diseases; *vice versa*, in a malarious country, malaria complicates everything, and is the bane of the sick.

To name the sequelæ, or, perhaps better, the sequels, of chronic malaria, would be to give the nosology of medical diseases — a larger task than I am prepared for.

Fortunately, the climate is again likely to interfere, my impression being that but few indigenous chronic cases are seen in New England, that is, in a temperate climate.

A CASE OF PANCREATITIS AND HÆMORRHAGE WITH A FEW REMARKS ON THE CLINICAL ASPECTS OF PANCREATIC INFLAMMATION.[1]

BY FRANK L. DAY, M.D., PROVIDENCE, R. I.

The object of this paper is to put on record a case of fatal pancreatic hæmorrhage into an organ, which from the clinical history, was probably the seat of preexisting inflammatory disease. As pancreatitis is relatively infrequently recognized, not so much from the indefiniteness of its own symptoms, as from the difficulty in differentiating them from those of associated diseased conditions in other organs, it may be profitable after reporting the case to spend a few minutes, in reviewing the leading features of pancreatic inflammation from the purely practical, clinical aspect.

The patient whose case is reported, was seen much of the time jointly with Dr. H. G. Miller, of Providence; and we had the benefit of daily consultation with Dr. Robert F. Noyes, of Providence, for a considerable period. Prof. Frederick C. Shattuck and later Dr. Charles F. Folsom, both of Boston, were also consultants.

The patient was a physician, forty-nine years old, of nervous temperament. Father died suddenly at fifty — from heart disease, it was thought. Patient's stomach was always delicate, and he was subject to attacks of indigestion — undoubtedly aggravated of late years by irregularity in sleep and meals incident to a busy physician's life. For several years had to take starchy foods and milk very sparingly.

Some three years ago, while travelling abroad, he had a sudden attack of syncope, and was in a condition of partial collapse for twelve hours, gradually recovering after several weeks of weakness and debility. For a year or more previous to his last illness he had been running down; more nervous than ever; had to live on meat chiefly. For six months had eaten *but little meat even.* Was working hard all the time, and could sleep at night only by the aid of stimulants. There had been a distressed and painful feeling in the epigastrium for months; and relief was had by applying chloroform externally and sometimes by inhaling a little. For its bracing effect he had sometimes used a little cocaine by the nose (in four per cent. solution), though in no way enough to have formed the habit.

In the early spring of 1892 he found himself very weak, and unable to keep up without artificial stimulation. He knew this could not go on indefinitely; so April 6th, he decided to stop work and give himself the rest he needed. He then began to have uncontrollable vomiting (food, greenish liquid and a little mucus), with violent retching — never hæmatemesis. The tender spot in the epigastrium became more tender, so that deep pressure in examination could not be tolerated. He complained of quite constant "agonizing pain" (his words) there and in the right hypochondrium. There had been for months, and still persisted, tenderness behind, over the right lower ribs, corresponding to the hepatic margin, which *he* for some time had regarded as evidence of a peri-hepatitis. Day after day he grew weaker, physically and mentally; was delirious much of the time; following exertion, had several attacks of partial syncope. His pulse, usually abnormally slow, became quick and weak. There was at no time much temperature — never over 99°. The bowels were always constipated, requiring frequent use of calomel, salines and enemata. The stools were at times clay-colored; at others, showed evidence of bile. At one time there was decided jaundice—disappearing after calomel. Much of the time conjunctivæ and skin remained of muddy color. Could not tolerate taste of anything verging on sweet or sour. Alkalies, codeia, and various things by stomach gave no relief. After two weeks, vomiting was controlled by laudanum in suppositories. Then he could retain meat broths, shaved beef, and milk largely diluted.

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[1] Read at the Quarterly Meeting of the Rhode Island Medical Society, held in Providence, December 1, 1892.

It was at this time that Dr. Shattuck saw him, and after a most careful examination, concurred in the diagnosis of gastro-duodenitis.

During the first half of May, he gradually gained strength; so that May 19th, under chloroform narcosis, I removed from the right axilla a mass of suppurating glands (which had been there for many weeks and given him considerable physical and mental pain). He bore the operation well, and the wound healed promptly.

During the next two weeks, he held his own in general strength — had only occasional vomiting attacks — but was never for a minute free from "agony," as he described the epigastric pain; tenderness was always present, though scarcely as marked as earlier. Constipation persisted. During the first week in June, he was less strong than before — partly attributable, perhaps, to the large quantity of chloroform he inhaled to allay the "agony"; at this time he was much depressed.

At 6 A. M., June 11th, he had a sudden attack of vomiting and retching, with sharper pain in epigastrium. I saw him two hours later. He was in collapse — semi-conscious, sweating; dusky color, cold extremities, pulse 120, subnormal temperature. At tip of ensiform cartilage (the usual tender spot) was increased tenderness and resistance, extending some distance below and to the right. No tumor felt. Collapse grew more profound until his death at 10.30 P. M., sixteen and one-half hours after onset.

Necropsy (eighteen hours after death).— Skull not opened. Nothing remarkable about heart, lungs or pleuræ; nor about spleen, liver or kidney. No evidence of peritonitis, local or general. Intestinal tract normal. Stomach larger than normal, with somewhat thin walls, which were slightly injected and had a little mucus adherent. Gall-bladder contained one small concretion of inspissated bile; two others were firmly lodged in the duodenal extremity of the common duct, the lumen of which they almost, but not quite, completely filled.

The head of the pancreas was perhaps slightly more dense than usual. The body and tail were enlarged in all dimensions — say one inch longer than normal and of more than double the ordinary diameter; abnormally hard and dense, exuding a light chocolate-colored liquid; the color of entire body and tail bordered on chocolate — at one place, peripherally, was quite like it. On the surface were many dark areas, more or less irregularly round and from one-half to three-fourths of an inch or more in diameter. Section through these spots showed the shape of the dark bodies to be conical; their color and look suggested altered blood. Many smaller nodules appeared, of light-gray color — size, say of large pea or very small cherry — hard and dense to the feel and knife.

The pancreas was taken immediately to Boston for examination by Professor Fitz, who was out of town, however, and did not receive it until some eighteen hours after, when it was badly decomposed. He reported that macroscopically it showed evidence of hæmorrhagic infiltration, with areas of fat necrosis. Professor Whitney, of Harvard Medical School, reported later that "there was an evident hæmorrhagic infiltration in the middle of the body, with thrombosis of the pancreatic veins; but from the decomposition little else could be made out."

Professor Fitz said further, after receiving my clinical and necropsy notes, that it is clear that the case belongs among the series of pancreatitis and hæmorrhage; the appearance of the pancreas, as described and seen post-mortem being quite characteristic of that present in fatal cases. He thinks that the attack three years ago may have been similar, though slight. It is to be regretted that the specimen was spoiled, for had there been found traces of blood pigment, it would have settled all doubt.

The search for information on pancreatitis is not very fruitful. "Hare's System of Therapeutics" (just issued) makes no mention of pancreatic diseases. Strümpell dismisses it with one page in the appendix. Prof. R. H. Fitz, of the Harvard Medical School, in the Middleton-Goldsmith Lecture for 1889, before the New York Pathological Society, has given us the most complete and satisfactory differentiation that has yet been published, and has done more than any one to put pancreatitis on a practical clinical footing. "Pepper's System of Medicine," too, contains a somewhat extensive notice of the diseases of the pancreas, by Dr. Louis Starr.

Before dealing with symptoms we must recall the anatomy and physiology of the pancreas.

As to the former: The head rests in the hollow of the duodenum (when much enlarged, sometimes almost encircling it); the bile-duct usually passes over it, but often runs through it, in which case even a moderate enlargement of the head would be likely to compress and perhaps close the duct. Did this happen oftener, jaundice would be a more frequent symptom of pancreatitis. Behind, it rests upon the aorta, inferior cava, superior mesenteric vessels and the solar plexus. In front are the stomach and left lobe of the liver. It is evident that an enlarged pancreas may give rise to prominent pressure symptoms: for example, pressure on portal vein, to an enlarged spleen; on inferior cava, to œdema of lower extremities, etc.

The pancreatic juice has three chief functions: (1) Conversion of starch and sugar into glucose; (2) emulsification of fats; (3) completes the digestion of nitrogenous food, thus helping out the gastric juice.

If the organ had any one function peculiar to itself, impairment of that function as shown in failure to digest some one class of food-products, would make the diagnosis of pancreatic disease easy. But, supplementing as it does, the action of the other digestive fluids, it is difficult or impossible to differentiate with certainty between disturbed pancreatic function and disease of the other digestive organs: An eliminative process may help to a provisional diagnosis. Just here it occurs to me to suggest the possibility that some of our drugs which are supposed to stimulate flow of bile, may wholly or partly act by stimulating the pancreatic secretions.

Acute pancreatitis is probably of more common occurrence than has been thought. It is not improbable that it is a relatively frequent factor in the course of many obstinate cases of impaired digestion, gastric and duodenal. If catarrh of the bile-duct is common, by extension from the duodenum along the common duct, why should the pancreatic duct escape? So anything that causes gastro-duodenal inflammation may lead to pancreatic inflammation: Thus alcoholism, and irregular or excessive ingestion of food are among the most frequent excitants. Hæmorrhage into the pancreas, from injuries or other causes, may be a cause. The hæmorrhage, on the contrary, may be consequent upon a preceding inflammation.

Symptoms. — The most prominent common symptom is deep-seated pain in the upper part of the abdomen, radiating upwards and backwards — often sudden and intense. It is due either to (1) pressure on the solar plexus — when it is paroxysmal, colicky, and accompanied by great anxiety and oppression and often by syncope; (2) or the pain may be due to a localized peritonitis, for the front of the pancreas is covered with peritoneum, (the posterior layer of the lesser omentum). In this case the pain is continuous, circumscribed and greatly increased by deep pressure. Nausea, vomiting and retching may accompany or follow the pain. There is constipation and often free fat in the stools and urine; usually little, if any, temperature; often extreme emaciation. Pallor; restlessness; thirst; a rapid, compressible pulse; a furred tongue, — all attest the seriousness of the illness.

The symptoms are modified by the pathological condition: pancreatic hæmorrhage may occur independent of inflammation — *inferentially*, by analogy, due to embolism or aneurysmal dilatation (this is purely theoretical). Here the symptoms are those of sudden collapse, progressing to a fatal ending in a few minutes or hours. Again, as is probable in the present case, the fatal hæmorrhage, with its attending collapse, may be the sequent of a pre-existing pancreatitis; and the organ, at the necropsy, show interstitial inflammatory changes, as well as evidence of hæmorrhage. Many of these cases give a history of previous digestive disturbance, more or less protracted. The pain, from being localized in the epigastrium or upper abdomen, may later become general. Tympanites is common.

Diagnosis. — The diagnosis of the sudden, very acute attack involves causes of collapse located in the upper abdomen:

(1) Most frequent, peritonitis from perforation of (*a*) gall-bladder or ducts (this would give a history of colic, jaundice, tumor in region of gall-bladder, enlarged liver, and rigors); (*b*) ulcer or malignant disease of stomach, duodenum, liver, omentum or colon (easiest excluded by absence of previous hæmorrhage by mouth or rectum, pain relative to ingestion of food, pre-existing tumor, cachexia, etc.).

(2) Irritant poisons: History of case and character of vomitus help us.

(3) Intestinal obstruction: History of case and presence or absence of obstipation aid us. Here the seat of tumor is rarely epigastric; and there is not usually localized tenderness nor general tympanites. Test by trying to inject the colon.

If the diagnosis of the final hæmorrhage is difficult, much more so — even impossible — may it be to recognize the disease in its earlier stages, before hæmorrhage, suppuration or gangrene occur. For, besides the hæmorrhagic type, there is an "acute suppurative pancreatitis," its symptoms differing but little, save that it is usually more protracted.

Pancreatitis occasionally ends in gangrene, and we then have an "acute gangrenous pancreatitis." There seems to be no way to distinguish these forms at the bedside; it is left for the necropsy to do that.

Recovery from acute pancreatitis, in the early stages, is possible, but with the liability of recurrence.

Treatment is entirely palliative, unless to evacuate pus from the omental cavity. Whether a suppurating or gangrenous organ can be removed and the patient live, is an interesting problem in advanced abdominal surgery.

That the case reported is one of pancreatic hæmorrhage is *certain*. The clinical history corresponds with that of cases in which the post-mortem showed interstitial changes in the pancreas. So it is probable that pancreatitis preceded. How long had it existed? At how early a time could it have been recognized clinically, or ought it to be diagnosed in another case? This is a difficult question. In this case the symptoms were those of gastro-duodenal catarrh, with more pain and tenderness, however, than is usual; but it is doubtful whether the gall-stones did not account for that. Constipation and jaundice (which latter is not usual in pancreatitis) could be referred to insufficient flow of bile through the common duct. The nervous symptoms were easily explained by his general weakness and exhaustion, and to the effect of narcotics and stimulants. If the attack three years ago was a slight hæmorrhage, the disease dates back there. And I believe this not to be an exceptional case as to difficulty. So complex are the processes of digestion — no one class of foods being acted upon exclusively by any one secretion — and so imperfectly understood have been the functions of the pancreas in particular, that for the present it is doubtful if pancreatic inflammation will often be diagnosed; certainly not until hæmorrhage, suppuration or gangrene occur. The occurrence of disseminated fat necrosis had no clinical importance, until Dr. Fitz demonstrated tender points on the surface of the abdomen and back, corresponding to the necrotic areas.

ACUTE PANCREATITIS.[1]

BY R. H. FITZ, M.D.,

Professor Theory and Practice of Physic, Harvard Medical School.

The interesting contribution of Dr. Day to the subject of acute pancreatitis confirms the relation between pancreatitis and gall-stones which has been established in a few instances, and which seems analogous to that between gall-stones and cholangitis or between inspissated fæces and appendicitis. According to the most recent investigations, gall-stones alone are not productive of a suppurative cholangitis; but gall-stones and bacteria, especially the colon-bacillus, are capable of producing this lesion. Drs. Ernst and Jackson have recently isolated four varieties of bacteria in a case of hæmorrhagic pancreatitis; and Professor Welch has found pure cultures of the colon-bacillus in foci of fat-necrosis which, as so often, were present in a case of hæmorrhagic pancreatitis.

Although a considerable number of cases of acute pancreatitis have been published within the past two years, no considerable advance has been made in our knowledge of the etiology of this affection.

The effects of traumatism as a cause were recently shown in a case which occurred in the service of Dr. J. Collins Warren at the Massachusetts General Hospital. The patient had been run into, while intoxicated, and died thirty-six hours afterward. Several of the lower ribs were fractured, the liver was lacerated and hæmorrhage had taken place into the pancreas, which, on microscopic examination, showed an inflammatory as well as hæmorrhagic infiltration. The autopsy was made by the medical examiner, Dr. Stedman. Dr. Homans, who was present, recognized the familiar appearance of disseminated fat-necrosis, and called attention to the probable affection of the pancreas. (Specimens from this case were shown to the Society.)

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[1] Remarks made at the meeting of the Rhode Island Medical Society, December 1, 1892.

An important contribution to the prognosis of acute pancreatitis has been made by Osler in his "Practice of Medicine." He refers to a case admitted to the Johns Hopkins Hospital, under suspicion of acute intestinal obstruction. Immediate laparotomy was performed; no obstruction was found; but there was a dense, indurated mass in the region of the pancreas and at the root of the mesentery, also foci of fat-necrosis in the mesentery and omentum. The patient recovered. This is the first recorded case of recovery after laparotomy in probable acute pancreatitis.

It is well known that multiple fat-necrosis is frequently associated with hæmorrhagic and gangrenous pancreatitis, and the writer has maintained that the fat-necrosis is the result of the pancreatitis, in opposition to the view of Balser that the fat-necrosis was the disease which caused the pancreatitis.

The situation and distribution of the foci of necrosis in Dr. Warren's case were directly suggestive of the escape of fluids from the pancreas with the production of a chemical change by their presence. Langerhans has already regarded the necrotic process as beginning with a decomposition of the neutral fat in the cells into fatty acids, which then combined with lime forming the crystals to be seen in the necrotic nodules. Such a decomposition of neutral fat in the intestine is a part of the digestive action of the pancreatic juice; and the suggestion offered in Dr. Warren's case is that the same process might take place in the body outside of the intestine, and prove an efficient factor in the production of the necrosis. Langerhans, however, has succeeded in producing, experimentally, changes identical with those found in fat-necrosis. He injected the minced pancreas of a rabbit into the subcutaneous fat tissue of another rabbit with the above result — in a single instance. The observations of Ernst, Jackson and Welch concerning the presence of bacteria in the areas of fat-necrosis suggest still another method of production of the crystals than by the pancreatic juice. It seems established that intestinal bacteria, as well as the pancreatic juice, decompose neutral fats with the formation of acicular crystals similar to those seen in fat-necrosis.

Balser has recently reported that fat-necrosis occurs in swine as well as in man, and may be surrounded, though rarely, by an inflamed tissue. He claims to have found in the nodules an organism resembling actinomyces — hence a support to his theory of fat-necrosis as an independent, perhaps infectious disease.

A young man afflicted with "hereditary gout," when asked as to his suffering, said he didn't mind the pain of it so much, but the thought that some old ancestor *had all the fun of acquiring* this precious heirloom certainly did annoy him.

DISEASE OF THE PANCREAS.[1]

BY ROBERT F. NOYES, M.D., PROVIDENCE, R. I.

The diagnosis of pancreatic disease is difficult, and the experience in this class of cases of any one individual is limited.

William Lawrence[2] in 1831, in reporting a case of pancreatitis, observed that: "Morbid changes of all kinds are extremely rare in the pancreas as well as in the salivary and lachrymal glands which are similarly organized. It seems doubtful whether modern pathological anatomists who have had the most extensive opportunities of observation have ever seen inflammation of this gland."

Twenty years ago text-books contained almost nothing upon the subject of pancreatitis, and lecturers in our best medical colleges were silent. Since that time pathologists have recognized inflammatory and other changes in this deeply-seated organ, records of which have been made in the various medical journals and between these morbid changes and certain symptoms and signs there has been discerned a more or less close relationship. Indeed, a certain ensemble of symptoms and signs now directs the attention of the practitioner to the pancreas; and would he read carefully the chirography upon the wall he may arrive at a probable diagnosis.

Prof. R. H. Fitz was one of the first in this particular line of thought and investigation. To his labors as embodied in the Middleton-Goldsmith Lecture (1889)[3] is mainly due the recognition and admission by the profession that the pancreas is the site of acute, chronic, suppurative inflammation, abscess, fat-necrosis and apoplexies. Indeed, the Middleton-Goldsmith Lecture, embodying as it does the reports of many cases with extended remarks, is the basis of such editorials as that of the *Medical Record* (New York) for March 1, 1890, which in contrast with the utterances of William Lawrence, above referred to, directs attention to the above named pathological changes and to several others, and clearly indicates that the pancreas is not infrequently the site of disease.

When we remember that the main excretory duct of the pancreas was discovered by Wirsung in 1642; that the importance and function of the pancreatic juice remained unknown until revealed by the labors of the illustrious Claude Bernard in 1848; that the pancreas in deeply seated in the abdominal cavity; that it is in intimate relationship with important organs, vessels and nerves; that generally every other organ in the abdominal cavity, at an autopsy, is examined except the pancreas; that hitherto the literature upon the subject has been brief and indefinite, and last, but not least, that the number of practitioners is small who remember when at the bedside that their patient has such an organ, it is easy to perceive that the diagnosis of pancreatic disease is difficult.

The anatomy, relative position and physiological function of the pancreas have been so accurately and carefully considered by Dr. Day in his paper that nothing can be added except the intermittent production of the pancreatic juice and its arrest by nausea and vomiting.

Clinical experience indicates that pancreatic disease is more common in men than in women, and that, while no age is exempt, it is more common in those past middle life and in the aged. Syphilis, heredity, pregnancy, alcoholism, gluttony and suppression of the menstrual flux are recorded, upon equivocal grounds, however, as etiological factors in the production of disease of the organ under consideration.

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[1] Remarks made at the Meeting of the Rhode Island Medical Society, December 1, 1892.

[2] Medico-Chirurgical Transactions, vol. xvi, part 2.

[3] Boston Medical and Surgical Journal, cxx, pp. 181, 205, 229; Proceedings Pathological Society, New York, 1889.

The arrest, diminution or change in the quality of the pancreatic juice contributes upon physiological grounds to rapid and extreme emaciation; yet it must be remembered that emaciation is not always present even in serious pancreatic disease. Cases are recorded in which the body was well nourished and even somewhat corpulent and that, too, with occlusion of the pancreatic ducts as revealed at the autopsy. The bile plays an important though somewhat indefinite rôle in digestion; and in those cases of pancreatic disease in which the emaciation has been rapid and extreme the autopsy has not infrequently revealed occlusion of the common bile duct. It is probable that pancreatic disease producing a diminution of the pancreatic juice or a change in its quality is attended with no more emaciation, provided the bile flows freely into the small intestine, than may occur in serious disease of other abdominal organs.

Sialorrhœa or an abundant salivary secretion is frequently associated with pancreatic disease. It is, however, not diagnostic. The discharge of several fluid ounces of a colorless, opalescent fluid from the mouth, constituting a pyrosis, is not a pancreatic flux; it is a salivary secretion, not depending however upon sympathy between the pancreas and salivary glands, but due to gastric disturbance. It is an evidence of gastric and not of pancreatic disease, and occurs only in the latter class of disease when the stomach has become in some way implicated.

The appearance of free fat in the alvine dejections is a valuable sign of pancreatic disease. This is true in those cases in which constipation occurs as well as in those in which diarrhœa is more or less a prominent symptom. The amount of fat appearing in the dejections may exceed that which has been ingested and indeed it is said that oleaginous material has continued to appear in the alvine dejections when all fatty material had been excluded from the diet. Under these circumstances it has been imagined that the adipose tissues had given up the fat therein contained.

Other possible sources of free fat in the dejections must be borne in mind in estimating the value of this sign in pancreatic disease. The ingestion of a superabundance of fat, more than can be emulsified by the pancreatic juice pressure upon the large lymphatic trunks interfering with the absorption from the small intestine, and rapid peristalsis are to be borne in mind in giving fatty dejections their proper diagnostic value.

Inability to digest the oleaginous, saccharine and amylaceous varieties of food is a symptom of deranged pancreatic secretion but does nothing more than to suggest pancreatic disease.

Free fat occasionally appears in the urine in pancreatic disease. This, however, must not be confounded with chylous urine. In one event the oleaginous material appears as an emulsion and indicates pancreatic activity while in the other the fat appears in a free state and indicates impaired physiological function of the pancreatic juice.

Glycosuria occurs in diseases of the pancreas in a certain proportion of cases. It sometimes precedes and sometimes follows the pancreatic disorder.

Diabetes has been produced in animals by destruction of or injury to the pancreas and Lancereaux concludes that it is sometimes an evidence of pancreatic disease. It is probable, however, that alterations in the nerve structure of the solar plexus produces the diabetes and that glycosuria occurring in pancreatic disease is accidental and is due to pressure upon the solar plexus.

Pain in pancreatic diseases varies much in its severity. It may be due to inflammation of the peritoneum covering the gland, in which event it is constant, circumscribed and situated midway between the ensiform cartilage and umbilicus. It may be paroxysmal in character and very severe, simulating hepatic colic and depending upon pressure upon the solar plexus. In pancreatic apoplexy or hæmorrhagic pancreatitis the pain is said to be severe, agonizing and attended with collapse.

Calculi have been repeatedly found in the pancreatic ducts and it may be questioned if the severe paroxysmal pain often experienced in the epigastric region unattended with jaundice and often referred to hepatic colic or to gastralgia may not be due to the passage of pancreatic calculi.

The jaundice, the œdema of the lower extremities, the ascites, the stenosis of the pylorus and possible intestinal hæmorrhage produced by pressure of the pancreas upon the common bile-duct, the vena cava inferior, the vena porta and the pylorus cannot be distinguished from pressure produced by other causes.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., BOSTON.

(Concluded from No. 23, page 555.)

OPERATIVE TREATMENT OF GLAUCOMA.

Collins[1] publishes a paper based upon the pathological examination of 23 eyeballs which had been operated upon for glaucoma. In 20 of these 23 eyes an iridectomy had been performed, in two a sclerotomy, and in two an optico-ciliary neurotomy, one subsequently to an iridectomy.

Of the 20 in which an iridectomy was performed 13 were excised on account of the return of tension, in most accompanied by pain; three because they excited sympathetic ophthalmitis (in two of these the tension was increased at the time of excision); one on account of the escape of the lens and prolapse of the ciliary body; one on account of wound of the lens accompanied by inflammation and pain; one for hypopyon keratitis, ten years after the operation, during which time the tension had remained normal; and one for iritis and pain, the tension having been normal for a year.

In all except four of these cases it was found that a portion of the root of the iris had been left behind, and that in all but one of these 19 cases the remaining root of the iris was adherent to the cornea, blocking the filtration-angle in the region of the coloboma. In several of the cases also, the cut end of the iris had become healed in the cicatrix, making it additionally secure in its faulty position. In one case only the root of the iris was not adherent to the cornea, and the angle of the chamber was widely open. That it is possible to remove the iris quite up to its root, was shown by four cases.

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[1] Royal London Ophthalmic Hospital Reports, Part ii. December, 1891.

The subsequent loss of the eye in these cases was due to the following conditions: In one the lens-capsule was adherent to the wound; in one a piece of detached iris was incased in the wound; in one, owing to an ulcer of the cornea at the point of incision, the lens-capsule became adherent; and in the fourth the lens was wounded at the time of operation and became adherent to the cornea. Two of the cases in which the iris was removed to its root were acute cases; and the others, being more chronic, it is fair to suppose that the adhesion of the iris to the cornea existed before the operation.

The practical points which may be deduced from these cases are the following:

(1) The advisability of performing iridectomy for chronic glaucoma in the early stages of the disease, before the apposition of the root of the iris to the cornea has resulted in adhesion.

(2) It would be justifiable in some cases even to anticipate events and perform what might be termed a preventive iridectomy.

Should, therefore, a patient who had already had one eye affected, present any of the premonitory symptoms in the second eye, the chances of success in an iridectomy performed at once under favorable circumstances would be infinitely greater than if it was delayed until a congestive attack ensued, the depth of the anterior chamber become still further diminished, and a peripheral adhesion of iris formed. There would in some cases no doubt be some immediate diminution in the acuity of vision due to corneal astigmatism, a defect easily remedied by glasses.

Mr. Nettleship speaking of iridectomy for chronic glaucoma, says: "The state of the pupil seems to me to furnish the best prognostic guide; in almost all of the successful cases it acted well to eserine." It can easily be understood why this should be. In an eye with adhesions of the root of the iris to the cornea the pupil would less readily contract than in one where no such adhesion was present. Atrophy of the iris tissue in glaucoma, and ectropion of the uveal pigment at the pupillary margin are usually associated. The atrophy of the iris is due to the constriction of its blood-vessels from pressure of its root against the posterior surface of the cornea. When this pressure has been of long standing adhesion takes place. Hence it may be taken that the eye having a pupil with a marked black ring to it, which will not contract well to eserine, has considerable adhesion of the root of the iris to the cornea, and is an unfavorable one upon which to perform an iridectomy for the purpose of relieving tension. A sclerotomy performed with the intention of making a permanent gap in the adherent root of the iris would be more likely to succeed. It sometimes happens that one portion of the periphery of the iris becomes adherent to the cornea sooner than another. This is rendered evident clinically by the pupil becoming eccentric, it being drawn towards the side on which the adhesion is, also by the anterior chamber being shallower on the side of the adhesion, and by there being more marked ectropion of the uveal pigment there. It follows, therefore, that there would be more likelihood of the iris tearing away at its root, if the iridectomy was performed where there was most iris present where the anterior chamber was deepest, and where there was least ectropion of the uveal pigment, than if done in the opposite direction.

CORNEAL OPACITIES FROM CORROSIVE SUBLIMATE.

Mellinger,[2] in a review upon the experimental inquiry into the origin of the corneal opacities after cataract extraction which have been lately noticed, says: "Soon after the introduction of cocaine into ophthalmic practice a new hitherto unknown form of persistent opacity was seen, and its cause has not yet been determined."

It was noticeable that opacities only occurred after cataract extraction, though both cocaine and corrosive sublimate were largely used in other operations; and it seemed probable, therefore, that the wide opening of the anterior chamber had something to do with their production; the author, therefore, made experiments to find out: (1) what effect cocaine, or cocaine with sublimate, had on the unwounded cornea; (2) what effect they had when the anterior chamber was opened; (3) what effect they had on the cornea when injected into the anterior chamber. Rabbits were the animals experimented on. The results were briefly as follows:

(1) As to the effects on the unwounded cornea, Würdinger's results were confirmed; that is to say, the cocaine caused roughness of the epithelium, and made it permeable to coloring-matter (uranin, twenty per cent.,) was used; and when a cocainized eye was irrigated copiously with 1 to 5000 corrosive sublimate solution, a temporary surface opacity was caused. This, therefore, was a negative result, as this opacity did not resemble that observed after cataract extraction.

(2) As to the effect on the cornea when the anterior chamber was opened, it was found that a two per cent. solution of cocaine dropped into the eye every five minutes for one hour caused nothing but a slight temporary milkiness of the wound edges, and slight temporary roughness of the epithelium; the wound made was about one millimetre in length, or a little longer. Eyes in which a similar wound was made were then, after cocainization, irrigated for ten minutes with a 1 to 5000 solution of corrosive sublimate, the aqueous being let off from time to time during the irrigation; this only caused a superficial haziness of the cornea, which in one or two days passed off completely. It was also observed in all these experiments that a lengthened irrigation with sublimate solution caused a catarrhal conjunctivitis in rabbits' eyes which lasted for several days. The results in this series were therefore also negative.

(3) As to the effect of cocaine or corrosive sublimate injections into the anterior chamber, various experiments were made: (*a*) A flap one and one-fourth millimetres in length having been cut in the cornea, a two per cent. cocaine solution was injected with a syringe into the anterior chamber; many eyes were thus treated, but in none was a parenchymatous or permanent opacity produced. (*b*) Corrosive sublimate solution 1 to 5000 was injected into a number of eyes, and also a mixture of the cocaine and corrosive sublimate solutions. Some of these eyes were previously cocainized and some not; in all the result was the same, a parenchymatous keratitis lasting from three to six days was produced; this keratitis resembled that seen after cataract extraction, but differed from it in clearing up completely. In these injection experiments, however,

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[2] V. Graefe's Archiv, Band 37, Ab. iv.

owing to the size of the incision, the fluid injected flowed out of the anterior chamber so easily that probably none of it was retained there. Now after a cataract extraction, owing to the very low tension, especially when cocaine is used, it is probable that fluids introduced into the anterior chamber remain in it, and to observe the effect of this, the following experiments were made: (*c*) The cornea was perforated and some 1 to 5000 sublimate solution injected after the aqueous had flowed off; the solution remained in the anterior chamber after withdrawal of the syringe. This was found in every case to produce a parenchymatous opacity similar to that observed in human eyes after cataract extraction, which was in many cases a permanent one; the corneal wound had nothing to do with its production, as when injected from the sclerotic the solution had the same effect. Solutions of cocaine similarly injected into the anterior chamber had no effect in producing an opacity. Experiments were also made with cocaine, which confirmed Würdinger's statement that muriate of cocaine makes the corneal epithelium more permeable to staining fluids.

From all this the author concludes that:

(1) A solution of corrosive sublimate 1 to 5000, if present for a short time in the anterior chamber, produces a parenchymatous opacity of the cornea, and if any of the solution remains in the anterior chamber a permanent opacity may result.

(2) Cocaine alone produces no corneal opacity, but by its presence in the anterior chamber increases the effect of the sublimate solution by making the endothelium more permeable; its use, also, by lowering the tension of the globe and favoring the collapse of the cornea, tends to cause the retention in the anterior chamber of the solutions used at operations.

Clinically, this sublimate keratitis in rabbits' eyes resembles exactly that observed in the human eye after cataract extractions where sublimate is used; they are almost certainly identical.

OPACITIES ON THE BACK OF CORNEA AFTER OPERATIONS, FOR SOFT CATARACT.

Fuchs[3] has observed for some years, small dotted deposits on the back of the cornea, chiefly in cases of needling for soft cataracts, but also in other cases of injury to the capsule with resulting swelling of the lens, which are very similar in appearance to those commonly seen in irido-cyclitis. Our author states that they are essentially different from those of keratitis punctata, and in no way the result of inflammation, but consist of small portions of lens-substance, attached to the posterior wall of the cornea. As a rule, some weeks intervene between the operation and the appearance of the dots, but on one occasion they were seen a fortnight afterwards. The under half of the cornea was generally more affected than the upper, and the larger dots were almost always situated at a lower level than the smaller ones. The deposits were all small, although some were much smaller than others, and in no case was there even an approach in size to that of the larger spots of irido cyclitis. Their color was usually gray or yellowish-brown, and in one instance they were so dark-brown as to seem almost black; in this last case it is noteworthy that a few black points remained permanently after the rest had disappeared. It was generally noticed that, even when the spots were for the most part colored, a few white or gray ones could be seen lying among them; these were frequently not so round as the colored spots, but were irregularly angular; in fact, they closely resembled the small opaque lens particles which may sometimes be seen clinging to a swollen lens, or lying at the bottom of the anterior chamber. That these dotted deposits are really small portions of lens Fuchs has no doubt, and his opinion was confirmed by the fact that in one of the six cases — an old traumatic cataract — where the lens contained numerous cholesterine crystals, several similar crystals were afterwards observed to be adherent to the back of the cornea, and surrounded by the more ordinary gray or brown deposits.

The lens-particles, when first broken off, are, as already explained, white or light gray in color, and irregularly angular in shape. But the longer they remain suspended in the aqueous the more rounded they become, owing, as our author thinks, to the edges being polished off by impact against the walls of the anterior chamber. Similarly, the longer they swim about in the aqueous the deeper pigmentation do they show.

SYMPATHETIC OPHTHALMIA FOLLOWING CATARACT OPERATIONS.

DeWecker[4] asks for experience with regard to sympathetic ophthalmia of such operators as have adopted methods of extraction without an iridectomy. His own results show that since he has operated in this manner, he has not had a single case of sympathetic ophthalmia. He says that the disadvantage of excising a portion of the iris lies in the fact that the corneal wound is left in contact with the wound in the capsule, whereby irritation is set up in the iris and ciliary body.

Another objection to the operation of Von Graefe, in his opinion, is that the position of the section in the linear operation is in the extensive pericorneal tissue, which is less likely to result in the rapid formation of an impermeable cicatrix; and he reports that in 1,500 cases operated on after the method of Von Graefe, there were five cases of sympathetic ophthalmia, but in 5,000 flaps extractions, with or without iridectomy, only two cases of sympathetic ophthalmia occurred, both of which happened before the adoption of the purely corneal section.

TUBERCULOSIS OF IRIS AND CONJUNCTIVA.

Knapp[5] reports two interesting cases of tubercular disease of the eye, partly clinical and partly experimental, from both of which inoculating experiments were performed.

Case I was that a man, aged twenty-five, who came under observation in January, 1890, with iritis in one eye of some months' duration. There was moderate circumcorneal injection, and the iris was swollen, dirty-brown in color, with an uneven surface and irregular pupillary margin. A number of grayish-yellow irregular nodules were visible in the iris. Tension was normal, V. $= \frac{10}{200}$.

The eyeball was removed on January 20th; the wound healed readily, and the patient left the hospital four days later and was lost sight of three weeks afterwards.

Immediately after the removal, the eyeball was opened by a meridianal section. The posterior segment appeared normal; the anterior half showed a swollen iris and ciliary body, containing a few hard nodules. No bacilli could be found in sections stained by the Koch-Ehrlich method. On the day on which the eye was enucleated bits of iris tissue were introduced into the anterior chamber of each eye of two rabbits. In one animal the iris became congested, and presented small nodules four weeks later. In the other rabbit, on the thirty-first day, submiliary nodules developed in the right iris, and three days later in the left. These increased in size and number, and by the fortieth day they were numerous and typical in each eye. Between the forty-fifth and forty-ninth days the symptoms began to abate, and in about ten days the nodules had become flat white patches. The rabbit could see, and was in good condition. At the point of inoculation, at the corneal margin, yellow patches and nodules had developed and the cicatrix in the left eye was bulging. A portion of iris was removed from each eye, close to the corneal scar, on the fifty-fifth day, with some of which both eyes of another pair of rabbits were inoculated. In this iris tissue Koch's bacillus was found in moderate numbers. The iridectomy incision healed in each eye, the changes in the irides steadily receded. The rabbit was killed 236 days after the inoculation; no tubercles were found in the eyes or any other organ.

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[3] Sonder-Abdruck aus Beitruge zur Augenheilk., iii, 1891; Ophthalmic Review.

[4] Ann. d'Oculist, February, 1892.

[5] Reprint and Translation of a Paper in the Helmholtz Festschrift, Ophthalmic Review, July, 1892.

Case II is one of great clinical importance, but of equal rarity. It was that of a female patient, aged nineteen, in whom tuberculosis of the conjunctiva started from the wound of a subconjunctival tenotomy for squint. The patient's right eye was amblyopic and deviated strongly inwards. The internal rectus was divided subconjunctivally, and the external rectus tendon advanced.

Five days after the operation the sutures were removed. A few days later the wound beneath the internal rectus tendon showed a grayish-white coating, and there was slight thickening in the region of the tendon. The coating disappeared in the next four weeks and the conjunctival wound healed, but some redness and swelling of the conjunctiva over the tendon remained. Two weeks later there were visible over the inner half of the conjunctiva a group of glassy nodules the size of millet seeds. They were painless, and movable with the conjunctiva. The nodules closely resembled, and were considered to be, trachoma granules, and sulphate of copper was applied daily. They, however, continued to increase, and the præ-auricular gland becoming swollen, Knapp, began to suspect tubercle.

Some of the granules having been cut off, microscopic preparations were made according to the Koch-Ehrlich method, and portions were introduced into the anterior chamber of a healthy rabbit. The præ-auricular gland was incised and scraped, soft granulation tissue being removed. Some of this was prepared for microscopic examination, and another rabbit's eye was inoculated therewith. The tubercle bacillus was found in some of the nodule preparations, but not in those made from the gland tissue.

The patient's eye was, after prolonged general and local treatment, completely cured.

The inoculation experiments all gave positive results, tubercles appearing on the irides about five weeks after the implantation of the granulation tissue. Subsequently portions of iris removed and examined microscopically showed numerous tubercle bacilli, and another rabbit was successfully inoculated with this iris tissue. In the course of some months the eyes were destroyed by tubercles and caseation. None of the rabbits, five months after inoculation, showed tubercles in any other organs.

DACRYO-ADENITIS ASSOCIATED WITH MUMPS.

Th. v. Schroeder[6] reports a case of acute dacryoadenitis during epidemic parotitis. The patient was a female, aged twenty-seven years, married; no previous illness except typhoid fever three years before; well nourished; no syphilis.

On April 6th bilateral parotitis began, in which salivation was not a marked symptom, and on April 10th the left upper eyelid began to swell, and on April 14th the right followed suit.

In the situation of the lachrymal gland a tumor could be felt, which was somewhat tender. The lid could not be everted. Visual acuity and ophthalmoscopic appearances remained normal in each eye. Lachrymal secretion not increased. The patient remained in the hospital till April 30th, by which date almost all symptoms had disappeared.

INCREASE OF MYOPIA.

Batten[7] thinks that the increase of myopia is frequently associated with some vascular disturbance, and cites as favoring his hypothesis that the increase is often attended with the following conditions: (1) Spontaneous hæmorrhages (epistaxis; menorrhagia, retinal hæmorrhages); (2) capillary congestion; (3) cardio-vascular disease (high arterial tension, cardiac hypertrophy, valvular disease).

He admits the fact, that an increase of blood-pressure as a cause of myopia, has been recognized, taught, and accepted by most writers; but the congestion has been supposed to be of a purely local character, and not part of a constitutional dyscrasia, and argues that it is the *constant* high-pulse tension which does the harm, and interferes with the nutrition. The vascular system being well adapted to withstand occasional increase of blood-pressure, he says:

> "A great deal has been written on the prevention of myopia in school children by school hygiene, of which the principal factors are: (1) The prevention of stooping; (2) the avoidance of eye-strain by a good light and good print."

Very much has been done in this way, but its result on the prevention of the increase of myopia has been very disappointing, for the evidence goes to show that the myopia continues to increase in spite of it, and that, as the higher classes are reached, so a larger percentage of myopia is found.

It is generally accepted that myopia is commoner amongst the sedentary, the well-to-do, and Germans; in whom, it is also generally accepted that high arterial tension, when not due to actual disease, is often produced by a full meat diet, rich living, and deficient exercise. Add to this taking of beer or very little fluid, and we have the most favorable conditions for producing high arterial tension, which is caused by the contraction of the small arterioles, due to the presence in the blood of uric-acid and other waste products in excess. This excess is due partly to excess of formation, partly to a gradual accumulation arising from a deficiency in excretion of renal, biliary, intestinal, and cutaneous products.

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[6] Klin. Monatsbl. f. Augenheilk, December, 1891.

[7] Ophthalmic Review, January, 1892.

Now all these conditions we have in the modern city school-child, well-fed (or overfed, for the amount of exercise taken), with hurried meals and insufficient digestion, followed by a hurried walk, and with deficient excretion arising from deficient exercise.

Certain diseases are specially prone to cause the onset or progress of myopia; and while they are not diseases usually classified together, they have certain points in common: they all profoundly affect the general nutrition, and most, if not all, the vascular system.

In rheumatism, not meaning to limit it to rheumatic fever, we certainly have a vascular disease and a nutritional disease, notably affecting fibrous tissues, and hence probably the yielding of the fibrous sclerotic.

That primary syphilis should be followed by myopia is, perhaps, only what might be expected when it affects the eye itself, producing retino-choroidal and vitreous changes. Its tendency to cause vascular and nutritional disease is well known. Mr. Phillips has noticed a connection also between myopia and inherited syphilis.

In one or two young alcoholic subjects (pot-boys) our author found high myopia. Some of his cases point to typhoid fever as the cause of myopia. It certainly affects nutrition, though, as regards its action on the vascular system, he is unable to speak definitely. In two cases of acute myopia, he found phthisis associated. This may be only accidental. In pregnancy, an accepted cause of increase of myopia, we undoubtedly have a nutritional disturbance of the most general kind; and almost every structure is liable to change, and in addition we have a vascular change, namely, high arterial tension.

SPASMODIC MYDRIASIS OF SEXUAL ORIGIN.

Mitchell[8] has recently had under observation five cases of spasmodic mydriasis, two male and three female. They were all under forty years of age, and in each case our author was able to determine to his own satisfaction, that the origin of their trouble was due to an irritation, or at least an over-excitation, of the sexual apparatus. There was a refractive trouble in but one case, where .75 D. hyperopic astigmatism, according to the rule, was found to exist in both eyes. The correction of this gave entire relief from former headache, but did not have any effect upon the attacks of mydriasis, which would return with their wonted frequency. In every case, except one, the trouble was with but one eye at a time, alternating from one to the other.

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Reports of Societies.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

(Continued from No. 23, page 558).

Fifth Annual Meeting, held in Louisville, Ky., November 15, 16 and 17, 1892.

FIRST DAY. — AFTERNOON SESSION.

Dr. Geo. A. Baxter, of Chattanooga, Tenn., read a paper entitled

A NEW OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA.

Dr. Baxter presented a radically different operation in principle from any yet given. It consists in a prolongation of the incision, after the ordinary management of the sac and after ligation, through the internal ring into a more or less extensive laparotomy, as the exigencies of the case demand; lifting the neck of the sac into the abdominal opening above the ring and its fixation there by a deep suturing, cutting off the sac close above the peritoneum and its closure by buried suture, and a final closure of the abdominal opening by this and a more superficial set of sutures which pass across above the closed sac and peritoneum and underneath the deep fasciæ which are intended to approximate the homologous tissues of the abdominal wall. The ring is closed with crucial sutures, dipping over cord and traversing the tissues, and the seminal canal closed with deep sutures alone.

Points of originality claimed: A line of incision suitable for any inguinal hernia, and by the fixation of the sac above the peritoneum a deflection of all abdominal expulsive force from the ring and canal, and the thickened lining of the internal ring, and the method of closure of abdominal incision. Advantages claimed: Quick cure, with avoidance of necessity of truss; deflection of expulsive force from internal opening and canal to abdominal parietes; being able to approach constriction either from without or within; avoidance of necessity for traction on sac or contents; ample room for treatment in diseased conditions of sac or contents, including gut operation if necessary.

Dr. Henry O. Marcy, of Boston, followed with a paper on

THE CURE OF INGUINAL HERNIA IN THE MALE,

in which he said until recently the cure of inguinal hernia in the male had been considered at the best accidental, and when apparently effected, generally doubtful and the hernia liable to return. The great majority of surgeons looked upon an attempt at cure as ill-advised, and believed operative measures should not be undertaken except in cases of strangulation. Dr. Marcy thought there was abundant reason for such conclusions when judged from the earlier history of surgical procedures as attempted for cure. The essential surgical considerations for the cure of hernia were as follows: First, strict aseptic conditions. These pertain alike to all modern surgical procedures. Second, a free dissection. This is necessary in order to lay bare the internal ring, to permit of the enucleation of the peritoneal sac and the separation and elevation of the cord out of the wound. The external epigastric artery often courses in the line of the incision. It is not seldom that the size of this vessel is such that the operator fears he has wounded the larger vessel. Third, the disposition of the sac. The separation of the sac to its very base before removal is to be recommended as a rule. There are times, however, when it is not easy to free the peritoneal pouch, owing to adhesions to the surrounding tissues, and in large, old, irreducible hernia a more or less intimate fusion of the contents to the inner wall of the sac. It is generally better to open the sac before ligating or sawing through its neck, since by so doing the condition at the internal ring is assured, and by such knowledge the operator is often profited even if the sac is completely empty; not seldom the omentum is adherent at the internal ring and even a constricted loop of intestine may escape observation when it is attempted to return the sac unopened.

[8] American Journal of Ophthalmology, January, 1892.

Dr. Marcy closed his paper by saying that between three and four millions of the people living in the United States were subject to hernia; and, if the demonstration is complete that the risk of life is less than one per cent. from the operative procedures instituted for cure, and that scarcely more than ten per cent. are subject to relaspes, and these almost invariably in a state improved by the operation, the plea is a very strong one, to consider favorably the advisability of operation in a very large majority of all the sufferers from hernia.

Dr. W. H. Wathen, of Louisville, read a paper on

THE TREATMENT OF UMBILICAL AND VENTRAL HERNIA.

The importance of studying carefully the best methods of treating hernia is now especially emphasized because of the increased frequency of the disease following laparotomy, and especially because the modern methods of surgery make the operation far less dangerous than it formerly was. The operation for radical cure of hernia in the practice of the best surgeons, except in extreme cases, is practically devoid of danger, and the result may be made permanent. Modern antiseptic and aseptic precautions have practically excluded the danger which formerly arose from infective peritonitis. The author said there are many cases of ventral hernia that could have been prevented had the proper treatment been carried out in the closure of the abdominal wound. In order that there may be no hernia following laparotomy it is necessary to get perfect union by adhesion of all the layers of tissue forming the abdominal wall — the peritoneum, muscles, the deep and superficial fascia, and the skin. But especially must we get union of the layers of fascia, for unless this be done the other layers will gradually separate and hernia will follow. This cannot be done unless we succeed in bringing the cut edges of the fascia in even and perfect apposition long enough for strong union to occur.

SECOND DAY. — MORNING SESSION.

Dr. W. O. Roberts, of Louisville, read a paper on

THE TREATMENT OF UNUNITED FRACTURES BY RESECTION.

He said the treatment of ununited fractures by resection was more than a hundred years old, White of Manchester having done the first operation in 1760. In consequence of the great mortality attending the operation, it was abandoned until revived by Sir Benjamin Brodie. In 1805 Horeau, after having divided the fragments obliquely, fastened them together by tying a metallic wire around them. Rogers of New York, in 1838, passed the wire through holes drilled in the wall of the fragment, and then twisted it. Since then other surgeons have used sutures of various materials in the same way. Some of them left the sutures in permanently, while others removed them after union of the fragments had occurred. Some, instead of drilling the bone, passed the sutures simply through the periosteum. Screws, nails, ivory pegs and clamps have been used for the same purpose. In the long bones, when coaptation of the fragments can be secured, Dr. Roberts feels satisfied that resection and a fixed dressing will be followed by just as good results as when sutures or other contrivances for fastening the ends of the fragments together are used.

Dr. L. S. McMurtry, of Louisville, read a paper entitled

OVARIAN CYSTOMA WITH TWISTED PEDICLE AND PERITONITIS; OVARIOTOMY IN SECOND WEEK OF TYPHOID FEVER; RECOVERY.

Dr. H. Horace Grant, of Louisville, contributed a paper on

INTESTINAL ANASTOMOSIS BY A NEW DEVICE.

For more than a year the speaker has been endeavoring to perfect some instrument to simplify direct suture, but it has been so difficult to get just what he wanted that time has not been allowed since the completion of the instrument to test it fully. It is to be used only after resections. The two blades of the clamp are oval scissors, one-fourth of an inch in transverse and two and a half inches in longitudinal diameter. The arms of the clamp are made long enough to allow of introduction full five inches. After the gut is exposed, a strand of iodoform gauze is passed through the mesentery and constricts the intestine fully six inches from each point of intended resection. The mesentery is tied off over the portion to be resected with fine silk, in two inch loops, cut close and dropped in the usual way. When the resected portion is removed the gut ends may be washed out if desired. While the two ends of the divided intestine are held parallel, one blade is entered in each, allowing at least one and one-half inches of gut beyond the proposed anastomotic opening to permit of invagination of the ends. The clamp is tightened and the two surfaces thus firmly held are rapidly stitched together by a continuous overhand Lembert suture of fine silk. Two rows of parallel sutures, as suggested by Abbe, may be used if desired, though it has seemed that one is enough according to the author's experiments. The work can be done far more rapidly and accurately than without the clamp. When the suturing is finished, the clamp is tightened if need be, and a long-bladed dressing-forceps passed in the bowel, and the oval plug removed or pushed in. The scissors action of the blades, together with the ten or fifteen minutes pressure, prevents any hæmorrhage. The clamp is now withdrawn and the ends invaginated in the usual way.

Dr. A. V. L. Brokaw, of St. Louis, thought the instrument exhibited by Dr. Grant a good one, and said that anything which materially assisted the surgeon in making intestinal anastomotic operations rapidly was of great value, that time was a most important element. The use of rings, plates and mats in the past was bad. He believed that we could suture far more rapidly with Dr. Grant's instrument than with any other device he had thus far seen.

Dr. W. E. B. Davis, of Birmingham, Ala., believed a large number of operators had abolished all mechanical devices in doing intestinal anastomosis. His brother (Dr. John D. S. Davis), had devised a rubber plate and mat, but now prefers not to use the plate. In the case of resection of the bowel, he thought the device of Dr. Grant was an ingenious one, inasmuch as it would facilitate the work of the surgeon and enable him to do an operation very quickly. He had conducted a series of experiments in an effort to do away with mechanical devices, by which surgeons might use the end-to-end operation by splitting up the bowel. While the operation was successful in some cases, the strain on the circulation was too great, and he now condemns the operation.

Dr. G. Frank Lydston, of Chicago, directed attention to Dr. J. B. Murphy's anastomosis button, a recent device, by which he says cholecysto-enterostomies can be done in from eight to twelve minutes.

SECOND DAY. — AFTERNOON SESSION.

The Association was called to order at 2.30 P. M., with the First Vice-President, Dr. C. Kollock, in the chair.

The **President** delivered his annual address. He took for his subject

COMPATIBILITY OF CONSERVATIVE AND AGGRESSIVE SURGERY.

He said the circumspect philosophy of former days taught us, what man has done, man may do. But the developments of more recent times say, whatever is practicable may be undertaken, without regard to precedents. Conservative and aggressive processes are combined in progressive surgery. Conservatism in the use of all the appliances of surgery is not inconsistent with the application of the most energetic means of relief in structural disorders. A misapprehension exists with many of our profession as to the true sphere of progressive surgery; and it was the purpose of President Gaston on this occasion to make a distinction between rashness in the employment of operative measures and boldness in the use of surgical means of relief when clearly indicated. Real advances in surgical practice have not been the result of cutting and slashing without due consideration, but have accompanied the painstaking investigation of the conditions requiring the knife, and caution in the performance of operations. As a preliminary to any surgical procedure of a radical nature, correct diagnosis is essential; but to accomplish a proper understanding of a deep-seated disorder, it is often requisite to make an exploratory operation of greater or less magnitude. The information based upon such an exploratory measure serves as a guide to any further surgical procedure. Dr. Gaston said that ignorance and inexperience often lead to sad results in meddlesome surgery, when limbs are sacrificed or organs mutilated, to gratify the desire to figure as a bold operator on the part of a would be surgeon. In such cases no high-toned member of the profession should shield the culprit from the charge of malpractice or from the assessment of damages by a court of justice.

Dr. A. M. Vance, of Louisville, read a paper on

A PLEA FOR MORE RAPID SURGICAL WORK,

in which he said a great number of surgeons pay little attention to the time consumed in an operation, or to the nicety of manipulation and dexterous use of instruments that our forefathers prided themselves upon. He had seen on numerous occasions the work of our most distinguished surgeons, and had seen deaths occur from prolonged anæsthesia and too much time consumed in operation which would not have taken place, if much unnecessary time had not been wasted. The habit of starting the anæsthetic before all preparations were completed was very reprehensible.

The paper was discussed by **Drs. Arch, Dixon, Rufus B. Hall, Geo. A. Baxter**, and **Edwin Ricketts**, all endorsing the position taken by the essayist.

Dr. Charles A. L. Reed, of Cincinnati, contributed a paper on

SURGERY OF THE URETERS, WITH A REPORT OF CASES.

He said that surgery of the ureter is one of the developmental subjects of abdominal surgery. These out-of-the-way conduits, exercising functions that are vital in character, were liable to diseased conditions which baffle the resources of the diagnostician and tax the ingenuity of the operator. For purposes of diagnosis the physical means at our disposal may be briefly summarized as follows: (1) Exploration of the lower end of the ureter by digital examination; (*a*) through the vagina, (*b*) the rectum, and (*c*) the bladder. (2) Exploration of the lower end of the ureters by the sound passed through the urethra and bladder into the ureters. (3) Exploration of the central portion of the ureters by abdominal lumbar palpation — an expedient of practical value only in cases of extreme ureteral distension occurring in very thin subjects. (4) Exploration of the upper end of the ureters by exploratory nephrotomy. Each of these several expedients might be amplified, but it would be uncalled for in the presence of such distinguished members.

Dr. Reed said that since catheterization of the ureters has been popularized in this country, chiefly through Kelly, and since the technique of the procedure has become understood by those who have studied it, the diagnosis of disease within and surrounding these tubes is vastly more common. The digital exploration of portions of the ureters lying within easy reach from the vagina or rectum is readily practised by those who have carefully studied the anatomy of the parts. Digital exploration through the urethra and bladder is an easy expedient so far as the surgeon is concerned, and often leads to the elucidation of important pathological facts; but the speaker is forced to believe that it is not without danger to the patient. He has been forced into this belief by one case of incontinence lasting for nearly a year and by two cases of weakened power of retention, one of which is now of quite two years' standing. Dr. Reed said that abdominal section for diagnosis of ureteral conditions, notably in cases of suspected calculus, is entirely justifiable. He then reported a case of peri-ureteritis, stricture, kolpo-cysto-ureterotomy, with recovery. The second case was one of cicatricial stricture of an excised ureter, hydro-nephrosis, nephrectomy, with recovery. The third case, one of hydro-nephrosis, nephrectomy, remaining ureteral disease.

Dr. Wm. W. Potter, of Buffalo, read a paper on

SPECIALISM IN MEDICINE, PARTICULARLY AS RELATED TO SURGERY AND GYNECOLOGY.

He summarized his argument thus:

(1) There is essential need for specialists. Divisions of labor in every field are demanded, and nowhere more than in medicine.

(2) Specialists being a necessity, they must equip themselves by years of study, and devote themselves to a still greater number of years of general practice before they are justified in offering themselves as specialists.

(3) They must conduct themselves in such a way as to merit the respect of the general practitioner, and to invite his co-operation in their work.

(4) The unwritten ethics of specialism demand that there shall be reciprocal relationship maintained, not only among specialists themselves, but also between specialists and general practitioners.

(5) The opportunities for perfection in special lines of medical study are so great and medical literature in both journalistic and text-book form is so rich, that an awful responsibility is entailed.

(6) The schools ought to discourage any and all students who give promise of entering upon the practice of a specialty as soon as the college doors are passed, and that before the swaddling clothes of the professional tyro are slipped.

DR. R. M. CUNNINGHAM, of Birmingham, Ala., followed with a paper entitled

THE GENERAL PRACTITIONER AS A GYNECOLOGIST.

He said the general practitioner should not undertake work that can be better and more safely done by the specialist, provided one is obtainable. He should be willing to do and attempt the most radical and dangerous operations when necessary to save life, provided a specialist or one better prepared to do the work cannot be obtained. In cases not necessarily dangerous, or in which life does not become more or less a burden, but in which a cure can be effected only by a radical procedure, but which may be materially benefited, or symptomatically relieved by milder methods, he should adopt the latter and not the former. In many cases the field is clearly his own, belongs to him, and he should be prepared and competent to treat them with safety and success.

DR. W. F. WESTMORELAND, of Atlanta, read a paper on

SPECIALISM IN MEDICINE.

He said there were two kinds of specialists, the one with his preconceived ideas, which become warped, who always suffers froma stigmatism, etc, who is a graduate of his kind. The other kind was the man who has worked his way by his generally acknowledged ability in any particular line.

DR. HOWARD A. KELLY, of Baltimore, read a paper entitled

A PRELIMINARY REPORT ON THE MORPHOLOGY OF OVARIAN AND MYOMATOUS TUMORS.

The speaker said the form of abdomen characteristic of large ovarian cysts is a globular or ovoid distention of a part or the whole of the abdominal wall, pushing out the infra-umbilical portion much more than the supra-umbilical, at least so long as the tumor occupies the lower half or two-thirds of the abdomen. This enlargement is uniform in parovarian cysts and polycystic tumors, exhibiting but few bosses, due to the fact that the latter are composed of one or two large cysts associated with a mass of smaller ones, and the large cyst is best accommodated in the median line in the distended concave anterior abdominal wall, while the smaller ones at the side or back consequently do not show. Prominent exceptions to the general rule just enunciated that pelvic tumors distend most markedly the inferior abdominal zone are the notable stretching of the upper abdomen in very fat women with large ovarian tumors, and the like distention in rachitic dwarfs in advanced pregnancy. Nodular myomata, on the other hand, stand out in marked contrast to the smooth outlines of cystic tumors in giving to the lower abdomen a lumpy, bossed appearance, thus exhibiting through muscles and skin a softened exaggeration of their irregular outlines. This peculiarity still remains prominent although softened, after these tumors have undergone fibrocystic degeneration.

Cystic tumors filling the pelvis and part of the abdomen are but rarely found to originate in some upper abdominal tumor. The speaker presented for demonstration a photograph of an enormous kidney, containing over a gallon of pus, extending from the pelvis floor up through the abdomen and pushing up the left ribs.

(To be continued.)

NORFOLK DISTRICT MEDICAL SOCIETY.

J. C. D. PIGEON, M.D., SECRETARY.

MEETING at Brookline, November 29, 1892.

Two interesting papers were read:

INTERMITTENT FEVER IN BROOKLINE,[1]

by DR. H. L. CHASE; and

COMPLEX FORMS AND SEQUELÆ OF INTERMITTENT FEVER,[2]

by DR. H. M. CUTTS, both of Brookline.

DR. C. H. COOK, of Natick: In the paper of Dr. Cook, incorporated in the Report of the State Board of Health, 1890, it was stated that many Massachusetts towns, presenting conditions favorable for the development of intermittent fever, had as yet not been visited by it. During the past week reports had been requested from those towns, and from most of them returns had been received. With the exception of three or four they are all still free from the disease. Winchester and Woburn report a good many cases. Essex County is still free.

In the river valleys the condition is as folllows: Malaria prevails all along the Connecticut River; on the Charles, in nearly every town; on the Sudbury, in every town as far as Concord; on the Assabet there is none, although the conditions are the same as on the Sudbury; on the Concord River there is none from Concord to Lowell; and on the Nashua no cases have been heard of.

In Natick there are fewer simple cases than four years ago; but more of continued fever, lasting a week or more, and also of diarrhœa, both yielding to quinine. During pregnancy, treatment should be energetic, since abortion is probable. Dr. Cook mentioned a case, occurring soon after confinement, which soon became critical. Quinine was given every few hours, for a week, before relief was obtained.

It is wise to include in case-records a statement of prevailing meteological conditions, as of weather, rainfall, temperature, etc.

DR. ABBOTT, of the State Board of Health, had no personal experience to offer, as the disease does not prevail in his town. He referred to the Housatonic Valley, where malaria appeared in 1878, and was very prevalent for several years, but is now almost gone.

Dr. Adams, of Pittsfield, was quoted as follows: "In New England, intermittent fever is a tender exotic; it does not belong here, appears only when conditions are most favorable, and disappears when they are changed. . . . One condition favoring the occurrence of malaria is the alternate exposure and submergence of muddy soil, as seen in the case of the dams at Lenox."

Household sewage discharge, continued Dr. Abbott, is probably not a factor in inducing malaria; but digging up the soil, for sewers, dams, etc., has evidently some effect. In filling ponds and swamps use only soil free from organic matter, gravel and sand being the best material.

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[1] See page 565 of the Journal.

[2] See page 567 of the Journal.

Dr. Baker, of Newtonville, stated that he saw some of the earliest cases in Newton, at the Lower Falls, in 1885. Now it prevails from the Upper Falls to tide-water at Brighton. In Weston, it appeared first in low ground, but three years later it invaded higher sections. In wet seasons it will appear on high land late in the season. Winds which blow across swampy regions seem to carry the disease to more favored sections. Several outbreaks have been noticed ten days after a thaw. When it first appears, many cases are puzzling and might easily pass unrecognized. In children, the chill is often replaced by a convulsion. Abortion at the fifth or sixth month is a common result of malarial infection during pregnancy. Quinine does no harm, and should be freely used. The new sewage system in Newton has rendered some sections quite free of the disease.

Dr. Morse, of Roxbury, reported three or four cases from the Canterbury Street region, where land has been extensively dug up in constructing a pond.

Dr. Arnold, of Roxbury, stated that the first indigenous case in Boston, appearing at the City Hospital out-patient service, was in the fall of 1888, coming from a swampy section of Roxbury. Since then these cases have greatly increased in frequency, coming mostly from Dorchester and South Boston. Twelve cases from the city proper have appeared at that place.

Dr. Sparhawk, of West Roxbury, reported meeting three cases recently in that place, and one at Brook Farm. It is also common in Dedham.

Dr. Baxter, of Hyde Park, reported a large number of cases in Hyde Park, mostly near the river, but some on high land.

Dr. Rogers, of Dorchester, mentioned two cases of probable remittent fever, occurring along a tributary of Stony Brook, after a hot, dry summer. The first case began with a chill, intense headache, nausea, vomiting and violent gastric pain. It was at first considered typhoid; but the patient soon rallied and was well for a week, when tertian intermittent set in. Soon the first set of symptoms reappeared. Quinine was given freely, and the patient got well. The second case was similar, but without relapse.

Dr. Greene, the President, had in 1886, reported many cases along the Neponset River. Later, for some years, there was very little of it; but it has now reappeared. Years ago a returned soldier had an attack of coma, lasting some hours. This recurred on the third day. Quinine was given, and there was no return.

Dr. T. E. Francis, of Brookline, remarked that no malaria attended the building of the Brookline Reservoir. Typhoid dysentery prevailed among the laborers at that time, and typhoid when the Chestnut Hill Reservoir was built.

Dr. G. K. Sabine mentioned the difficulty of recognizing early cases. Many cases present dyspeptic or dysenteric symptoms for several days before the chill appears, and may simulate typhoid fever.

The Russian government has promised pensions to the families of physicians who die of cholera.

Recent Literature.

The Science of Nutrition. By Edward Atkinson, LL.D., Ph.D. Springfield, Mass.: Clark W. Bryan & Co. 1892.

This book of 179 pages contains not only much valuable information upon food questions by the well-known expert Mr. Atkinson, but also several special papers upon allied topics by Mrs. E. H. Richards, Prof. W. O. Atwater, Mrs. Abel and Miss Daniell.

The book consists of a compilation of brief papers on subjects relating to food preparations, economy of food and fuel, and methods of cooking. In addition it contains many useful recipes for preparing food, a description of the Aladdin Oven which has been perfected by Mr. Atkinson, and many condensed tables giving the composition of the principal articles of food in daily use, their potential energy, and nutrient value.

It is needless to say that this work ought to be found in the library of every physician who appreciates the value of food, not only therapeutically, but as one of the essentials of healthy living. It should find a place in the kitchen of every intelligent housekeeper.

Stories of a Country Doctor. By Willis P. King, M.D. Philadelphia: Hammel & Parmale. 1891.

The author of this book of stories — good, bad and indifferent — seems to have had quite a varied experience as a Western practitioner. In his preface he gives the following among other reasons for writing this book:

"I desired to give the world the benefit of what I had learned of humanity in a quarter of a century's practice. I desired to give the praise due to the honest, conscientious and hard-working men in my profession — the noblest and most unselfish humanitarians that grace the earth with their noble deeds — as well as to put on record the good, the beautiful and true in human nature which we find in connection with our life-work.

"I also wished to hold up before the light of public scrutiny and to properly excoriate the quacks and scoundrels who infest our communities, and by their falsehoods and frauds bring disgrace on a noble calling, as I desired to properly characterize and satirize those who hinder our work by their ignorant superstitions, their selfishness and vanity."

Saunders' Pocket Medical Formulary. With an appendix, containing posological table, formulæ and doses for hypodermic medication; poisons and their antidotes, etc., etc. By Wm. M. Powell, M.D., Philadelphia: W. B. Saunders. 1892.

This book, of about 275 pages, contains 1,750 formulæ selected from several hundred authorities, forming a handsome pocket manual, and is designed to be of immense help to the general practitioner, who is supposed to rely upon such ready-made prescriptions in the exercise of his daily calling. Lest there should not be enough of these formulæ grouped around each disease, alphabetically-arranged, blank pages are intercalated here and there on which the physician can copy the best prescriptions which he finds in his medical journals. In this way, he ought to be armed, and thrice armed, for every emergency.

Those who depend on this kind of help, will doubtless find this just the book they have been long looking for.

THE BOSTON

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THE TWENTY-THIRD ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS.

MORE than two-thirds of the report of our State Board of Health deals with the investigations of the Board regarding water-supplies and sewerage, as required by the legislature, in accordance with the law of 1888. The six hundred and fifty pages devoted to these important subjects are packed with useful information, which becomes more sought after each year by engineers, sanitarians and the towns and cities of the Commonwealth. In the chemical and biological laboratories at the Massachusetts Institute of Technology 1,526 samples from old or proposed water-supplies were examined, chemically and microscopically, and some for bacteria. Twenty-three towns were advised as to their sources of supply. In eighteen cases the Board was consulted with regard to sewerage and sewage disposal; twice in reference to the pollution of streams.

Nearly all the examinations of eight rivers (in the case of three once a month) have shown an increasing pollution of the streams from the rapid increase in population and manufactures. At Worcester, Framingham, Gardner and Marlborough attempts at purification of sewage have begun.

By the interesting tables of rainfall, flow of streams, and water-supply statistics, we learn that all of the cities and 114 towns, or 86.6 per cent. of the total population of the State, are provided with a public water-supply.

Of forty-five samples of spring-waters which are sold publicly, twenty-three were found satisfactory: the others showed indications of contamination from direct sources of pollution near them, but they had become so far purified by oxidation and filtration through the ground as not to be injurious at the time of examination. The appended descriptions of these various springs will be useful to the wary purchaser.

The effect of the aëration of natural waters, the amount of dissolved oxygen contained in waters of ponds and reservoirs at different depths, and methods of microscopical examination of waters are made the subjects of interesting monographs.

The experiments upon the filtration of water and upon the purification of sewage at the Lawrence experiment station have continued under the same able direction as hitherto. In all, 2,347 samples were examined chemically and bacterially, and 580 more bacterially. These investigations cover every point which can be raised in the application of the subject to our conditions of soil, climate, character of sewage, etc.

The biological work has consisted in part, as in former years, in the systematic examination, both microscopical and bacterial, of the applied sewage, of city water and canal water, and of the effluents of the different filters of sewage or water. Great attention has been paid to the study of the typhoid bacillus and to discovering a certain means of identifying it, with the satisfactory result, after many months of laboratory work, that it has been found that it is possible to separate the bacillus of typhoid fever from all other bacteria, including the five of the so-called "pseudo-typhoid" bacilli found there, which have been hitherto discovered in the Merrimack River. The typhoid bacillus is capable of life for three weeks in the river, long enough to pass from the Lowell sewers to the Lawrence water-supply reservoir.

A source of bad odor and taste, new to our water-supplies, the *uroglena*, has been made the subject of a most searching investigation and interesting paper.

During the year ending September 30, 1891, there were 4,870 samples of food examined, of which 1,664 were found adulterated or not conforming to the statutes; 2,726 of these were milk, with a percentage of adulteration of 40.2. Of 424 samples of drugs 352 were found of good quality.

From the examination of several thousand specimens of wall papers in thirteen years, Dr. Hill concludes that between sixty and seventy per cent. of the papers sold in the State are free from arsenic, while about six per cent. contain more than one-twentieth, and about three per cent. more than one-tenth, of a grain of arsenious acid per square yard; that the percentage of papers containing more than one-tenth of a grain to the square yard has not diminished during the past three years; that it is practicable to manufacture wall papers which shall contain less than one-twentieth to one-tenth of a grain per square yard; that arsenic is not essential to the production of the colors; that the claim of the paper manufacturers that the arsenic present in their products is an unavoidable impurity is not borne out by the facts. Dr. Hills points out the danger from the "glazed and plated" arsenical papers that are freely sold for wrappers, boxes, covers, for children's use, etc., although their dangerous character has repeatedly been pointed out, from textile fabrics and from water-colors used in decorating interiors of houses.

The weekly returns of mortality made to the Board, of which there is an analysis showing the seasonal fluctuations in the prevalence of the several diseases, and the notes upon the health of towns show an increasing interest on the part of local boards of health. But they also indicate the value of further legislation to make the relations between them and the State Board more direct and closer.

Somewhat over a hundred pages are devoted to the twenty-years mortality from measles, scarlet fever, diphtheria (including croup), small-pox, typhoid fever, cholera infantum, phthisis, pneumonia, with a colored chart for each, to indicate the distribution in the different parts of the State of the several diseases. The results furnish to the various towns a ready means of ascertaining their health-chart and to individuals a very useful sanitary topographical map, which must prove of great value.

The general report of the routine work of the Board deals with infection-diseases, so far as investigations were called for; the relation of schools to infection-diseases; the examinations already referred to as required by law; the manufacture of clothing in unsanitary places; noxious and offensive trades; municipal health organization.

The general expenses of the Board were $9,910,30; for food and drug inspection $10,019,41; water-supply and sewerage $26,236,74. So generous an expenditure in behalf of the public health has been amply justified in the results obtained and justifies the hope that an appeal to the wisdom of the legislature would extend the usefulness of the Board in other directions.

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ACUTE PANCREATITIS.

On another page of this issue of the Journal Dr. Day, of Providence, reports a case of pancreatitis with hæmorrhage, accompanied by remarks upon acute pancreatitis and diseases of the pancreas by the reporter of the case, by Drs. Fitz, of Boston, and Noyes, of Providence.

Of late years, since more general attention has been directed to affections of the pancreas, especially by the Middleton-Goldsmith Lecture of 1889 (Dr. Fitz), the number of recorded cases of pancreatic hæmorrhage and hæmorrhagic pancreatitis has increased, and it has become evident that disease of this organ is considerably more frequent than had been previously supposed. If extension of a gastro-duodenitis through the pancreatic duct is accepted as a source of pancreatitis, it is not surprising that this should be the case.

A large proportion of the recent literature of this subject in English has been published in the Journal, and a good many of the illustrative cases have, it so happens, been first reported in its pages. Besides the Middleton-Goldsmith Lecture, previously referred to, there has appeared a paper by Prince, reviewing the subject under the title of "Pancreatic Apoplexy,"[1] and presenting two cases. In this paper the recorded cases were divided into apoplectic and subacute — the latter class comprising the cases in which life was prolonged from thirty-six hours to twenty days. Prince's apoplectic cases included two of Dr. Draper's, of which one was previously reported in the Journal.[2]

In 1886, Draper (F. W.) reported five cases of pancreatic hæmorrhage and sudden death in a paper read by title at the meeting of the Association of American Physicians, and published in the Journal.[3] These cases included the one previously reported. In 1889, Harris (F. A.) reported a case of pancreatic hæmorrhage.[4]

The suddenly fatal result, and the obscure preceding symptoms in some of these cases render it natural that they should come into the hands of the medical examiner.

The liability of the pancreas to hæmorrhage has been amply demonstrated, as well as the fact that the conditions of its occurrence vary, but the recently published cases have not materially advanced our knowledge of the etiology of pancreatitis.

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THE ADVANTAGES AND DISADVANTAGES OF FEDERAL QUARANTINE.

Some time since the special Committee on Quarantine of the New York Board of Health sent out a series of questions in regard to this subject to various officials and experts for discussion. Among those who have thus far replied are Dr. John S. Billings, U. S. A., and Dr. Walter Wyman, Supervising Surgeon-General U. S. Marine-Hospital Service. The former states that everything favors a National Quarantine, although the cost would be greater. The trouble would come, he thinks, from local boards of health, anxious for patronage and the spending of money, who would insist upon the State right of police, and so create a double quarantine in some ports, to the detriment of the public welfare. Dr. Wyman states that quarantine administration in foreign countries can furnish little aid to the United States in the way of precedents. National quarantine, he says, is limited by needs of specific legislation in the matter of establishing quarantine stations and plants, and by a want of clearly expressed form to enforce a good sanitary condition of vessels at points of departure. While State quarantine is sometimes efficient and sometimes defective, he thinks a National quarantine, administered with a clear insight into the requirements of commerce, as well as with a profound regard for the public health, would decidedly lessen the existing imposts on commerce.

The advisory body of physicians appointed by the special Committee of the New York Chamber of Commerce to consider the administration of quarantine at that port has reported that the present health officer, Dr. Jenkins, has not shown sufficient executive ability or knowledge of sanitary science to warrant the belief that he can in future manage quarantine affairs in a satisfactory and safe manner.

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[1] Vol. cvii, 1882, pp. 28, 55.

[2] Vol. ciii, 1880, p. 615.

[3] Vol. cxv, 1886, p. 393.

[4] Vol. cxxi, p. 606.

The Committee itself, consisting of Messrs. A, E. Orr, Seth Low, S. D. Babcock, J. Pierpont Morgan, Austin Corbin, in their report to the Chamber of Commerce just published, state that they are clear that the recent quarantine experience of New York points with singular emphasis to the importance of a national quarantine. They sum up the arguments in its favor, as drawn from this experience, as follows:

> (1) The Federal Government being an indispensable factor in every quarantine crisis, it is only by giving to the Federal Government complete control that conflicts of authority and the weakening effects of official jealousy can be avoided.
>
> (2) The Federal Government, in every crisis, through the various arms of the public service, is able to command an amount of expert co-operation entirely beyond the reach of a State department.
>
> (3) The Federal Government has at command the trained men who have to be summoned to the help of the State in time of peril. It is better to have the Federal Government directly responsible, instead of indirectly.
>
> (4) To these may be added the further consideration that the co-operation of Consuls with the quarantine officials is a matter of growing importance. The health officer complains that he failed to receive the aid from this quarter to which he was entitled. It is clear that these officers would be less likely to be at fault as toward Federal officials.
>
> (5) An international supervision of infectious diseases is a probable and a very desirable outcome of recent experiences. Such an outcome of itself would necessitate a national quarantine.
>
> It may be pointed out that the Federal Government already has control of quarantine on the Pacific coast and at certain points on the Atlantic.
>
> So far as the harbor of New York is concerned, the spit of Sandy Hook seem to offer every facility for an ample and effective quarantine under the administration of the United States Government.

In regard to the present health officer of the Port of New York, the general opinion seems to be that he represents Tammany rather than the theory or practice of modern sanitation.

◆

MEDICAL NOTES.

The Sixth Annual Meeting of the National Association of Railway Surgeons, embracing the United States of America, the Dominion of Canada, the Republic of Mexico, will be held at Omaha, Neb., the last Wednesday, Thursday and Friday of May, 1893. The general subject for discussion will be "Injuries of the Cord and its Envelopes without Fracture of the Spine."

Typhoid Fever in St. Louis. — During the month of November the number of cases of typhoid fever in St. Louis rose from 86 in the first week to 930 in the fourth. It occurred mostly in the central part of the city where hydrant water is used almost exclusively. The water-supply is taken from the river at a point just below a group of bone burning and rendering factories. Sewers which drain a considerable area, in which these factories are situated, discharge into the river not far above the spot where water for the city is taken. It is reported that typhoid fever had prevailed for some time in the suburban towns. After several severe rain storms the number of cases in St. Louis rose very rapidly.

Quack Medicine at the Columbian Exposition. — The authorities of the World's Columbian Exposition have wisely determined to exclude patent medicines. In the pamphlet on classification and rules, rule fifteen reads as follows: "Articles that are in any way dangerous or offensive, also patent medicines, nostrums and empirical preparations whose ingredients are concealed, will not be admitted to the Exposition." It is perhaps to be regretted that this opportunity is not used to show the public to what proportions the manufacture of secret remedies has attained in this country; but there can be no doubt that by excluding them the dignity of the exhibition and of the country at large will not suffer.

Vaccination and Small-Pox in Germany. — For several years there has been a system of public vaccination in Germany, the results of which are shown by statistics compiled in the Imperial Health Office applying to the small-pox mortality for 1890. Fifty-eight deaths occurred in the German Empire, which was 111 less than the average of the former four years. Of these 49 occurred on the frontier, and 15 occurred in children under two years of age who were probably not vaccinated. As compared with German towns, there were 10 times more deaths from small-pox in Swiss towns, 13 times more in Hungarian, 14 in Belgian, 56 in French, 60 in Austrian, and 97 in Italian. The highest death-rate from this disease in German cities was 2.4 per hundred thousand in Bremen, whereas in Madrid it was 562 and in Venice 335. For four years previous the average yearly death-rate per million inhabitants from small-pox was 963 in Spain, 536 in Italy, 471 in Austria, 231 in European Russia, 16.2 in England, 5.7 in Holland, 3.5 in Germany, 2.9 in Scotland, 1 in Ireland and 0.9 in Sweden. The following points are especially noted: Small-pox has in every outbreak been traced to introduction from abroad. A large proportion of the attacks affected people who were not natives of the country. The course of the disease was always mild in the revaccinated.

Doctors and Nurses. — During the time of the cholera epidemic in Hamburg a company of English nurses went from London to give what assistance they could in the afflicted city. After their return, one of them, in a lecture to nurses, complained of the attitude of resident medical officers towards hospital nurses. They were accused of being supercilious, harsh and impertinent, and of showing a want of good manners. Sir Spencer Wells, in proposing a vote of thanks to the lecturess, explained the embarrassing situation of young medical men in the hospitals. Years ago when he was a student, the nursing was carried on by handmaids of the type of the defunct but rejuvenescent Mrs. Gamp. There could be no question of behavior under these circumstances, but things have changed since then. Permanent day nurses are largely recruits from among the educated and prepossessing, and the resident medical officer has to choose between an attitude of amiability which may be misconstrued into matrimonial designs, or one of stolid dignity, that, apparently, which caused the ire of the lecturess.

BOSTON AND NEW ENGLAND.

Bequests to Public Institutions. — By the will of the late T. O. H. P. Burnham the following institutions, among others in Boston, receive bequests: Massachusetts General Hospital, $250,000; the Children's Hospital, the Lying-in Hospital, Perkins Institution for the Blind, Massachusetts School for Idiotic and Feeble-minded Children, $5,000 each; Boston Dispensary, Consumptive's Home, New England Hospital for Women and Children, $2,000 each.

Scarlet Fever in South Framingham. — By order of the local school committee and board of health the schools in South Framingham have been closed until after January 1st, on account of the existence of scarlet fever in the town.

The Water-Supply of Providence, R. I. — According to the annual report of the Superintendent of Health, the public water-supply of the city of Providence, R. I., remains in an unsatisfactory condition. A considerable amount of sewage is discharged daily in the Pawtuxet River. This appears to have been the cause of an outbreak of typhoid in 1888, and may become so at any time in the future.

NEW YORK.

Typhus Fever. — Two or three additional cases of typhus fever have been discovered among the frequenters of the down-town lodging-houses. One of these was found in the alcoholic wards of Bellevue Hospital. On December 6th the man walked into Bellevue himself, suffering from alcoholism. On the 9th, typhus openly declared itself, and he was at once removed to the hospital for contagious diseases on North Brother Island, where he died on the morning of the 10th. Under instructions from Acting Chief-Inspector Dillingham of the Bureau of Contagious Diseases, thirty-two patients in the alcoholic wards of Bellevue, who had thus been exposed to the infection of typhus, were quarantined, and will be kept under surveillance for a period of three weeks. On the whole, the health of the city continues remarkably good for this season of the year. For the week ending December 10th. the mortality represented an annual death-rate of only 19.54 per thousand of the estimated population, while the average death-rate for the corresponding week during the past five years has been 21.60.

Wire Mattresses in Lodging-Houses. — At a meeting of the Board of Health held December 7th, Dr. Joseph D. Bryant, as Chairman of the Sanitary Committee of the Board, recommended that all the lodging-houses in the city should be equipped with wire mattresses, to take the place of the textile mattresses now used. He also advised that in every lodging-house there should be provided a room for isolating lodgers suffering from or suspected of being affected with contagious diseases. With a view to accomplishing these ends it was ordered by the Board that no permits for lodging-houses should be granted after the first of April next, unless wire mattresses and an isolating room were provided by the proprietors.

Dr. James R. Leaming. — The death of Dr. James R. Leaming is deeply deplored by the medical profession of New York. While he was honored and looked up to on account of his pre-eminent position in his special department, his simplicity of character and his genial and affable disposition made him universally beloved. With his devotion to medical science was combined an ingrowing love of art, and the walls of his residence, from basement to garret, were crowded with well selected pictures, many of them authenticated works of the old masters.

Dr. John Strong Newberry, Professor Emeritus of Geology in the School of Mines of Columbia College, died in New Haven, December 7th. Professor Newberry, who was born in Windham, Conn., in 1822, graduated from the Western Reserve College in 1846, and from the Cleveland Medical School. He studied abroad for two years, and then began the practice of medicine in Cleveland, where he remained until 1855. In that year he assisted as geologist in the exploration of the country between San Francisco and the Columbia River, and in 1857-58 was attached to the expedition of Lieut. Ives for the exploration of the Colorado River. He also took part in the exploration of the San Juan and Upper Colorado Rivers, and eventually became known as one of the most eminent geologists in the United States. During the war he was a member of the Sanitary Commission. In 1866 he was appointed Professor of Geology in the School of Mines of Columbia College, which position he held up to the time of his death, having been made Professor Emeritus a year ago on account of failing health. He was the recipient of many honors both at home and abroad, and he had been President of the New York Academy of Sciences since 1867.

Miscellany.

VON PETTENKOFER ON THE COMMA BACILLUS.

Von Pettenkofer delivered an address recently before the Munich Medical Society on the recent epidemic of cholera at Hamburg. He himself and Professor Emmerich, during the month of October, experimented upon themselves by swallowing fresh cultures of the comma bacillus, the stomach being empty and the small quantity of hydrochloric acid neutralized by bicarbonate of soda.

These experiments show conclusively, he thinks, that the comma bacillus during its sojourn in the intestine does not produce the specific poison which causes Asiatic cholera, and they agree with the results obtained by Bouchard, who was able to induce the symptoms of cholera in rabbits by giving them the excreta (alvine or urinary) of human cholera patients, but not by giving them pure cultures of comma bacilli or their metabolic products. Anticipating the possible objection that both he and Emmerich had suffered from an attack of genuine cholera, though very slight, he brings witnesses to the contrary in the persons of the well-known physicians Professor Bauer and Dr. von Ziemssen, both of whom have had considerable experience of cholera. While not denying that the comma bacillus has some etiological importance he cannot believe it is the x which without the assistance of y, can cause epidemics of cholera. He reiterated his well-known views on the influence of the soil, especially in connection with the rainfall. His practical teaching may be summarized in the formula that it is the y, that is, the local physical and sanitary conditions, that must be attended to; each place must, in short, be made cholera-proof by sanitation.

THE CHOLERA GERM IN CIGARS AND TOBACCO.

THE Hygienic Institute of the University of Berlin has published the following conclusions, after repeated experiments made with relation to the spread of the cholera germ through cigars and tobacco.[1]

The comma bacilli of cholera Asiatica die through drying up on dried tobacco leaves even quicker than through drying up on glass, and in this condition they die in an hour on the average. On moist tobacco leaves the comma bacilli do not increase, and are killed after a short time. The comma bacilli were not proved to exist in the examples of cigars manufactured in Hamburg during the prevalence of the epidemic. Through the fermenting and drying processes which cigars must undergo before they are ready for shipment, the cholera bacilli are killed after a short time, even when packed by way of experiment in the linen bands about the cigars. Tobacco smoke checks the development of cholera bacilli and is quickly fatal.

GUAIACOL IN THE TREATMENT OF TUBERCULOSIS.

DR. A. JACOBI read a paper before the Climatological Association upon the treatment of pulmonary tuberculosis by guaiacol, which was first recommended in 1880 by Shueller.[2] Guaiacol is an ethereal product of beech wood which is soluble in two hundred parts of water. It is the principal constituent of creasote, which contains it in varying proportions, somewhat over fifty per cent., and is preferable to the latter in that it is better borne by the stomach. It may be given in the form of carbonate, a description of which will be found in the lecture by Dr. Kinnicutt in the JOURNAL of May 26, 1892.

Dr. Jacobi gives the remedy almost exclusively in four doses daily after meals and at bedtime in sweetened water or in milk. He begins with four drops for adults, and never increases to more than twenty-eight, and for a child twelve. It is occasionally necessary to discontinue it temporarily. Most of the patients after one to three months looked better and felt better. Some had gained in flesh; the cough became looser and appeared to be more mucus and less purulent. The author had previously obtained such good results from arsenic and digitalis that in at least half of his cases he combined them with the use of guaiacol. Cod liver oil also was given in cold water to patients with fair digestion.

PERITONITIS AFTER ABDOMINAL SECTION.

MR. LAWSON TAIT read a paper on this subject before the Harveian Society.[1] He seems to be doubtful as to the rôle of micro-organisms, and speaks with contempt of what he calls the pathological metaphysician. He recommends highly washing out with water, as opposed to sponging. Although temperature and pulse are very valuable indications, they should not be used to the exclusion of other methods of diagnosis. The appearance of a patient's face may be deceptive; persons are often anxious when there is no good reason for being so. The alteration of the face which he most fears is not one of pain, but of anxiety, accompanied by a tendency to chatter and ask questions. If a patient will be quiet and not talk, she is pretty sure to recover. The most dreaded symptom is intestinal distention.

His treatment may be summarized in the sentence: The moment we see distention we purge; and if we succeed in purging, the patient recovers; if not, she dies. After the occurrence of distention, bilious vomiting is the first serious symptom, and often precedes a fatal issue. If the grave symptoms are all matured on the fourth day after an operation, the fatal issue is pretty certain. If they hang over till the sixth or later, the chances of the patient's recovery increase, excepting in cases of hysterectomy. The author has discarded the use of opium because it suspends the vermicular motion and masks the real condition of the patient, except that one dose, subcutaneously, immediately after an operation is sometimes given. There is always a strange and unaccountable thirst following the opening of the peritoneum, which lasts from twenty-four to sixty hours. For this thirst ice is worse than useless; the best thing to allay it is warm water, but the author has gradually diminished the quantity of fluid until now for forty-eight hours he gives his patients little or nothing. If sickness sets in on the third or fourth day, or at any time, all food including water, is stopped for twelve hours. All vomited matter should be carefully looked at to detect any clandestine feeding. Notes are taken after an operation, every six hours, of the pulse, temperature, the occurrence of distention, and the passage of flatus. If the latter does not occur within twenty-four hours, especially if there is the slightest suspicion of distention, a turpentine enemata is given. If this is not satisfactory, a seidlitz powder every four hours until it acts. In case of any special anxiety, such as vomiting or a cramp, five grains of calomel are given instead. If distention occurs, every effort is made to move the bowels as soon as possible.

THERAPEUTIC NOTES.

COLD BATHING IN TYPHOID FEVER. — Dr. J. C. Wilson reports in the *Medical News*, November 26th, a fourth series of cases of typhoid fever treated by systematic cold bathing. This series comprises 66 cases, with a mortality of six per cent. The total number of cases thus treated at the German Hospital up to June 1, 1892, was 226, with a mortality of 5.3 per cent. In the last series of 66 cases the average number of baths administered was 44; the smallest, one; the largest, 149. Relapses occurred in eight cases (12 per cent.). The average number of days in the hospital, of the non-fatal cases, was 35.

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[1] Abstracts Marine-Hospital Service, November 18th.

[2] International Medical Magazine, November.

[1] British Medical Journal, November 12th.

Sea-Sickness. — The old method of treating sea-sickness is again recommended by Dr. Ames Brunton in the *British Medical Journal.* A leather strap is strapped tightly around the lower part of the thorax and epigastrium, and is kept on until the traveller has gained his sea-legs. It is sometimes better to add a pad over the epigastrium. In commenting upon this, the *Medical Record* inquires why it is that our sweet sisters, whose dear little epigastria are tightly and often even painfully pressed by the cruel corset, should suffer so universally from this most distressing of ills.

Thymol as an Anthelmintic. — Sonsino concludes that it is a therapeutical mistake to infer that a substance which is truly efficient against one parasite is necessarily a general anthelmintic.[1] As a result of his experience he considers thymol an effective agent against anchylostoma, but very uncertain against the other three intestinal nematodes, — ascaris lumbricoides, oxyuris vermicularis, and trichocephalus dispar, and is entirely uneffective against tænia nana. He gives three times a total daily dose of four grammes in the form of powder.

Lysol [2] is the name given to a saponified product of coal-tar, chiefly composed of the cresols, and is liquid in form. It is one of the very newest antiseptics. The reports are yet meagre, and they come mostly from the other side of the Atlantic. One of its important features is, that it makes a perfect solution in water. Michelson says that after a little trial he found he could use it effectually wherever carbolic acid, iodoform or corrosive sublimate was used.

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OBITUARY. — WILLIAM H. GEDDINGS, M.D., OF AIKEN, S. C.

Dr. Geddings, whose memory will always be associated with Aiken, where he practised for twenty-two years, was born in Charleston, S. C., April 23, 1838, and died at Bethlehem, N. H., August 29, 1892. He was the son of a distinguished physician, the late Dr. Eli Geddings and brother of the late Dr. Frederick Geddings of Charleston and Dr. Edward Geddings of Augusta, Ga. He began his medical studies at the Medical College of the State of South Carolina, and afterwards spent several years in systematic work at the universities of Vienna, Prague, Berlin and Paris. On his return from Europe he settled in Charleston, but at the breaking out of the Civil War his services were promptly tendered to the Confederate Government, and he rose steadily from the rank of surgeon to that of Chief Medical Purveyor of the Army of North Virginia. He thus became associated with noted commanders and witnessed many hard-fought conflicts. No account of a battle could be more graphic than his description of the engagement in front of Marey's Hill at Fredericksburg, attended with such appalling and useless sacrifice of life, or of the horrible sufferings of the wounded rescued from the wake of Pickett's disastrous charge at Gettysburg and jolted along in the retreat.

In 1866 Dr. Geddings married Miss Adèle Getty of Philadelphia, and shortly after sailed for Europe spending two years at the Imperial Hospital in Vienna where his familiarity with the language and customs of the place served to constitute him the leader, in some respects, of the American and English students. On his return to America, he settled in New York where he hoped to devote himself to dermatology for which he had qualified under Hebra, Neumann, Kaposi and Sigmund; but was led, from various reasons, to remove to Aiken where he soon built up a large general practice, augmented by many patients referred to him by Northern physicians in consequence of his representations of the advantages offered by this climate for the relief of pulmonary disorders in certain stages. His faith in this climate was strongly confirmed by a series of meteorological observations covering many years, the record of which was widely published and helped to attract attention to the pine uplands of South Carolina.

Fourteen years ago Dr. Geddings was recommended by his Boston friends to start a summer practice at Bethlehem, N. H., where he could continue in charge of certain patients, who required a climate corresponding in some respects to that of Aiken. Here his reputation commanded at once a favorable reception and extensive practice. In his annual migration it was his custom to rest for a few days in Boston to renew fellowship with his old friends of Vienna days, or attend some of the meetings of the medical societies. and he was always cordially received. He was also regular in his attendance at the annual meetings of the Climatological Society and the Society of American Physicians which added to his otherwise large medical acquaintanceship, and although he rarely ventured to speak in public he contributed several valuable papers to the publications of these societies.

Of his earlier articles, relating to dermatology, may be mentioned the "Contribution to the History of Leprosy on the Eastern coast of the United States." Later he wrote the article on "Aiken" in "Wood's Reference Handbook" and also the classical paper upon "Bronchial Asthma," in "Pepper's System of Practical Medicine." His last monograph, published but a few months before his death, was a climatological description of Bethlehem, N. H., based upon observations recorded during the summers of his residence there.

For a number of years Dr. Geddings had suffered from the after-effects of a serious spinal malady, and when there supervened more recently the symptoms of diabetes his equability was not disturbed by the consciousness of its fatal nature; and with indomitable fortitude he kept at work until the day before he succumbed to uræmic convulsions.

Dr. Geddings was a gentleman in all respects, possessing more than ordinary erudition and professional skill, and endowed with a kindly nature and a high sense of honor. Burdened with heavy domestic afflictions and many cares, he always kept bravely at his post and never lost the happy faculty of inspiring hope and courage in his patients, to whom as well as to his professional friends his sudden death came as a personal grief and by all such his memory will ever be affectionately cherished.

METEOROLOGICAL RECORD,

For the week ending December 3, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...27	30.45	36	37	34	70	66	68	N.	N.	9	9	O.	O.	
M..28	30.28	36	39	32	81	91	86	N.	N.E.	11	19	O.	R.	0.07
T..29	30.09	34	38	30	79	94	86	N.	N.	19	24	O.	N.	0.31
W .30	29.84	30	34	26	100	90	95	N.	N.	26	12	N.	N.	0.22
T ..31	29.74	34	37	30	75	81	78	N.W.	N.W.	20	14	O.	O.	0.02
F ..32	29.70	38	47	30	72	63	68	N.W.	N.W.	15	16	O.	C.	
S..33	29.64	34	40	29	62	76	69	W.	W.	16	12	C.	O.	0.01
☞	29.96	35	39	30	77	80	79							0.09

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

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[1] Lancet, November 19th.

[2] Squibb's Ephemeris.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 3, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,827,396	735	227	13.44	19.60	.84	6.30	1.40
Chicago . . .	1,250,000	—	—	—	—	—	—	—
Philadelphia .	1,092,168	353	121	15.68	15.68	1.12	10.36	2.52
Brooklyn . .	955,333	324	119	10.54	22.63	1.24	5.58	1.24
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	231	72	15.48	17.63	1.29	6.88	4.30
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	130	31	8.47	25.41	5.39	2.31	.77
Cleveland . .	281,353	102	38	14.70	9.80	2.94	10.78	—
Pittsburg . .	255,000	126	49	22.91	15.80	5.53	6.32	3.16
Milwaukee . .	234,440	91	37	26.40	9.90	2.20	19.80	2.20
Washington .	230,360	98	28	8.16	18.36	6.12	2.04	—
Nashville . .	87,754	15	3	20.00	33.33	—	6.66	—
Charleston . .	56,048	29	7	6.90	—	—	—	—
Portland . . .	40,000	8	3	—	12.50	—	—	—
Worcester . .	92,313	23	10	8.70	13.05	3.57	—	—
Lowell . . .	82,455	25	12	4.00	12.00	4.00	—	—
Fall River . .	82,128	21	10	9.52	14.28	4.76	—	4.76
Cambridge . .	74,644	25	5	8.00	20.00	—	4.00	—
Lynn	60,809	17	—	5.88	17.64	—	5.88	—
Springfield . .	47,052	17	2	29.40	5.88	11.76	17.64	—
Lawrence . .	45,910	—	—	—	—	—	—	—
New Bedford .	44,947	16	5	6.25	6.25	—	—	—
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	3	2	—	—	—	—	—
Salem	31,495	7	3	28.56	—	—	28.56	—
Haverhill . .	30,065	4	0	—	—	—	—	—
Chelsea . . .	29,479	7	6	—	—	—	—	—
Malden . . .	27,252	8	1	12.50	12.50	—	12.50	—
Newton . . .	26,498	—	—	—	—	—	—	—
Taunton . . .	26,464	5	0	—	40.00	—	—	—
Gloucester . .	26,008	11	3	18.18	18.18	9.09	—	9.09
Fitchburg . .	25,444	9	4	—	—	—	—	—
Waltham . .	20,942	3	0	—	—	—	—	—
Quincy . . .	18,669	1	0	—	—	—	—	—
Pittsfield . .	18,294	3	0	33.33	33.33	33.33	—	—
Northampton .	15,684	3	0	33.33	—	—	33.33	—
Everett . . .	14,745	3	2	—	—	—	—	—
Newburyport .	14,031	8	1	12.50	12.50	—	12.50	—
Amesbury . .	13,561	1	0	—	—	—	—	—

Deaths reported 2,474: under five years of age 805; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 340, acute lung diseases 432, consumption 283, diphtheria and croup 172, typhoid fever 49, scarlet fever 42, diarrhœal diseases 39, whooping-cough 14, measles 8, malarial fever 8, cerebro-spinal meningitis 5, erysipelas 3.

From diarrhœal diseases New York 20, Pittsburgh 8, Philadelphia 3, Brooklyn and Boston 2 each, Cleveland, Milwaukee, Worcester and Cambridge 1 each. From whooping-cough New York 5, Brooklyn 4, Philadelphia 2, Boston, Washington and Charleston 1 each. From measles New York 5, Boston 2, Brooklyn 1. From malarial fever New York 3, Nashville 2, Pittsburgh, Charleston and New Bedford 1 each. From cerebro-spinal meningitis Somerville 2, Philadelphia, Brooklyn and Boston 1 each. From erysipelas New York 2, Pittsburgh 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending November 19th, the death-rate was 18.6. Deaths reported 3,632: acute diseases of the respiratory organs (London) 340, measles 137, scarlet fever 61, diarrhœa 53, whooping-cough 51, diphtheria 47, fever 39, small-pox (Leeds 2, Liecester and Sheffield 1 each) 4.

The death-rates ranged from 12.4 in Halifax to 25.7 in Salford; Birmingham 18.3, Bolton 25.1, Bristol 18.7, Croydon 13.3, Leeds 15.7, Leicester 16.5, Liverpool 19.3, London 18.8, Manchester 22.1, Newcastle-on-Tyne 17.6, Norwich 15.7, Nottingham 16.9, Plymouth 14.6, Sheffield 19.5, Sunderland 16.1, West Ham 16.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 3, 1892, TO DECEMBER 9 1892.

War Department, Washington City, December 5, 1892. By direction of the President, the retirement from active service on December 4, 1892, by operation of law, of **COLONEL ANTHONY HEGER**, assistant surgeon, under the provisions of the act of Congress, approved June 30, 1882, is announced, and he will proceed to his home.

The leave of absence granted **MAJOR JOHN O. SKINNER**, surgeon, U. S. A., on account of sickness, is extended six months.

By Par. 6, S. O. 286, A. G. O., the leave of absence on surgeon's certificate of disability granted **MAJOR J. C. G. HAPPERSETT**, surgeon, in S. O. 178, November 18, 1892, Dept. Dakota, is extended three months.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 10, 1892.

L. H. STONE, assistant surgeon, from the "Pinta" and ordered home, one month's leave.

L. L. YOUNG, assistant surgeon, from the "Mohican" and ordered to the "Pinta."

H. N. T. HARRIS, passed assistant surgeon, from the "St. Louis" and wait orders to the "Bancroft."

V. C. B. MEANS, passed assistant surgeon, from Naval Hospital, Norfolk, and to the "Saratoga."

J. M. STEELE, passed assistant surgeon, from the "Saratoga" and to the "St. Louis."

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, December 21st, at 8 o'clock.

"Remarks on Some Clinical Methods of Examination of the Blood," Dr. W. S. Thayer, Baltimore. Discussion opened by Drs. W. F. Whitney and J. J. Thomas.

F. C. SHATTUCK, M.D., *Chairman*.
HENRY JACKSON, M.D., *Secretary*.

RECENT DEATHS.

JOHN S. NEWBERRY, M.D., LL.D., Professor of Geology in Columbia College, New York, died in New Haven, Conn., December 7th, aged seventy years.

P. R. HOY, M.D., of Racine, Wis., died on December 8th, aged seventy-six years. He was widely known as an authority in natural history and had made a very fine collection of birds, fishes, reptiles and insects. He was a member of the American Association for the Advancement of Science, and of several other societies in this country and abroad.

F. E. OLIVER, M.D., M.M.S.S., died in Boston, December 8th, aged seventy-three years.

E. B. SHAPLEIGH, M.D., of Philadelphia, died December 10th, aged sixty-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Les Salpingitis. Par M. le Dr. Landau. Bruxelles: Henri Lamertin. 1892.

Twenty-third Annual Report of the State Board of Health of Massachusetts, 1892.

Some Practical Points in the Diagnosis of Spinal-Cord Lesions. By Frederick Peterson, M.D. Reprint. 1892.

Report of a Case of Sudden Death from Coronary Obstruction, with Specimen. By Dr. Cassius D. Wescott, Chicago.

Eighth Biennial Report of the Board of Trustees of the State Charitable Institutions of the State of Kansas for the two years ending June 30, 1892.

Les Formes Cliniques du Choléra Pernicieux dans L'Epidémie Juxta-Parisienne et Parisienne de 1892. Par le Dr. L. Galliard, Paris. Reprint. 1892.

New York Letters on Orthopedic Surgery; The Scope of Orthopedic Surgery; Tubercular Abscesses and their Treatment. By Stewart LeRoy McCurdy, M.D., Denison, O. Reprint. 1892.

The Chemical Basis of the Animal Body; An Appendix to Foster's Text-book of Physiology. By A. Sheridan Lea, D.Sc., F.R.S., Lecturer in Physiology in the University of Cambridge, etc. New York: MacMillan & Co. 1893.

Ueber Guajacolbehandlung der Tuberkulose. Chirurgische Mittheilungen über die chronisch rheumatischen Gelenkentzündungen. Urethroplastik bei einem grossen Defecte und einer Fistel der Harnröhre. Zur inneren Urethrotomie. Von Prof. Dr. Max Schüller, Berlin. Reprints. 1892

Hand-book of Pathological Anatomy and Histology, with an Introductory Section on Post-mortem Examinations and the Methods of Preserving and Examining Diseased Tissues By Francis Delafield, M.D., LL.D., Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia College, New York, and T. Mitchell Prudden, M.D., Professor of Pathology and Director of the Laboratories of Histology, Pathology, and Bacteriology, College of Physicians and Surgeons, Columbia College, New York. Fourth edition. New York: William Wood & Co. 1892.

Address.

THE RELATIONS OF ALBUMINURIA TO EXCESSIVE URIC-ACID SECRETION AND OXALURIA.[1]

BY PROF. J. M. DACOSTA, M.D., LL.D.

There is a distinct group of cases suffering with albuminuria and Bright's disease, the pathology of which is not yet clearly understood, but which have well-marked and easily recognized characters, separating them from the classical forms of renal disorder. If they are studied from a clinical, and especially from a pathological, standpoint, it will be found that they are different in origin, course, and termination. Their study is therefore of interest both to pathologists and therapeutists. The lecturer communicated the clinical histories of a number of cases, which well illustrated these peculiar forms of albuminuria and Bright's disease, accompanying increased uric-acid formation and oxaluria.

The first case was a man, of middle age, who presented himself with albuminuria, and hyaline and epithelial casts also were discovered in his urine. He presented marked evidence of digestive disorder; flatulence, constipation, depression of spirits, etc. He also had much nervousness, and the group of symptoms commonly found in the condition known as lithæmia. In the morning, the urine in the vessel frequently exhibited colored deposits of uric-acid. The specific gravity of the urine was from 1,025 to 1,032, in other words it was constantly above normal. There was a small proportion of albumen, in addition to excess of uric acid and urates, constantly present. In the treatment, special attention was directed to the digestive organs by the use of a selected diet; but very little regard was paid directly to the kidney disorder. The patient took a trip to Europe and spent some time at several celebrated baths on the Continent, and when he returned to this city, he was in good health. This was four years ago, and he had had no return of his albuminuria during that time. He still is subject to nervous symptoms; and, at times, he has a return of his lithæmia. Professor DaCosta had occasion to examine his urine frequently during this period and had fully established the fact of the entire disappearance of the albumen and other apparent evidences of renal disease.

The second case was one presenting a group of symptoms remarkably like Bright's disease. There was more albumen than in the first patient and tube-casts were not only more frequent, but were also more commonly epithelial in character. The dyspepsia was also more marked. The nervous symptoms of lithæmia were equally prominent. Neither this case, nor the preceding, had dropsy. The pulse was not rigid; the action of the heart was decidedly increased. Although at first inclined to form a diagnosis of parenchymatous nephritis, the lecturer finally abandoned this view and classed it with the preceding as a case of lithæmia. The patient was sent to Capon Springs, and reported while there that he passed large quantities of water, and that, in the urine, he observed a considerable quantity of what he called sand, which was probably uric acid and urates. Since that time, he had remained perfectly well, and has had no symptoms whatever of kidney disease.

In another group of cases, the uric acid is not in excess. In place of the urates, however, we find the oxalates. These patients have the same symptoms of dyspepsia; but with more nervous depression and the usual symptoms of oxaluria. The urine has a high specific gravity, and deposits crystals of oxalates, occasionally intermixed with urates. Albumen, in small quantity, may appear. The results of treatment of these patients were the same as those in the preceding group, although the progress was more slow than in the others.

An illustrative case was that of a Harvard man, the records of which are of especial interest because of the complete analyses of the urine which were made in the Harvard College laboratories. The analyses were made very often, and were remarkable for their fulness and completeness, the proportions of all the constituents being carefully determined by expert chemists. This patient was much interested in his own symptoms and was very gloomy. He might be described as "the essence of gloom and misery." Oxalates at every examination were found in his urine. The specific gravity was always high, small quantities of albumen and casts were also present; and the thought that he had Bright's disease made him very despondent. He was put upon a vegetable diet and proper treatment, which will be discussed later. He has now been free from albuminuria for about fourteen months, and his general health is good.

To sum up what has been said and review the symptoms in order to see in which direction they point: In the first place, in not a single case did the speaker find dropsy. All of these cases have a varying amount of albumen, the proportion is rarely very large, sometimes it may be considerable, but it does not stay so. Many of them have tube-casts, some being epithelial. In one case, which he had kept under observation for a long time, the epithelial casts persisted for a number of years, but finally disappeared. The gentleman lived after this for many years and finally died with an entirely different affection. There is a tendency towards an afternoon rise in temperature in these cases. The entire absence of the cardiac complications of Bright's disease is to be noted. He had rarely found even rigid arteries; but a considerable number do have an intermittent pulse. All of them have dyspepsia with well-marked nervous symptoms which are usually recognized as lithæmic.

As to the important question of diagnosis, if we take into consideration the fact that these cases exist, with high specific gravity; with varying amounts of albumen and tube-casts; without dropsy; with digestive symptoms; absence of heart and artery disorder and absence of eye symptoms; and with the very marked character of the nervous phenomena, there should be no difficulty in the diagnosis. The chief difficulty would occur in certain cases of contracted kidney; those whose beginnings are extremely insidious, where albumen is small in quantity, or absent for comparatively long intervals, and the casts are few. It is possible that, in such cases, difficulties of diagnosis might arise, but these would soon disappear as we study the case. Here we find no eye disorders; no heart symptoms; neither has such a case low specific gravity of the urine nor dropsy. The male sex is more subject to this form of albuminuria than the female. It is true that men are also more liable to Bright's disease than women are; but the difference is still more marked here.

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[1] Abstract of the Annual Address delivered before the Philadelphia Pathological Society, October 27, 1892. Reported stenographically for the Boston Medical and Surgical Journal.

The distinguished reporter stated that he had, in all his experience, only met with one case in a woman. This was that of a young girl of eighteen years of age. It was stated that she had had a preceding attack of scarlet fever some years before; but she evidently had suffered no serious lesion of the kidneys, for she took a course at Carlsbad and was cured, and has remained free from symptoms since. This would hardly have been the case if she had had organic kidney lesion, because Carlsbad is one of the worst places she could have gone if she really had the lesions of Bright's disease.

What relation does this bear to albuminuria of adolescents, or cyclical albuminuria, and other intermittent forms of albuminuria? These terms may be interpreted as meaning very much or very little. In the first place, take the albuminuria of adolescents; this generally is met with in boys, at the period of adolescence. The proportion of albumen is small, and, as a rule, it is found only in the morning urine. Upon going over the literature of the subject, the coincidence was noted that in these cases also was there a marked acid reaction. There was also the same high specific gravity; and in the sediment the microscope revealed the same excessive amount of uric acid and large proportion of urates; the same depressed nervous system with general prostration of strength. An interesting observation was made by Grainger Stewart, who found that a large proportion of the men in a company of soldiers, after marching, had albumen in their urine; the albuminuria being attributed to muscular exercise. This was accepted by Senator and others. The speaker, however, was not satisfied that it was due directly to exercise. Might it not be produced by increased tissue-waste, temporary lithæmia in fact, and by too rapid excretion? It is very likely that a great many cases of so-called cyclical albuminuria, and of intermittent, or alternating albuminuria, are instances of lithæmic albuminuria. In all these cases as a rule, the albumen has been produced by increased excretion of the products of tissue-waste.

As to the prognosis, it is generally good — the patients get well. There had been only one case, in his experience, that did not get well. It was that of a very prominent manufacturer in this city who applied for life insurance and was rejected because albumen was found in his urine. This surprised the patient who considered himself in good health. He could not account for it, except that he had been working very hard for some months previously; but he had not felt sick. His urine had a high specific gravity; it contained albumen and tube-casts. He took a trip to Europe, and while there he was under the charge of an eminent physician in London. He there got completely well, or thought that he did. During last year, however, albumen has reappeared, but this time with urine of low specific gravity, and with casts, which now have a more serious import than at first.

Therefore, it is possible that a certain proportion of cases of this kind may in the course of years, terminate in Bright's disease. It has been suggested, by Hayg and others, that gouty kidney has been caused by excessive excretion of uric acid. This, in fact, would be in the line of what has been brought up to night — but that would be to take too narrow a view of it. There are the contracted kidney, the heart complication, the fibrosis of vessels, which must also be considered, and the relation of which to lithæmia, at present, must be left an open question.

The orator declared his opinion that the prognosis is favorable in the class of cases brought up for discussion. It is a great relief to the patient to be told that he has not Bright's disease, especially after his rejection on this account by some life insurance company.

In conclusion, a few points in treatment were touched upon. The dietetic treatment is of first importance. Milk was recommended, but not an exclusively milk diet. A moderate amount of meat is allowed as long as the patient is able to take daily exercise. Green vegetables, bread in moderation; but butter, sugar and carbo-hydrates are restricted or certain forms entirely omitted. The great value of laxatives is to be acknowledged. Some of the older physicians, without knowing exactly why they did so, at least learned from experience to give these patients blue pill, and good results usually followed. A mercurial, followed by a saline the next morning, is often of great service. The action of the kidneys should be kept up by citrate or acetate of potash, and the tubules flushed out by the use of mineral waters. The patient must be systematically exercised; this is of importance especially in boys. He cited a final case, in illustration, of a boy with this form of albuminuria in whom after a horseback-ride the albumen always disappeared from his urine. The inhalation of oxygen might be resorted to temporarily, but he had not used it sufficiently often in this disorder to determine that it had any special value, in fact, he had only used it in conjunction with other remedies.

In the discussion following the reading of the paper. Professor DaCosta, in reply to a question, stated that he ascribed the albuminuria to irritation of the kidneys with some congestion resulting from this irritation. Recurrence of attacks had been observed, and in one patient the entire train of symptoms reappeared after partaking of ordinary rhubarb-plant, which produced a return of oxalates in the urine.

Original Articles.

THE TREATMENT OF INCONTINENCE OF URINE IN CHILDREN.[1]

BY CHARLES W. TOWNSEND, M.D.

From time to time articles appear in the medical journals extolling this or that form of treatment for incontinence of urine in children, and condemning other forms as useless in the experience of the writer. In fact, there is no disease where such a conflict of opinions is held as to its treatment. This would lead us to infer, and with reason, that the affection is decidedly difficult to cure. An understanding of the etiology of this disease is, however, essential to its successful treatment, as I attempted to show in a former article,[2] so that we may adopt the treatment suitable to the individual case rather than use any one routine method for all.

Acting on this principle, I have endeavored to treat cases in the out-patient department at the Children's Hospital and in private practice, and have collected and analyzed them, to study the results. Up to March 14, 1892, there were 94 cases entered under the diagnosis of incontinence in the out-patient records of the Children's Hospital; many of these had come under my own supervision, for the rest I am indebted to the records of my colleague. Six more cases were added from my private records so as to make a total of 100 in all. Exactly half of these, oddly enough, were in boys, and half in girls.

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[1] Read before the Boston Society for Medical Improvement, November 14, 1892.

[2] Archiv. of Pediatrics, December, 1887.

The ages are given in this table:

2 years	2 cases.	10 years	11 cases.
3 "	6 "	11 "	11 "
4 "	11 "	12 "	9 "
5 "	7 "	13 "	4 "
6 "	11 "	14 "	1 case.
7 "	10 "	Not given	2 cases.
8 "	9 "		
9 "	6 "	Total,	100

Forty-seven were cases of nocturnal incontinence only; two were diurnal only; and 47 were both nocturnal and diurnal. In three there was also at times incontinence of fæces.

	Cases.
I. Malformations of bladder or uretbra.	
1. Epispadias	1
2. Small meatus	2
II. Atony of sphincter vesical.	
1. General debility or anæmia	17
2. Spinal disease	0
3. Acute febrile disease	0
III. Reflex.	
1. Increased quantity of urine.	
(*a*) Nephritis	1
(*b*) Diabetes	0
2. Irritant quality of urine.	
(*a*) Excess of urates and uric acid	2
(*b*) Increased acidity	3
3. Vesical calculus	0
4. Hypersensitive state of external genitals from	
(*a*) Phimosis	11
(*b*) Adherent prepuce with or without retained smegma and ballanitis	22
(*c*) Vulvitis	1
(*d*) Masturbation	1
5. Anal irritation.	
(*a*) Worms	6
(*b*) Eczema	1
(*c*) Rectal polypus	1
	69
6. Increased irritability of the bladder from unknown causes	31
Total,	100

The attempt was made, as far as possible, in most of the cases to ascertain some probable cause of the affection, and to treat or remove it; and I have arranged these in the following table under three main heads as an aid in finding the cause and treating the trouble.

As will be seen, in 69 per cent. of the cases there was found some cause which might reasonably be held responsible for the trouble, and it is probable that this percentage would have been increased if all the cases could have been carefully studied.

The results of treatment in these 69 cases, although often discouraging, was decidedly better than among the other cases where the treatment was more routine; and it is undoubtedly the fact that many more would have been permanently cured if their parents had not withdrawn them from treatment too soon, being discouraged by former unsuccessful attempts and by the general scepticism as to the advantage to be derived from treatment in this trouble.

The case of epispadias was operated on, and proved, I believe, a permanent success. Both of the cases of incontinence due to a congenitally small meatus were cured by nicking and stretching the meatus. One was an infant of sixteen months, where besides the very frequent micturition, there was constant priapism due to the reflex irritation. Both of these symptoms were at once relieved by simply nicking the meatus and stretching with a pair of scissors. Micturition took place only three or four times daily, while before this the mother assured me that a little water was passed nearly every fifteen minutes.

Of the 17 cases entered as atony from anæmia and general debility treated with iron and strychnia in the form of nux vomica, and with general hygienic methods, in seven the result of treatment was unknown, four were not relieved, two were improved and four were cured. It is to be remembered that many hospital cases give up treatment before it is hardly begun, so that these results are not a fair test. Rhus aromatica has been reported of much use in these atonic cases. I have not yet used it. I am inclined to think that some of this set of cases were due to reflex causes which became inoperative on strengthening the general condition.

On looking over the list I have given of reflex causes, it is evident that many of them occur in cases, when there is no incontinence of urine; but that under certain circumstance, they may be the exciting cause of incontinence is evident theoretically, and is proved practically by the cure of cases on the removal of the reflex cause. Complete cure in this annoying disorder is so satisfactory to all concerned, that we should certainly leave no stone unturned in our search for and removal of the reflex source (if happily there is one) of the incontinence.

Five cases are recorded as due to excess of urates and uric-acid or to increased acidity of the urine. Two were relieved, and two cured by treatment with alkalies (Carlsbad salts in two cases), and also by treatment in two cases of the existing dyspepsia. It is natural to suppose that an over-acid urine, especially if it contains uric-acid crystals, might in a child, where the nervous tension is so great — and it is especially so among the lithæmic — send such strong impulses to the reflex centre for micturition in the lumbar spinal cord that they could not be overcome by impulses from the brain. Incontinence would be the result. This would occur most commonly during sleep when the centre for volition is least active, but might, of course, if the irritation were sufficiently strong, occur during the waking hours.

I am inclined to think that there were many more cases on my list where the source of the trouble was an over-acid urine due to a lithæmic condition. For purposes of analysis it is important to obtain several specimens of the urine passed at home, and not the specimen passed at the hospital clinic or office. In this case the child may have waited some time in a more or less nervous state of mind, and the urine is thereby rendered copious and watery with a low specific gravity, — thus reversing the characteristic over-acid concentrated urine, which throws down on standing a deposit of urates with its red-pepper grains of uric-acid. This variability in the character of the urine is common in lithæmic children, owing to the accompanying neurotic condition. The use of a vessel at home in place of the water-closet, with the report of the mother's observation on the same, is of great value.

As Fothergill has so graphically shown in the "Cyclopædia of Children's Diseases," lithuria is of very frequent occurrence in children. He says of lithæmic children (Vol. II, p. 301): "Their bladder is a source of much trouble to them and its calls are often peremptory"; and on page 304, "wetting the bed at night has close relations with uric acid, and in all cases of nocturnal incontinence the urine should be examined. In my experience wetting the bed occurs mainly in two classes of children, — in very bright, vivacious neurotic little girls, and in comparatively dull and backward children of low nervous organization. In either case the uric acid present plays a part."

Phimosis as a cause of incontinence has always been a fruitful source of argument. Some maintain that circumcision is a certain cure, others that this operation is valueless. On my list are eleven cases of extreme phimosis, seven of which were circumcised. In 22 others, there existed a more or less elongated foreskin with adhesions which prevented complete retraction. Of the circumcised, four were not relieved, one was much relieved and one cured,— a pretty poor showing. The 22 with adhesions were all cases where the foreskin could be retracted on breaking up the adhesions, and where it, therefore, did not seem to be necessary, to advise circumcision. Five of these cases were not relieved, in six the result was unknown as the patients could not be found, three were relieved temporarily, one was much relieved but not cured, and six were entirely cured. The operation consisted in drawing back the foreskin and gradually breaking the adhesions that bind it to the glans around the corona. Sometimes this occupied two or three sittings, although it was generally possible to break up all the adhesions at one time. Cocaine relieves the pain to some extent. In some cases ether should be used, although with care one is generally able to do without it and cause but little pain. The glans, especially behind the corona, should then be smeared with vaseline to prevent the raw surfaces from reuniting, and the parents instructed to have the foreskin retracted and washed and anointed with vaseline twice a day for a few days, after that once a day only at the morning bath. If this precaution is not taken, it may be necessary to subsequently break up some new-formed adhesions. In several cases this was done, the second operation completing the cure. Sometimes a mass of irritating smegma is found behind the adhesions which must be thoroughly removed.

It is surprising how often a foreskin which seems so tight as to require circumcision will, with a little patience, admit of retraction, and it has seemed to me that circumcision could generally be dispensed with, provided the foreskin could be retracted so that adhesions could be broken and all irritating smegma removed. In other words, a long foreskin without adhesions or retained smegma is not a source of reflex irritation while a short foreskin with these may be. This was well illustrated in one case where a child was brought to the hospital for incontinence, for the cure of which circumcision had already been done without any success. On examining the penis which had been properly circumcised, a collection of smegma and dirt, evidently very irritating, was found in the groove behind the glans, and removed, a soothing ointment being applied. Improvement was marked at once; and at the end of a week the cure was completed, and remained so.

I do not wish to be understood to think that adhesions between the foreskin and glans always cause incontinence, or that the trouble can always be cured by their removal. On the contrary, it is almost the rule to find adhesions in young children. Dr. Roswell Park [3] found them in eighty per cent. of all cases, in greater or less degree in young children. It seems reasonable, however, to suppose that in some cases with an easily disturbed bladder, that the reflex irritation of adhesions, especially with retained smegma, may be all that is needed to start involuntary micturition, and that the removal of these conditions may be all that is needed to cure it. The success sometimes attending this simple operation certainly makes it advisable to perform it where we can find no other cause of the trouble. Its failure in many cases simply shows that we have not found the whole source of the trouble, or as is often the case, the nervous habit has become so fixed that it cannot be stopped, even on removal of the original exciting cause.

If we cannot retract the foreskin so as to break up the adhesions, I believe it is best to circumcise and not to promise too much as to the result, for it is unfortunately the case that circumcision will not always cure, as is illustrated by the failures on my list. I have seen the trouble in the circumcised Jew.

A large number of cases of vulva-vaginitis in little girls are seen at the hospital, but curiously enough I can find only one case of incontinence among them. That came on in a previously healthy and continent child shortly after the onset of an acute attack of vulva-vaginitis probably of infectious origin.

An adherent clitoris has been said to cause incontinence. This I have not observed.

Reflex irritation from pin-worms, or eczema about the anus, may certainly cause incontinence, and should be removed before any other treatment is attempted.

The rectal polypus was removed from the child on my list, with immediate cure of the incontinence of urine.

By all means find, if it is possible, a reflex cause of this troublesome disease and remove it, and the results will be the best, for the direct medical treatment is often most discouraging. I am convinced that the very favorable reports of the use of various methods of treatment are often due to the fact that sufficient time has not been allowed to elapse in the treatment of cases. Many of the families who come to the Children's Hospital are followed up for years and I wrote to as many of the patients as I could find who had been lost sight of. In this way it was found that many who were entered in the record as improving or cured, subsequently relapsed. Private cases that can be followed up more carefully are not so apt to relapse.

Belladonna is the drug *par excellence* that is used in a routine way for enuresis. In fact, it is generally prescribed without looking for any exciting cause to remove. In my set of cases it was prescribed in 44 cases, generally after a search for a probable cause or lack of success following its removal. I think a more careful examination, especially of the urine, might have reduced the number in which belladonna was used. The results of its use are not very encouraging, especially if one is careful, as I have tried to be, to follow up the subsequent history of the case.

Many of my replies showed that the trouble supposed to be cured soon returned as bad as ever. Still there are some signal successes. The corrected results are as follows: Of the 44 treated with belladonna, in 12 the result is unknown; 12 were not relieved; three were cured for a short time, but later relapsed; 12 were more or less relieved; and five were entirely cured. Although in large doses belladonna will generally partially or entirely relieve for a short time, still in some cases there is no improvement, even if the drug be pushed to poisonous doses. For example, in a boy of five the dose was gradually increased from five to thirty drops of the tincture when physiological symptoms came on and the treatment continued in large doses for several months without success. This I have mentioned to show that persistence and large doses of belladonna does not invariably cure as is claimed by some and is, it seems to me, an objectionable practice and detrimental to the health of the child. There are enough successes on the list, however, to warrant its trial, provided we have exhausted other means. It can be given in the form of the tincture, or as atropia, one grain to the ounce, giving one-half to one drop for each year of the child's age. For nocturnal incontinence it is best given two hours before bedtime and again at bedtime if the pupils are not dilated. In this way the full effect can be safely obtained. The other drugs used, not before mentioned, were ergot and bromide of potash, which were both unsuccessful; and iodide of potash, which seemed to have a good effect in one case. In six cases faradism was used; without success in two; three were relieved; one was cured.

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[3] Chicago Medical Journal and Examiner, 1880, p. 561.

Raising the foot of the bed to prevent the urine pressing on the neck of the bladder certainly has a temporary good effect in many cases, but no cures were obtained. Daily dilatation of the bladder with warm water in chronic cases where this viscus has become contracted and thickened, is a form of treatment which seems rational, and good results are reported.

In conclusion I would say, study each case of incontinence of urine, and find and remove the cause if possible. In this way the results will be much better than by any routine treatment.

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CASES OF PSEUDO-PARALYSIS.[1]

BY E. H. BRADFORD, M.D.

A GROUP of symptoms occasionally present themselves in young children which cause anxiety and doubt both as to the nature of the affection and to the proper course of treatment.

A child frequently in excellent health (usually at the age when creeping or early walking is the daily custom), without known cause, shows disinclination to move and pain on being moved.

This pseudo-paralysis has been mentioned by many writers; but as it is not a very common affection, it frequently is not recognized. Although the pathology is not entirely known, the symptoms are sufficiently marked to make a diagnosis possible, as the history given is usually characteristic.

Eleven cases of this affection have come under my observation, and in these the history varied so little that one description will answer for all with the exception of a few minor details. In many instances the children were quite plump; and in two they were regarded as exceptionally handsome, healthy babies. Frequently the history of a fall is given; but the connection between the fall and the paralysis, as it is termed, is not readily marked. The onset is ordinarily gradual, although it may be rapid.

The mother's attention is called to the fact that the child does not move one leg as freely as the other. Pain is manifested if the limb is jarred. After a while the same condition may be observed in the limb on the other side. In the severe type of cases the upper extremities and the shoulder-joints — either or both — are also attacked, and the child cries in agony if any attempt is made to lift it in nursing or on attending to the child's toilet. This pain may be so severe that the child cries if any one comes near him, apparently in fear lest he be disturbed. After the child has been moved and lifted, one position is sometimes found which is comfortable, and the child will rest in that position, and cry when moved. As children of this age are frequently jostled about — through the idea of the nurse or mother that this is some way soothing to a child and will relieve all suffering — the condition is frequently aggravated by this mistaken devotion. Sleep may be interfered with and the child become fretful at night, from the fact that motion at night sometimes causes pain. The child's appetite may fail; and if the conditions last long, the child may become extremely emaciated.

In four of the cases here reported, a swollen condition of the gums suggesting scurvy was noted. In one case, a petechial spot was seen on the arm. There was no swelling of the joints proper.

The affection may be very extensive, and the patient unable to sit up; or it may be limited chiefly to one hip. In the cases which I have seen there has not been any elevation of temperature that was constant, nor any marked intestinal disturbance. The food given to the child would appear to have much to do with the condition. All of the children were artificially fed. The worst case was one that had been taking proprietary prepared food which was given without milk, and the child was much emaciated. In two of the cases, however, the food feeding seemed to have been suitable so far as external appearances of the child would indicate, but there was improvement after the change of diet. In one instance, the first tooth had appeared at the usual period — six months — and there were in the majority of cases none of the later evidences of rickets, such as curvature of the long bones, though in almost all there was some enlargement of the epiphyses at the wrist and of the cartilage at the end of the ribs. In one of the cases, seen two years after recovery, curvature of the lower extremity was noticed.

The ages of the children observed ranged from six months to two and one-half years.

That these cases are cases of mal-nutrition or faulty nutrition, is evident from the fact that change of food frequently effects a speedy cure, and in time always brings about recovery. The fact that in a certain number of instances swollen gums are noticed, suggests, of course, analogy to scurvy; but in many of the cases observed there is nothing else that would indicate a connection between the two, as the children were plump and had been previously supplied with a sufficient amount of animal food. The condition, therefore, of the gums would seem to indicate more a complication which may or may not be present, but which is not the essential part of the affection of the epiphyses. The state of the epiphyses, perhaps, suggests an aggravated condition which has been described by Lannelongue as *maladie de la croissance*, a condition dependent upon an imperfect condition of the growing bones, of which these two cases may serve as illustrations:

A girl eleven years of age, of healthy appearance and stout frame, had grown with rapidity, and complained of pain at the hip-joint. No limitation of motion of the limb or stiffness were found at the joint, and none of the characteristics of disease at the joint. The limp, however, was sufficient to justify apprehension and had persisted for some time; the child was directed to remain in bed for a short time, and the use of crutches was prescribed for a few weeks. This condition passed off, and the child, at the end of three weeks, recovered use of the limb, and has remained for the past year entirely well.

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[1] Read before the Boston Society for Medical Improvement, November 14, 1892.

A rapidly growing girl of fifteen, complained of great pain at the hip-joints and knees which showed symptoms of stiffness, limitation of motion and other symptoms of hip-disease. This condition of things was not accompanied by fever; several other joints became involved in the course of a few months, namely, both ankle-joints and the shoulder-joint, and afterwards the knee, and there was a slight chronic effusion of one knee, and later of the ankle (this lasted but a short time). These attacks, however, did not come at the same time, and were not acute or accompanied by pain. One joint was affected after another, the affection being essentially chronic, lasting through the period of nearly a year before improvement was noticed. The most persistent was the affection at the hip-joint, which showed no great improvement for a year, so that a tubercular process was suspected. The patient was quite anæmic, but made an ultimate recovery, and has remained well for several years, the joint being in a perfectly normal condition.

Perhaps the condition described by the older practitioners and nurses as "growing pains" may be analogous to this. Children, either after active play or after some fatigue, are at night attacked by severe cramp-like pains referred to the knee and muscles of the calf. The pain may be quite severe, and yet nothing can be seen on examination of the limb. The application of hot cloths or moist heat relieves the symptoms, which disappear ordinarily after a short rest and may be absent the following morning. The exact nature of this condition, which is not a very common one, is not known positively, as pathological investigation is, of course, impossible. The condition, however, suggests a lack of power of resistance in the epiphyses and a possible congestion temporarily existing after the bruising of the exertion of active locomotion.

A condition of what may be termed tenderness of the joints in an adult came to my attention once, in the case of a railway brakeman who had jumped from a moving train to avoid a collision. No severe injury was sustained, and there was no external evidence of injury to the limb. The patient made recovery from the bruises, but some years following the accident was unable to jump or to stand for a great length of time, this causing pain in both knees. There was no limping, and nothing was found on physical examination, and there was no complaint made of other disability. From the circumstances of the case — the previous settlement of the claim by the railroad company at fault, and the need of work — the existence of a feigned condition was not considered probable; the facts seemed to point to a derangement in the epiphyseal part of the knee-joint.

In regard to the treatment of the cases of pseudoparalysis, it can be said that some change in food — to be especially determined in each case — is essential. The drugs used in these eleven cases were cod-liver oil (with and without free phosphorus) in solution with alcohol. In one case lemon-juice was used, following a suggestion made to me by Dr. Lovett. In four cases an unusual amount of salt was prescribed and given. In two instances there seemed to be an unusual appetite for salt.

Recovery took place in all these cases except one, where death from an intercurrent affection interrupted treatment; and generalization as to the efficacy of any drugs might be misleading.

The children were carefully protected from any jar when lifted, and in the severer cases were placed under a frame and treated as a pappoose would be when moved. In some instances they were simply kept upon a pillow, a thin board being placed under the pillow, and the children swathed to this. In the first case which came to my observation it was necessary for the child to remain in this frame six months. Ordinarily, however, a shorter amount of time is all that is necessary, and in the course of a month or two the children regain their former activity. As soon as the children are able to play about, they can be allowed to, unless the condition of the bones or the back demands some form of appliance to prevent, or correct curvature of the bones.

Clinical Department.

A CASE OF FIBRO-MYOMA OF THE VAGINA.[1]

BY CHARLES M. GREEN, M.D., BOSTON.

PRIMARY fibro-myomatous growths of the vaginal wall are of sufficient rarity to make the following case worthy of record:

S. L., a native of Nova Scotia, fifty-one years of age, and the mother of two children, entered the Boston City Hospital, March 10, 1890, in the service of Dr. E. H. Bradford, by whose courtesy I was permitted to examine and operate upon the case. The menopause had occurred seven years previously, and the family history was negative. Ten years before entrance she had noticed a small swelling on the neck of the womb, as she supposed. This swelling had grown steadily and, at the time of entrance, was said by the patient to be the size of a hen's egg: there had been no flowing nor leucorrhœa since the menopause. In the past three months there had been frequent and painful micturition.

On physical examination a rounded tumor of the size of a hen's egg was found, which on first examination was thought to be attached to the anterior lip of the cervix. On March 17th, with the patient under ether, I found the tumor to be entirely free from the cervix, and attached to the anterior vaginal wall, in close proximity to the bladder wall, but apparently having no connection with it. An incision was made over the tumor, and the growth enucleated: there was no pedicle. It was necessary to tie but one bleeding point. The superfluous edges of the capsule were trimmed off, and the cavity packed with iodoform gauze after irrigation with a 1:3000 sublimate solution. On April 12th the vaginal wound had entirely healed.

The report of the pathologist, Dr. H. F. Sears, who examined the tumor, was as follows: "Nodule size of hen's egg, firm; on section, bands of white glistening fibres running in different directions; microscopically, bands of fibrous tissue and muscular tissue interlacing. Diagnosis, Fibro myoma."

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[1] Read before the Boston Society for Medical Improvement, November 14, 1892.

Fibroid tumors of the vaginal wall are so rare that they are unmentioned in most text-books. Mr. Curling[2] is quoted by Barnes[3] as describing a firm, solid tumor growing from the upper part of the vagina, to which it was attached by a broad pedicle which commenced just behind the meatus urethræ. Pozzi, in his systematic work on gynæcology, briefly describes these growths. They may have their origin from the uterus and descend little by little, dissecting their way between the layers of the recto-vaginal septum, or they may arise primarily from the muscular vaginal coat, in which latter case the seat of predilection is the upper part of the anterior wall, as occurred in the case above reported. They may be very adherent to the urethra, and may invade the vulva. Their size is usually small; but Hastenpflug[4] has reported a case in which the tumor filled the entire vagina and pushed up the uterus. They may become pediculated and take the form of polypi; and they may undergo the same retrograde changes as analogous uterine tumors, and may simulate cancerous growths.

Winckel[5] describes vaginal fibroid growths at some length, and emphasizes their predilection for the anterior wall: he finds that the ætiology is obscure, and that they are pedunculated or sessile with about equal frequency. They usually occur in the child-bearing period but are also found in childhood. Small growths may cause no symptoms and be discovered only accidentally. Those of larger size interfere with the mobility and distensibility of the vagina, and may cause displacements of the uterus and other affections of the pelvic organs. Those developed in the anterior wall may cause trouble with the bladder (in the case above reported there was frequent and painful micturition and well-marked cystitis); and those in the posterior wall may interfere with defæcation. Large tumors may prevent coitus or prove a cause of dystocia.

Vaginal fibroids should be removed when they reach the size of a walnut. Broad-based, sessile tumors are best removed by enucleation, and pedunculated growths should be ligated: in the latter class of cases, the operator should convince himself that the pedicle is not connected with adjacent organs, and that no diverticulum of the bladder, urethra, or rectum extends into it.

COLLAPSE UNDER ETHER-ANÆSTHESIA.

BY FRANCIS W. ANTHONY, M.D., BRADFORD, MASS.

On November 6th I removed a polypus from the cervical canal (dilated without anæsthesia) of Mrs. A. W. This was followed by the use of the dull curette and the application of a saturated solution of chromic acid, the object being to give relief from flowing that had persisted, I was told, for weeks, and more or less for three years. The flowing started again in a few days, and I advised further treatment, namely, the dilatation of the os internum, and, if found advisable, the use of the curette in the uterus. The patient was a woman of good appearance; heart, as determined by previous examination, negative. She had been subject to occasional ill turns, usually at her menstrual periods, which she called her "sinking spells." I saw her about a year ago, after it was claimed she had experienced one, and regarded it as an hysterical manifestation. She had never borne children; had miscarried once a good many years ago; was about thirty-four years of age.

On November 13th I took with me to the house two physicians as assistants, although I am accustomed to take but one for such a simple matter as this promised to be; but I thought two would be helpful, and the expense was a secondary consideration. The patient was put under the influence of ether, Squibb's being used in an inhaler made of newspaper and towel. She took her ether nicely and with very little excitement. The os was unusually resistant, but was dilated slowly with the steel dilator, the instrument being turned from time to time to put all parts on equal stretch. Great care was used to stop before over-dilatation took place. The curette brought away nearly two drachms of fungoid material, and I was nearly ready to make an application of iodized phenol, when the etherizer, who had been keeping one finger on the radial artery, inquired if I had any stimulants handy. As he afterward told me, the pulse stopped almost instantly being perfectly good the moment before; the breathing had been regular and easy, there had been no cyanosis and no pallor. To show how lightly she was under the anæsthetic, a movement of the legs a minute before had compelled me to warn him to keep her under. Hastily going around the bed I found my patient with no pulse perceptible at the wrist, no apex beat felt on a hasty examination, no breathing detected even by the ear applied to the mouth nor by the hand on the chest, pupils dilated, features pinched; the pouring of ether over the chest provoked no attempt at breathing. Removing the yoke which had been used, I pulled her to the edge of the bed and began artificial respiration with the aid of one assistant directing the other to inject brandy and nitro-glycerine hypodermically. Several minutes elapsed before we could detect any attempt by the patient to breathe — sufficient time for a member of the family to fill a bottle with hot water from the kitchen and return to the room. It is hard to estimate time under such circumstances, but I should judge it to have been at least three minutes. A faint gasp now encouraged us to persevere. Artificial respiration could be abandoned after ten minutes; but the heart required stimulation for an hour, and it was nearly two hours before the arms and legs became warm although wrapped in hot blankets and surrounded by heaters. After four hours I felt safe in leaving the house.

I am entirely at a loss to account for the occurrence. The heart has not a very strong beat, but gives no evidence of organic disease; there is no suspicion of kidney trouble; the lungs are normal. Had it been due to the shock of dilatation I should have expected it at the time of dilatation and not so long afterwards. I am told by the family that the "sinking spells" are apt to be brought on by pain; and to this peculiarity of the woman's organization I must attribute the cause, although the pain could not have been recognized as such. (Query: Can there be sound without an ear to hear, or pain without consciousness?)

The patient made an uneventful recovery, having a reaction temperature of 102°, which fell steadily to normal. There has been no flowing.

The sudden emergency with no warning whatever, after every precaution had been taken, taking place during an operation that is not regarded as a particularly serious one, causes me to report the case.

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[2] Pathological Transactions, vol. i.

[3] Diseases of Women, page 887.

[4] Ueber Vaginal-Myome, Dissert. Inaug., Jena, 1888.

[5] Diseases of Women, page 157.

Medical Progress.

RECENT PROGRESS IN DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D.,
Visiting Physician to the Children's Hospital; Assistant Professor of Diseases of Children, Harvard College.

OBSERVATIONS UPON GLYCOSURIA IN INFANCY, TOGETHER WITH EXPERIMENTS IN ALIMENTARY GLYCOSURIA.[1]

THE writer attempts to prove if, and under what circumstances, glycosuria occurs in infants; also if it is an "alimentary" glycosuria.

Studies of fifty infants were made, all being breast-fed and under four weeks old. Twenty-four were in health. Most of the others had gastro-intestinal symptoms. The urine was repeatedly examined, and at different times of the day, control tests being always made. Frommer's and Nylander's tests were those used; and, when there was enough, urine polarization and fermentation also. Frommer's tests gave a positive reaction in three-fifths of the cases, being a majority both of the well and of the sick,; that is, in both conditions reducing substances were present in the urine. Control experiments with Nylander's test gave a positive reaction in but one-fifth of the cases, most of these having gastro-enteritis. The polariscope could be used but twice, and each time deviation to the right occurred. In these two cases the fermentation test was negative. Nylander's test gave constantly positive reaction in two, and transitory in five of the fatal cases. In three cases of dyspepsia it was transitory. Where positive reaction occurred, the urine was highly colored and abnormally acid.

Conclusions: (1) Glycosuria does not occur in healthy breast-fed babies. (2) In certain digestive disturbances, either of dyspeptic or gastro-enteric origin, there is sometimes present in the urine a strong reducing substance, which gives the qualitative tests for sugar, and sometimes the polarimetric but not the fermentation test. (3) This substance is present either temporarily or constantly. (4) In two cases it was possible to prove the presence of a substance which gave a deviation to the right of the polariscope but which was not fermentable. If these two cases are admitted to have been glycosuria, then this gives a relative frequency of four per cent. This frequency seems to point to its being a glycosuria of alimentary origin. In these two cases of severe gastro-enteritis, glycosuria disappeared when the infants were taken from the breast and fed upon tea, and returned when they were again put to the breast. Furthermore, the negative result of the fermentation test in these two cases points to the alimentary nature of the glycosuria, — that is, to the excretion through the urine of milk-sugar derived from food.

To determine why glycosuria occurs with certain disturbances, the author refers to various views as to changes in milk-sugar during digestion, namely: That a portion reaches the duodenum unchanged, and there meets a ferment which changes it to galactose (Dastre). A portion under the influence of the bacterium lactis aërogenes is changed to lactic acid, carbonic acid, and hydrogen (Escherich). If these changes do not occur and milk-sugar is absorbed as such, some of it may appear in the urine unchanged.

To explain glycosuria, the author admits three possibilities: That the ferment was absent, or its action by pathological bacteria, or that pathological bacteria interfered with the action of the bacterium lactis aërogenes. The author raised the question, if a large amount of sugar is given, or if the above pathological conditions exist, is the whole milk-sugar excreted as such or is part assimilated and the surplus excreted by the urine? He refers to experiments of Worm-Müller and Hofmeister, showing that, after ingestion of large quantities of sugar, a small quantity appeared in the urine, the "assimilation limit" varying with the individual and the sugar. Galactose and milk-sugar appear most readily in urine, leading Hofmeister to think that glycosuria in infants and milk-fed adults is alimentary glycosuria. To determine the "assimilation limit" of infants experiments were made both upon well children and upon those having digestive disturbances. First, the amount of sugar taken in the milk in twenty-four hours was determined for healthy breast-fed children from nineteen to forty-five days old as follows:

Case.	Age in days.	Weight in grammes.		Gain in grammes.	24°. Amount of nourishment.	24°. Amount.	Milk-sugar per kilo of body weight.
1	19	Dec. 7, 3,080	Dec. 8, 3,100	20	400	23.64	7.6
2	20	Dec. 8, 3,100	Dec. 9, 3,120	20	470	27.77	8.9
3	24	Dec. 13, 3,230	Dec. 14, 3,230	0	540	31.91	9.6
4	26	Dec. 14, 3,350	Dec. 15, 3,350	0	510	30.14	8.9
5	29	Dec. 17, 3,450	Dec. 18, 3,450	0	520	30.73	8.9
6	34	Dec. 22, 3,600	Dec. 23, 3,600	0	765	45.21	12.5
7	40	Dec. 28, 3,820	Dec. 29, 3,870	50	528	31.20	8.0
8	45	Jan. 3, 4,050	Jan. 4, 4,150	100	920	50.37	10.6
9	32	Jan. 25, 5,000	Jan. 26, 5,020	20	560	33.09	6.5
10	34	Jan. 27, 5,120	Jan. 28, 5,150	30	660	39.00	7.5
11	41	Feb. 3, 5,450	Feb. 4, 5,500	50	530	26.32	4.7
12	23	Jan. 31, 3,800	Feb. 1, 3,800	0	640	37.82	9.9
13	34	Feb. 20, 3,270	Feb. 21, 3,300	30	570	33.68	10.2

. This table shows that nurslings weighing from three thousand and eighty to five thousand one hundred and twenty grammes take in twenty-four hours about eight and six-tenths grammes of sugar per kilo of body weight without excreting sugar or other reducing substance in the urine. Then a known solution of milk-sugar was given between nursings, and the following table shows the result (see next page):

The limit was found to vary from three and one-tenth to three and six-tenths grammes per kilo. Compared with the results of Worm-Müller in adults, — that is, one and four-tenths grammes per kilo, — the assimilation limit of infants appeared much higher. The reaction lasts in the urine but a short time, and the milk-sugar solution appeared never to derange digestion.

Conclusions: (1) There is often an increase of reducing substances in the infant urine. (2) Minute quantities of carbohydrates are found in the urine. (3) Glycosuria does not occur in healthy breast-fed infants. (4) In cases of digestive disturbance, but especially in gastro-enteritis, there sometimes appears in the urine a strongly-reducing, optically-active substance, giving promptly the qualitative reactions for sugar, but which is not fermentable. (5) This substance is probably milk-sugar or some product or subdivision of it. (6) Glycosuria of breast-fed infants is of alimentary origin. (7) The "assimilation limit" for milk-sugar in nurslings is very high, being in healthy breast-fed babies about three and three-tenths grammes per kilo against one and four-tenths grammes in adults. (8) In cases of even mild digestive disturbance this limit is lowered. (9) Glycosuria in cases of digestive disturbance is due to lowering of the "assimilation limit" and perhaps to the influence of intestinal bacteria upon the disintegration of sugar.

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[1] From the clinic of Professor Epstien, Prague: Jahrbuck für Kinderheil., 34 Band, 1 Heft, p. 83, Dr. Julius Grosz.

Experiments.	Age.	Weight in grammes.	Assimilation limit in		Remarks.
			Grammes.	Kilo. of body wgt.	
3	12 days.	3 800	14	3.6	Healthy.
4	34 "	5.100	16	3.1	Healthy.
5	15 "	3.500	10	2.0	Dyspeptic.
6	34 "	3.850	14	3.6	Healthy.
7	23 "	4.050	12	2.9	Dyspeptic.
8	11 "	3.000	8	2.6	Gastro-enteritis (cured).
10	2¼ years.	8. 50	20	2.4	Healthy.
11	6 "	13.900	20	1.4	Healthy.
12	5½ "	12.700	20	1.5	Healthy.
14	5 "	16.600	30	1.8	Healthy.

THE STRUCTURE OF THE INTESTINAL CANAL IN INFANCY.[1]

The writer states that there is no complete work on this subject, and takes it up himself systematically. The mucous layer of the small intestine is thinner but richer in glandular elements than that of the adult, the proportions between glandular cells and connective tissue being reversed. The thickness of this membrane varies with age; in adults this tissue is thickest in the duodenum, thinnest in the ileum; in nurslings this difference is less pronounced, and in the newly born the thickness is not more than half of that in adults. Towards the end of the first year it grows notably thicker, and approaches the adult condition by seven years. Valvulæ conniventes, villi, and glands exist at birth. The valvulæ conniventes are, however, much less developed in proportion to the intestine as well as less numerous, and the villi are a little smaller, while their number is proportionately large; this observation being opposed to that of Baginski. The glands of Lieberkühn are shorter and of less diameter, but are relatively numerous, as compared with adults. They develop with the thickness of the mucous membrane.

Brunner's glands are relatively more numerous — that is, closer together — than later, but their development is rudimentary. The number of tubes in a lobule is over a quarter of that in adult life, while their diameter is not over a half. The number increases with age, so that by two years there is no difference in this respect. The external opening is, however, more easily seen. In the large intestine the semilunar folds are less developed than later; and here as well as in the rectum, the glands of Lieberkühn are relatively numerous compared with adults. In the appendix the solitary follicles are better developed than in the large intestine.

The author's conclusions are as follows: (1) The epithelium of the mucous membrane is completely formed at birth, and its dimensions are the same as in adult life. (2) The adenoid tissue is richer in fusiform cells as compared with glandular cells. (3) The absolute number of lymphatic elements in the intestinal villi is much less in nurslings. (4) The glands of Lieberkühn are relatively well developed, those of Brunner are rudimentary. The submucous tissue is characterized by poverty in elastic fibres, richness in cellular elements, nerves and vessels, and is more firmly attached to the mucous membrane. The muscular layer is slightly developed. The vessels of the villi are as numerous as in later life and elsewhere present nothing remarkable, and in general the mucous membrane of the nursling is as vascular as that of the adult. The nerve fibres are much thinner than in adults. There was no peculiarity found on examining cells of isolated ganglia in the plexus of Auerbach or at most an increase in small cells. Osmic acid applied to the mesenteric nerves gave a light-brown color instead of black as in adults, and in general the development of the intestinal nerves is comparable to that of the whole organism.

Various opposing observations on the solitary follicles and Peyer's patches have been made by Passow, Billard, Friedleben, Jacobi, and Müller. The author states his own. The structure of the solitary follicles is identically the same in infants as in adults, but their dimensions are much less. The number of follicles is subject to variation, independent of age; but comparing mean numbers, both of follicles and of intestinal areas, it seems that the intestine of the nursling is relatively rich in solitary follicles. He concludes that: (1) The absolute number of follicles in the small intestine increases with age. (2) In the very young, as shown by Weber, there are accumulations of glandular matter by the side of these follicles. (3) In children born before term the number of follicles is less than in those born at term. (4) The distribution of follicles is irregular, but they are more numerous in the lower parts of the intestine and are at a maximum in the ascending colon. The appendix has a great number of follicles. (5) The development of solitary glands is usually but by no means always proportioned to that of Peyer's patches. (6) Morbid processes, either general or local, exercise an influence on the number and condition of the follicles. The number of Peyer's patches probably does not alter with age but varies greatly with the individual. The proportion is therefore greatest at the time of birth. The size is greater in adults.

In general the intestines have weak muscles, comparatively well-developed mucous membrane, completely developed lymphatics, comparatively developed glands of Lieberkühn. The vascular system is well developed, as are the plexuses of nerves; but these last are wanting in the myaline layer. These differences from the adult anatomy explain many differences in the clinical picture of children.

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[1] N. Goundobine: Revue Mensuelle des Maladies de l'Enfance, May, 1892, p. 229.

TRANSMISSION OF INTESTINAL WORMS.[2]

It is generally admitted, since the works of Richter, Kuchenmeister, and Davaine, that the presence of lumbricoids in the intestine is due to direct infection with eggs accompanying food, principally fruits, vegetables and water. Leuckart advances the opinion that infection is produced by a parasite of meal containing lumbricoid eggs. Experiments by Grassi, Lutz, Leuckart, and others have not given precise results.

Epstien first determined that lumbricoid eggs develop quickest in the stools of diarrhœa, especially when exposed to air, sunlight, warmth and dampness; more slowly in damp earth and in water. Three children with surgical affections only, were used for experiments, precautions against error being taken before giving them the eggs. The stools of all the children in the clinic were examined. Observations were made in the winter when children did not go into the garden. Vegetables and fruit were excluded from the diet, and the water was examined for eggs. Finally, examinations of the stools were made every ten days. Three months later the children began almost simultaneously to pass eggs and soon after worms in the stools, thus demonstrating direct infection with this form of worm. The first evacuation of eggs occurred between the tenth and twelfth weeks. Towards the twelfth week the female measured from twenty to twenty-three centimetres, and the male from thirteen to fifteen. Later, they increased but little in length, but became larger. It is to be added that the first child had no ill effect; the second (already feeble), diarrhœa and dyspepsia; and the third was not under continuous observation. A fourth, who had only sterilized cultures of eggs, had no worms. The above facts explain the greater frequency of these worms in country children. Lumbricoids occurred in forty-three per cent. of three hundred cases, and of these, fifty-two per cent. were in suburban children, and only three and seven-tenths per cent. in children of the city proper.

PRIMARY DENTITION IN ITS RELATION TO RICKETS.[3]

There is a widespread belief among medical men that the temporary teeth are materially affected in children who are rickety, and as a result of this disorder. If it be early there are three ways in which the modifications may occur: (1) The teeth are late in their eruption. (2) The teeth are cut cross, that is, they appear in wrong order. They soon become carious and are often shed in wrong order. In our practice the correctness of these views as a whole, has for some time been held in doubt, and with the object of bringing them to the test we have made careful and extended observations on this subject. For this purpose we have examined the mouths of some five hundred children with obvious rickets, and find the results are not confirmatory of the prevalent ideas on this subject. Briefly tabulated these results are as follows: (*a*) In the vast majority of patients the teeth are perfect in structure. There is no deficiency of enamel. The teeth do not become loose and rapidly fall out. There is no special proneness to decay. (*b*) In these rare cases where the teeth have been found defective, a history of inherited syphilis has been obtained. (*c*) Dentition is undoubtedly delayed.

THE INCUBATION PERIOD OF MUMPS.[4]

My first patient was brought into contact (not very close) with a person who had recovered from the complaint and who was declared to be free from the infection eighteen days after its development. The date of his first contact with this person was March 17th; he remained in particularly good health until April 19th, when the first signs of pain and swelling of the parotid showed themselves.

On the evening of April 19th his two sisters kissed him, but did not again see him. On May 10th or twenty-one days after, they developed mumps. These cases show clearly that the incubative period of mumps can be as long as three weeks; that the patient may remain in apparently perfect health during this incubative period; that a person can transmit the disease at any rate for about three weeks after he first developes it, that the contact need only be slight in order to convey the poison.

HYPERTROPHY OF THE SPLEEN IN INFANTS.[5]

In sixty-three cases of splenic enlargement in infants, we could not postively exclude the presence of rickets in a single one, and in almost all the rickets was clear and distinct. In forty-one per cent. of the 63 cases inherited syphilis was undoubted, and in the remainder syphilis could neither be positively affirmed nor excluded. Of 155 cases of inherited syphilis the spleen was found by palpation to be enlarged at some period in 48.4 per cent.; and it is universally accepted that enlargement of the spleen is of excessive frequency in inherited syphilis — at any rate in the earliest stages — and we assert that it may persist in later stages also. This enlargement is often apparently indistinguishable histologically from that met with in cases of rickets. Our observations confirm the opinion of Kassowitz and Fournier that rickets occurs with an incontestable degree of frequency in subjects attacked with inherited syphilis. In rickets the spleen is found enlarged in perhaps twenty-five per cent. of the cases. Bone changes constitute only one of the symptoms of rickets, and are not the earliest, so that, allowing for the frequency of enlarged spleens in early syphilis, the bulk of our cases may quite possibly be due to rickets, either primarily or engrafted upon syphilis. We think, however, that we are justified in saying that in every case of an enlarged spleen in an infant, such as we have been discussing, there is reasonable ground for suspecting syphilis. We are not aware of any observations on the viscera and lymphatic glands in cases of rickets in animals, but such an inquiry seems to be very desirable as an aid to the solution of the vexed question under discussion.

Since this paper was written, Mr. Bland Sutton informs us that the spleen and liver are often, though not constantly, enlarged in rickety monkeys, especially in the very young ones.

THE Royal Academy of Medicine of Rome offers the Riberi Prize of £800 for a report of the most notable discovery in anatomy, physiology, pathology, or pharmacology made in the quinquennial period from 1892 to 1896. The report must be presented in Italian, French or Latin, before December, 1896.

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[2] A. Epstien : Jahrbuch f. Kinderheilk., 1892, Bd. xxxiii, p. 289; Revue Mensuelle des Maladies de l'Enfance, May, 1892, p. 238.

[3] Carpenter and Pedly : Lancet, 1892, i, 1077.

[4] Jessop, Edward (Hampstead, N. W.) : British Medical Journal, 1892, i, 1192.

[5] Fox and Ball (London) : British Medical Journal, 1892, i, 854.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, Nov. 14, 1892, Dr. C. P. Putnam in the chair.

INFLUENZA.

Dr. T. M. Rotch asked whether any of the members had recognized cases of grippe in their practice. He had seen, he thought, eight or ten cases. A year ago he had twelve cases of what he supposed to be grippe in October, and the epidemic followed later.

Dr. C. P. Putnam: I have seen during the month a good many cases of influenza, evidently of zymotic character. I don't see how any one can tell at this season, unless the symptoms are more marked than in the cases I saw, that it is the same epidemic we had last winter.

Dr. J. C. Munro: I have had the same experience as Dr. Putnam. I have not had any of typical grippe.

Dr. Rotch: Some of these cases have been severe. In one case in a young girl the temperature was 103° or 104° and continued for two weeks, with very great prostration, severe headache, backache, pain in the legs and loss of flesh; there was spasmodic cough night and day, going down into the larynx from the naso-pharynx, and finally a bronchitis verging on a pneumonia, but not a frank pneumonia. I have had two cases of that kind; and besides that I have had three in babies, one of them running a course of two weeks with nothing in the lung whatever to be found, but the temperature ranged from 101° to 103°, with excessive cough and extreme prostration and then melancholic symptoms in almost all the cases. To me they were undoubted cases of grippe, such as I have seen in the last few years. Then there were some of the milder cases spoken of. I have had a number of cases of mild influenza which I supposed to be mild cases of grippe. It is almost impossible to differentiate these cases, and my diagnosis was determined by the more severe forms.

Dr. Goss: I was called to a case last night which I expect is influenza. The lady has been sick since Thursday; temperature 102°, this morning 103°. There are no pulmonary symptoms, but a good deal of soreness, lameness, bruised feeling, weakness, prostration, etc.; and it recalled a good many of the cases of influenza I have seen in previous epidemics.

Dr. C. W. Townsend read a paper on

THE TREATMENT OF INCONTINENCE OF URINE IN CHILDREN.[1]

Dr. Rotch: The subject of incontinence has been spoken of by Dr. Townsend some years ago in a paper in which very much the same results were obtained. It seemed to me at that time he had dwelt, as he should have done, very strongly upon the importance of getting exactly at the cause of the incontinence if it can be done, the routine treatment of incontinence being proverbially that a large number of cases are treated, as he says, with belladonna, that being the most favorite drug; but it has struck me that we never have got at the cause of incontinence, that in the vast majority of cases we do not arrive at the cause. We treat them in rather a blind way, and sometimes we hit it and sometimes we do not. And yet it is a very important matter to any one who sees many children in his practice. The cases are very annoying, and I have been very unsuccessful in treating them. There are cases of children who on careful examination show nothing to account for their incontinence, and appear to be in perfectly robust health and not of neurotic temperment and yet prove most intractable to treatment. I have one case, a little girl whom I have watched for years and have examined carefully many times. She is the picture of health and of fine development, and she continues to have her incontinence at night, resisting all treatment. The neurotic cases are sometimes the easiest to treat, on account of the nervous element in the case. The class of cases that it seems to me are interesting on account of the possibility of a neurotic element are those of anal reflex where the children have excessive spasm of the rectum and where nothing is found to account for it. You simply find a spasmodic condition, no polypus, no hæmorrhoidal condition, no parasites, no eczema, nothing to account for it in fact, a class of cases that only can be relieved by dilating the rectum with bougies. In cases of this class, as soon you relieve the anal reflex symptoms, you produce incontinence of urine and the incontinence is so intractable that you almost wish you had left the anal reflex alone. I should say we had made scarcely any advance in the treatment of incontinence. The point Dr. Townsend makes of finding out the specific cause in a few cases and curing that cause, even though there are a large number of cases that are apparently intractable, is well taken.

Dr. E. M. Buckingham: I have been unfortunate enough, like Dr. Rotch and Dr. Townsend, to meet with a considerable number of cases in which it has been impossible for me to find the cause, but, of course, when the cause is found, it is often a help to treatment. There is one class of cases I used to see a good deal of, and have seen comparatively few lately. When I was in charge of the Children's Room at the Boston Dispensary, a great number of cases of anæmic children got well with the use of iron. I have not seem the same number of cases of this class in private practice or in other clinics. I should like to add to these causes one, which, however, may be included as acute febrile disease, and that is malaria. In recently looking up the history of the malarial cases at the Children's Hospital I found one case that certainly, and a second that possibly, depended upon malaria. In one incontinence began with rise of temperature in the malarial paroxysm and ceased at its close, coming on again with the next paroxysm. In this case there was pretty frequent defecation as well. That case I did not see myself, but came across it in the records. I do not know why you cannot have reflex incontinence from central causes. I recall a school-teacher whom I had under care a long time without success. She never dared to go with the clothing unguarded because a little excitement would cause a gush of urine which she was unable to prevent. She made a very good recovery under strychnia, but remained well only as long as she was taking it. It seems to me that the warning against belladonna is a valuable one, because it not only sometimes does give relief, not only sometimes takes the place of something that would be better, but I think in large doses it at times does a good deal of harm.

Dr. G. W. Allen: I should like to ask how the faradism was applied?

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[1] See page 590 of the Journal.

Dr. Townsend: I think Dr. Buckingham can answer that question rather better, because he persisted I remember, in the use of it more than I did. I was rather disappointed and gave it up rather quicker. I used it in several ways, but applied one pole over the perineum and one over the bladder usually.

Dr. Buckingham: With reference to these cases in which I used faradism at the hospital, it had been stated at a meeting of this or the Observation Society some years ago that faradism continued for a number of months every day and in pretty strong doses had a good effect. I did make use of it in a number of cases at the Children's Hospital. I used it about as strong as the patient could bear it, and with one pole over the end of the spine and one on the perineum; or with one on the perineum and one over the pubis. I did not measure it, partly because I had not the means and partly because I did not know how, but used it as strong as the patient could bear, and it was rather unsatisfactory in my experience.

Dr. G. W. Allen: According to Ultzmann, the ordinary cause of this trouble when reflex causes can be excluded, is an imperfect innervation of the sphincter and his treatment is faradism with one pole in the rectum and one on the perineum. He thinks the pole in the rectum is a very important feature.

Dr. W. H. Baker: I should add, as a suggestion to the first division Dr. Townsend makes, the possibility of malposition of the ureter as a cause. I had the honor of presenting to this Society some fifteen years ago a case of that kind, where the left ureter, instead of opening into the bladder, continued on and emptied by the side of the urethra. The case was operated upon successfully. It so happens that Dr. Davenport had a case for two or three years of similar character, which was likewise relieved by operation. I should say that Dr. Townsend, if he included the ureter as well as malformations of the bladder and urethra, would cover it all.

Dr. Buckingham: I should like to say a word in reference to diabetes as a cause. I recall a case in which a child was brought to the hospital looking the picture of health. There was nothing in the history as obtained except nocturnal incontinence. Examination of the urine proved that the child had diabetes.

Dr. Townsend: I am sorry I have not that on my list. I think I must have overlooked it.

Dr. C. M. Green: I was called yesterday to see a boy of about seventeen with a pretty severe attack of balanitis. He had a very long prepuce, and the story was that he had been troubled with incontinence of urine from early childhood. I would like to ask Dr. Townsend if the fact of the very elongated prepuce and the occurrence of balanitis would lead him to emphasize the probability that the long prepuce was the cause of the incontinence, and if he would circumcise in such a case if he coul not find any other cause.

Dr. Townsend: If the prepuce can be easily withdrawn and the balanitis cured by appropriate treatment, it does not seem to me necessary to circumcise. If, on the other hand, it was impossible to withdraw the foreskin enough to cure the balanitis, I should think that circumcision would be the advisable course to take.

Dr. Green: The prepuce is retractable, and there had been no adhesions.

Dr. Townsend: I think I should advise it if I could not cure the incontinence in any other way; and the fact that the boy has balanitis shows that there is a collection there from time to time and an irritant condition. I suppose the urine collects behind the long foreskin.

Dr. Rotch: Both Dr. Buckingham and Dr. Townsend have spoken of not giving belladonna on account of the harm it does. I would like to know what the harm is.

Dr. Townsend: I do not know what the specific harm would be, but I think any powerful drug continued a long time would be inadvisable.

Dr. Buckingham: I have tried the experiment, and it has produced a good deal of gastric disturbance.

Dr. Rotch: I should not suppose any one would go on with belladonna two or three months if it did not act.

Dr. Townsend: In the case I spoke of, where belladonna was kept up in doses of thirty drops two or three months, the parents were anxious to cure it, and kept up these large doses, and the child did not improve at all. At times it would have belladonna intoxication — a good deal of rash and dry throat; and at the end of that time, the child was not better and was rather debilitated. How much of that was due to belladonna I cannot say.

Dr. Buckingham: In the case to which I referred the case was continually getting better and then relapsing. The dose was increased a little with the idea that the proper dose was nearly reached. The drug was pushed a number of weeks, but the incontinence came back again, and the patient was left in bad condition. I doubt if it was good treatment.

Dr. Rotch: I criticise ruling out belladonna in the treatment of incontinence. They have treated large numbers of cases in New York with atropia. We do not know how to get at the cause of incontinence in the vast majority of cases, and belladonna in the form of atropia acts better than any other drug we know of. They do not, however, continue it for a long time if there is no improvement. The belladonna acts in a short time if it is going to cure. If it does not cure, do not renew the belladonna. It seems to me a pity to raise a cry against belladonna treatment. We must treat empirically for the present.

Dr. Townsend: I think Dr. Rotch has stated my position exactly about that. Far from wishing to undervalue the drug, I stated that I had seen signal successes with atropia; and it seems to me to be the best thing to use if we cannot find any cause that can be removed. Many writers have spoken of it as important to continue in large doses for a long time. I have seen several statements that the reason of lack of success is the fact it is not continued long enough.

Dr. Buckingham: I understood Dr. Townsend that he would not rule out belladonna, but would not use it as a routine treatment. The temptation is great when you have three or four nights of comfort and then a relapse, to increase the dose slightly.

Dr. F. W. Goss: I had a boy thirteen or fourteen years of age who was certainly relieved for several weeks from the use of rhus aromatica. I do not know whether the results have been permanent, but I think if the trouble had come back I should have been informed of it.

Dr. Putnam: Dr. Townsend used an expression which recognized the position of will-power with regard to this affection, in saying that the attacks generally occurred in the night when the volition was less powerful than in the day. I have thought in some very obstinate cases a very great deal had been accomplished by stirring up the consciousness of the patients, especially in older girls and boys. I think it makes a great difference if it can be impressed upon them that they must keep their control working even in the night. There was a striking case of this in a girl of sixteen years, of a neurotic family and perhaps more impressionable than many another might be. It was a very obstinate case and had been treated by other physicians in Europe and at home before. She slept very sound and it was with great difficulty that she could be awakened at all in the night. A good deal of medicine had been given without effect. I made her sit down every evening before going to bed and write me a note saying that she was going to try to control herself during the night. She put her note in different words every night, and it had a very remarkable effect. The same has occurred in other cases.

I would suggest that it is not correct to speak of breaking up adhesions in drawing back the prepuce. It seems to me that it is a condition of incomplete development which is present, that is to say, the natural separation between the prepuce and glans does not necessarily take place gradually from before backwards, but sometimes a separation takes place at one point, sometimes at another, sometimes in the middle, sometimes in the furrow behind the glans, sometimes in the front part. Originally the glans and the prepuce are the same thing and are gradually differentiated. When for some reason we think it best to complete the separation all at once, we draw back the prepuce and in a very short time the two bleeding surfaces become covered by epithelium. I do not think there is any evidence that these are adhesions that are torn, that is to say, that the prepuce and glans were ever separated and then united together afterwards. That is the reason I think why so many cases of so-called adhesions are found. One can hardly believe that there is an abnormal condition, namely, adhesions, in eighty per cent. of cases and only a normal condition in twenty per cent. At a still younger age we should find ninety per cent. not differentiated; and, of course, at a still earlier stage of development there would be no separation at all.

Dr. R. W. Greenleaf: I had a case a short time ago in a young lady seventeen years of age, under treatment with various kinds of drugs, at no time able to go more than two hours without passing urine; and simple suggestion in her case relieved it fully.

Dr. Townsend: This paper was not intended as an extensive review of the treatment of incontinence, but I began it for my own satisfaction to analyze these cases at the hospital and in my private practice, to see if possibly I could arrive at some conclusions as to the best methods of treatment, and I hoped I should hear some more satisfactory methods of treatment to-night. It certainly is a most distressing affection, and families in which incontinence exists are ready to accept any form of treatment if they can be assured of relief.

Dr. E. H. Bradford read a paper on

CASES OF PSEUDO-PARALYSIS.[2]

Dr. Rotch: Has not Dr. Bradford noticed cases such as he describes under one and a half years?

Dr. Bradford: I do not see the children at that age.

Dr. Rotch: The class of cases which Dr. Bradford speaks of I have seen a large number of; and I think the largest number of cases occur from the ninth to the tenth or eleventh months. They are exceedingly interesting, but it seems to me in the future we shall merely look upon pseudo-paralysis as a symptom and not a disease. There are a number of diseases in which it occurs. I have made a careful study of these cases during the last two years and the pseudo-paralysis apparently comes from different causes. I think there is no doubt in a certain number of cases that babies have rheumatism, and these young children have their pseudo-paralysis from a localized rheumatic condition. I think, however, that a large number of cases of so-called rheumatism have been mistaken for the class of cases which Dr. Bradford has described, and the attention of the general practitioner should be called to the fact that they must not overlook cases of this kind and call them rheumatism. Pseudo-paralysis is also a symptom of hereditary syphilis and of scorbutus. It seems to me that the scorbutus cases are distinct from other forms of malnutrition, and that there is something besides the poor food which they are getting which may possibly cause it. Young babies before they have cut their teeth do not show the symptoms of scurvy in the mouth, which is one of the most important means of making the diagnosis in the older child. We can have scorbutic symptoms appear in a case of rachitis, but I do not think it is common in rachitis to get these symptoms. Then you have a different pathology from rachitis, the pathology of scorbutus being a subperiosteal hæmorrhage in the neighborhood of the epiphyses. There have been some very careful sections made of the bone in these cases, which show a different pathological condition from that of rachitis and of syphilis; and yet the symptoms of pseudo-paralysis may occur in each of these diseases. My point is, that the cases of pseudo-paralysis in the future will be described as representing the symptoms of a number of diseases. I have seen cases with pseudo-paralysis, treated for months on splints and on such apparatus as Dr. Bradford has described with but little improvement, radically improve in a few days under the administration of lemon-juice. I have had the blood examined in quite a number of these scorbutic cases with pseudo-paralysis, and have found a decided lessening of the hæmoglobin.

Dr. Townsend: I have seen a number of these cases that Dr. Bradford has described as very characteristic cases, and I had supposed that in a good many of them at least the element of scurvy was a very important one. In the two articles in the "Encyclopædia of Children's Diseases" on rachitis and scurvy by Bury and Barlow, they speak of acute rachitis as being really a scurvy in which there was, or was not, some rachitis, but the scurvy was the essential element. I looked over my notes of a few cases before coming to-night; and in five cases that I have brought brief notes of, the scurvy was the essential element. In four of these rachitis was also present, but in two I think not very marked. In all five the rapid improvement that followed dietetic treatment was marked. I will mention only one of these cases in particular where there was pseudo-paralysis. There was also very slight beading of the ribs, and the beading of the ribs and the enlargement of the head with sweating were the only signs of rachitis. Beside the pseudo-paralysis there was bleeding from the gums, and the child, who was eleven months old, had extensive ecchymoses on both legs, caused apparently by crawling, or attempting to crawl, on the floor. These black-and-blue marks had come on before the paralysis apparently, because at the time I saw the child the child was unable to move, and would cry out at any one approaching it, evidently wanting to be left alone. The child was nearly well in two or three days on change of diet and the use of beef and orange juice. It seemed to me in that case the scurvy element was very prominent. The connection between scurvy and rachitis is of course a very interesting subject.

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[2] See page 593 of the Journal.

DR. GOSS: I presume one of these cases Dr. Bradford reported was one he saw with me. That child was about fifteen months of age.

DR. TOWNSEND: Dr Rotch spoke of warning general practitioners not to call every case rheumatism, some of them being, as Dr. Bradford has described, true growing pains, disease of the epiphyses. I think, on the other hand, there is greater danger of the opposite mistake of disregarding these cases, and saying they are only growing pains when they are often rheumatism. I have seen a number of these cases where the physician, or the family had disregarded these pains which were rheumatic in origin, and the children developed endocarditis, which might have been prevented, or at least limited if the true rheumatic character of the arthritis had been recognized.

DR. ROTCH: Scorbutic cases are very marked, and it is possible that scorbutic symptoms may sometimes develop rachitis, because rachitis is a depressing disease.

DR. TOWNSEND: I should like to ask Dr. Rotch how he distinguishes cases of scurvy from those other cases he speaks of.

DR. ROTCH: Where there are one or two teeth it is not very difficult. They always have ulcerative stomatitis as a rule. It is exceedingly rare to have a child with teeth and scurvy that has not ulcerative stomatitis. The difficulty comes where there are no teeth. But the real way to make the diagnosis of scurvy in the baby that has no teeth is to use a subcutaneous syringe and find a subperiosteal hæmorrhage just above the epiphyses.

DR. C. M. GREEN showed a specimen of

FIBRO-MYOMA OF THE VAGINA.[3]

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

(Concluded from No. 24, page 580.)

FIFTH Annual Meeting, held in Louisville, Ky., November 15, 16 and 17, 1892.

THIRD DAY, — MORNING SESSION.

DR. A. M. CARTLEDGE, of Louisville, read a paper entitled

THE PRESENT STATUS OF DRAINAGE IN SURGERY.

He presented the following summary:

(1) The principle of artificial drainage in surgery, while very ancient, was imperfectly understood, and was oftentimes as much a factor for evil as for good.

(2) Though our knowledge of the principles which govern a healthy regeneration of wounded structures has greatly advanced, and our progress in wound therapeutics kept pace, we fail to appreciate how artificial drainage can be altogether dispensed with in surgical practice.

(3) To lessen the use of artificial drainage it is necessary to thoroughly apply the principles of asepsis and antisepsis, combined with buried sutures, fixation and alimentary or systemic drainage.

(4) Where from any reason the production of a serum cannot be controlled, its removal by drainage is a safer surgical measure than any attempt at sterilization *in situ*.

(5) The time required for primary drainage is from twenty-four to sixty hours; to wait longer is to encourage trouble, to remove sooner than twenty-four hours is taking risks not warranted in the premises.

(6) Capillary is to be preferred to tubular drainage in wounds other than those of the large cavities. For this purpose absorbable material should be selected, catgut being the best.

(7) Where it is desirable to combine hemostasis and drainage in the same measure, the strips of iodoform gauze, as recommended by Mikulicz, fulfil a most useful purpose.

(8) Where natural drainage can be utilized without producing unsightly cicatrices, artificial drainage should be dispensed with; when feasible combine the two.

(9) Wounds involving the brain and cord had best be drained to avoid mechanical violence to the function of delicate structures by retained serum.

(10) Necessity for artificial drainage will most often arise in wounds invading the large cavities, here the flexible tubular drains (glass) best meet the requirements, aided or not by materials acting by capillarity.

(11) The method of secondary suture after primary wound secretion is over, advised by Kocher, seems to possess no advantage over drains that have to be removed, and certainly is not to be compared in convenience, comfort, etc., to the patient, to absorbable capillary drains.

DR. WILLIAM H. MYERS, of Fort Wayne, Indiana, read a paper on

THE TREATMENT OF TUBERCULAR PERITONITIS.

He said when we have arrived at the conclusion that peritonitis is present, and have discovered the cause, the blow must be struck simultaneously with the onset. No delay can safely be tolerated, the only hope of rescue being the sudden arrest of the disease. By the time that the normal outlines of the abdomen are obscured by tympanitic distention, respiration quickened and shallow, the pulse rapid and wiry, the supreme moment for precise diagnosis is passed. Abdominal section for tubercular peritonitis was the most recent triumph of surgery. Dr. Myers had treated three cases of tubercular peritonitis by abdominal section, washing out the abdominal cavity and drainage, with complete recovery.

DR. G. FRANK LYDSTON, of Chicago, followed with a paper on

BACTERIOLOGICAL RESEARCH IN ITS RELATIONS TO THE SURGERY OF THE GENITO-URINARY ORGANS.

The author said that, in his opinion, modern bacteriological and pathological research has nowhere been more productive of scientific and practical progress than in the special field of genito-urinary surgery. He would not attempt to decide the question as to whether under certain circumstances the microbial organisms which are constantly to be found in the secretions of the genito-urinary tract, are causal factors in pathogenesis of various forms; or, on the other hand, to decide the precise relation of hetero-genetic organisms to the same morbid processes. The relation between what may be termed the normal germ and germs of non-pathogenic properties must certainly be left to the practical microbiologist. We are warranted, however, in drawing certain inferences and making certain practical deductions from what we know of the evolutionary laws of progression, differentiation and adaptation to environment. Many of the diverse forms of disease of microbial origin were doubtless embraced under the omnibus term of urinary infection. The present state of our knowledge does not admit of arbitrary differentiation between them. It is sufficient to say that many forms of organic and functional change affecting the genito-urinary tract are of microbial origin. These processes range in severity from a general infection with effusion and perhaps suppuration in joint cavities to so simple a local lesion as a chronic prostatic irritation. The author quoted the researches of such modern authors as Reginald Harrison, Halle, Rovsing, Krögius, Bumn, Albarran, and Gujon.

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[3] See page 591 of the Journal.

Dr. Joseph Taber Johnson, of Washington, D. C., read a paper entitled

OVARIOTOMY IN OLD WOMEN,

in which he reported three cases, and felt quite sure that prolonged anæsthesia and manipulation within the peritoneal cavity would have proved fatal. The first patient was sixty-seven years of age, and the tumor removed weighed fifty-two pounds. The second case was one of multilocular ovarian tumor. The patient was sixty-eight years of age, and the tumor weighed sixty-four pounds. On October 10th of this year, he removed an ovarian tumor weighing fifty-six pounds from a lady who was sixty-seven years old, but who looked to be one hundred Improved methods, quicker operations, antiseptic technique and provisions against shock, show thirty-eight recent cases between the ages of sixty-seven and eighty-two, with only two deaths, against twenty-four cases, done twenty years ago, between the ages of sixty and sixty-seven with a record of six deaths. These figures demonstrate in addition to improved technique the surprising fact that old age is no contra-indication against ovariotomy.

Dr. Bedford Brown, of Alexandria, Va., read a paper entitled

THE SIMPLE, SEPTIC, TRAUMATIC AND SPECIFIC FORMS OF CERVICITIS AND THEIR TREATMENT.

Simple cervicitis arises alone from simple causes. It never originates from infection of any kind. It could exist for an indefinite period without infecting surrounding structures. For many years the author in the treatment of this affection has addressed his remedies to the interior of the cervical canal alone, whether he used nitrate of silver, sulphate of copper, carbolic acid or iodine. Septic cervicitis arises always from septic infection and in itself becomes a centre of septic infection for the pelvic structures connected by lymphatic communication. Contact with the os of portions of putrescent placenta, membranes, coagula or septic discharges from diseased uteri were the common causes. Antiseptic measures alone could counteract septic infection and inflammation whether in the form of septicæmic fever or local inflammatory action. All other agencies were simply palliative or adjuvant in character. Traumatic cervicitis was simply inflammation and congestion of the cervix from wounds inflicted on that body either during labor, abortion or from the use of dilating instruments. The author treats this form of cervicitis by means of a solution of nitrate of silver, varying in strength from a scruple to half a drachm applied in the canal and over the entire cervix. He finds that most of his cases of open and all cases of concealed wounds heal by this method. Specific cervicitis may arise either from gonorrhœal or syphilitic infection. In the early stages he resorts to douches containing peroxide of hydrogen in the proportion of one part to three-fourths of boiled water, and also permanganate of potash, one grain to the ounce of water.

Dr. James Evans, of Florence, S. C., contributed a paper on

SHOCK.

The speaker said in the severe injuries inflicted on the body by accident, and in the major operations of surgery, not the least element of danger to life is the condition known as shock, which rapidly supervenes. The degree of shock is not determined solely by the extent and gravity of the physical injury. Certain idiosyncrasies of constitution, the character of the force which inflicted the injury, and the circumstances under which it occurred, are potent factors in its determination. Individuals of a highly wrought and exquisitely nervous organization bear pain with far less fortitude and are more susceptible to shock than those of dull and obtuse intellects and blunted sensibilities. The author reported a case in point. In laying the foundation of a bridge across the Pedee River in South Carolina, an immense block of granite weighing over a ton was being lowered into a pit forty-four feet in depth, at the bottom of which was a man who was to direct when it was in proper position. When this hugh block of stone was suspended over the pit, the cable holding it began to slip, and the man below was warned to crouch in a corner, as it would inevitably fall. The rock did fall, and the man in the pit miraculously escaped without injury, but he was taken out in a perfectly lifeless condition and was exceedingly ill for more than a week.

A MANIPULATIVE MISTAKE AND ITS CONSEQUENCES.

This paper was read by Dr. George Ross, of Richmond, Va. The author related the case of a woman who had suffered from unremitting, agonizing tenesmus, the result of a mass which she carried for seven years in her bladder, and which proved on inspection to be a pledget of absorbent cotton once saturated with iodine, in shape a truncated cone, and thinly incrusted with phosphate of lime. The patient believed it was introduced by her first physician, who, when attempting to apply an intra-uterine dressing, mistook the urethra for the cervical canal.

Dr. William Perrin Nicolson, of Atlanta, made some remarks on

HARE-LIP OPERATIONS,

in which he advocated the use of a simple suture instead of a pin, and also recommended paring the edges.

Dr. Edwin Ricketts, of Cincinnati, read a short paper entitled

CHOLECYSTOTOMY, WITH THE REPORT OF A CASE.

He had operated thirteen times for obstruction of the gall-ducts. The patient, a lady, thirty-four years of age, married, consulted him last June. She had never suffered markedly from jaundice, nor from acute attacks of hepatic colic; no marked distention over the region of the gall-bladder; abdominal wall at least three inches in thickness; some general tenderness of the liver elicited by percussion. The patient had the characteristic putty-colored stools, and was losing flesh rapidly. The author advocated allowing a glass drainage-tube to remain in until the common duct was opened, and then, if necessary, to make an anastomosis between the gall-bladder and the duodenum.

The following officers were elected: President, Dr. Bedford Brown, of Alexandria, Va.; First Vice-President, Dr. Joseph Price, of Philadelphia, Pa.; Second Vice-President, Dr. George A. Baxter, of Chattanooga, Tenn.; Secretary, Dr. W. E. B. Davis, of Birmingham, Ala.; Treasurer, Dr. Hardin P. Cochrane, of Birmingham, Ala.

Place of meeting, New Orleans, La. Time, second Tuesday in November, 1893. Chairman of Committee of Arrangements, Dr. Albert Miles.

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Recent Literature.

A Manual of Modern Surgery. For the Use of Students and Practitioners. By John B. Roberts, A.M., M.D., Professor of Surgery in the Women's Medical College of Pennsylvania, etc. 501 Illustrations. Philadelphia: Lea Brothers & Co.

The book, as its title indicates, is a condensed description of the accepted ideas and procedures of modern surgical practice. The subject is well classified.

Part I, comprising its first 150 pages, treats of general subjects, namely, Inflammation, Destructive Inflammatory Processes, Erysipelas, Septic Processes, Scrofula, Tuberculosis, Syphilis, Rachitis, Tumors, Shock, Process of Repair, Operative Surgery in General, Plastic or Reparative Surgery.

Part II is devoted to a consideration of Surgery in its especial application to the different structures and areas of the body, and is arranged on an anatomical basis, including a chapter on Orthopedic Surgery, and another on Amputations.

The book is well written. Its style is concise. It is thoroughly practical; and the intention of the author to make it so, is apparent on every page. In fact, at times it has caused him to exceed his purpose, and to sacrifice the value of his description in an attempt at condensation and brevity.

A book written on the plan stated by the author in his preface, without reference to, or quotation of, authorities, must be regarded as an expression of individual opinion, and is, therefore, particularly on those subjects which Professor Roberts has made the object of especial investigation, — for example, Cerebral Surgery and Cranial Injury, — a valuable and interesting contribution. These are naturally the best written portions of the work. In other places the attempt at conciseness, as before mentioned, has resulted in an article which cannot be regarded as complete. The present most approved methods are not always given; and after-treatment, a subject of marked importance, is often scarcely mentioned. One example of this is the chapter on Orthopedics. Other instances, are the brief allusion to the use of saline solution in the treatment of hæmorrhage; the "Gamger" method of treatment of lymphangitis and lymphadenitis; the treatment of hip-disease; the "Koch" method of reduction of shoulder dislocations; the subluxation, or more correctly, dislocation of the head of the radius downward (by elongation); the radical cure of herniæ.

The above comments are not made with the idea of condemnation, but of giving an accurate description of the character of the work. To condense so large a subject as Modern Surgery so as to make a practical epitome and not omit some important facts, is a very difficult task. Some subjects are necessarily so treated that the result is scarcely more than a pathological classification, or an enumeration of a variety of operative procedures.

The chief value of this book is in the many valuable and practical points derived from its author's personal knowledge and experience. Where the subject-matter consists of data derived from sources other than the author's personal knowledge, it is open to the criticism that the description is often too brief for actual work, and no clue is given to the source from which more information on the subject can be obtained. The book is an excellent, but not always complete, review of the subject indicated by its title.

Text-book of the Embryology of Man and Mammals. By Dr. Oscar Hertwig. Translated from the third German Edition by Prof. E. L. Mark. New York: McMillan & Co. 1892.

Hertwig's embryology is a treatise of acknowledged high standing, which has passed rapidly through three German editions, and which should meet with favor in its English form. The translator's work has been exceptionally well done, for the rendering is both accurate and smooth. The English publishers have taken successful pains with the manufacture of the volume, the typography being clear and attractive and the illustrations well printed. A good index closes the volume, which is issued in the same size and style as Sedgwick's "Translation of Claus's Zoölogy."

Hertwig's book is valuable especially for the remarkable clearness with which the facts of embryology are presented; for the well-considered emphasis, which is laid on the essential morphological relations throughout; and for the comprehensive treatment of the matter. It has the serious defect of being intended largely to establish a theory in regard to the origin and differentiation of the middle germ-layer of the embryo, which we now know to be erroneous. Its usefulness is further impaired by erroneous and imperfect accounts of certain organs. For instance, the history of the uterus and placenta is by no means in accord with our present knowledge; and that given of the brain is certainly inadequate. In spite, however, of these limitations, the work has been welcomed by all embryologists, and is highly esteemed by them, especially on account of the admirable presentation made by the author of many of the most interesting problems with which their investigations have to deal.

Asheville, or the Sky Land. By Mrs. Harriet Adams Sawyer. Pages 104, with 29 illustrations, St. Louis, 1892. Price 80 cents.

Mrs. Sawyer has collected a number of copies of excellent photographs of the superb scenery in and near Asheville, N. C., which alone make her little book an agreeable possession. It is probably difficult for one who has felt the exhilaration of the mountain air of Asheville and has seen the wonderful beauty of the views from Kenilworth Inn and from the Battery Park Hotel, to write judicially of that charming country. Perhaps it is not surprising, therefore, that Mrs. Sawyer speaks in a optimistic way as to the execrable streets and roads of the city and its vicinity, and even uses the euphemism "good system of sewerage" in referring to the sewers for the larger buildings and some of the dwellings. Her book may be had by addressing her at St. Louis, P. O. Box 396.

Studies of Old Case Books. By Sir James Paget, Bart. 164 pages. London and New York: Longmans, Green & Co.

This book is a collection of exceedingly interesting and well-written articles on lesions of either unusual occurrence, or which have not attracted especial attention. They are interesting as showing the method of investigation and acuteness of observation of their distinguished author during an experience of more than forty years, previous to 1870. It is a glimpse of the past which is full of valuable information even to the modern practitioner.

The work is divided into seventeen chapters, and treats of isolated subjects which it is unnecessary to enumerate here. The work is one which is well worth a careful perusal.

Essentials of Minor Surgery and Bandaging. With an Appendix on Venereal Diseases, arranged in the Form of Questions and Answers, prepared especially for Students of Medicine. By Edward Martin, A.M., M.D. Instructor in Operative Surgery, University of Pennsylvania, etc. Illustrated. Philadelphia: W. B. Saunders.

The above title describes very accurately this little work. It is well written and will undoubtedly be of value to one wishing to make a rapid review of these subjects. It describes, in addition to the ordinary forms of bandages, the usual methods of suturing wounds, antiseptics (with reference to dressings and operations), anæsthesia, the use of anæsthetics, the treatment of the ordinary fractures and discolorations. The part on venereal diseases (26 pages) deals in the same concise manner with simple venereal ulcers, gonorrhœa and syphilis.

Diseases of the Chest, Throat, and Nasal Cavities. Including Physical Diagnosis and Diseases of the Lungs, Heart and Aorta, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland and Œsophagus. By E. Fletcher Ingals, A.M., M.D., Professor of Laryngology and Practice of Medicine, Rush Medical College, etc. Second edition, revised and enlarged. 240 Illustrations. Octavo, 700 pages. New York: William Wood & Co. 1892.

The second edition of Dr. Ingals's book presents some improvements over the first, especially in the part relating to diseases of the throat and nasal cavities. The first part is much the same as before, most of the changes being in the treatment of the different affections. The work should be bound in two volumes and each sold separately. There is no reason why a condensed manual on diseases of the chest should be in the same cover with a text-book on diseases of the throat and nose. The former contains 260 pages; the latter nearly 400 pages. The former contains what every general practitioner should know; the latter would serve as an excellent book of reference for the student in laryngology, or the practising physician, and is essential to the library of the laryngologist. The last part has been brought up to date, and describes the diseases of the upper air-passages in a very well arranged and interesting manner and contains several points of information which are insufficiently dealt with in other text-books. In both parts the double-column arrangement for differential diagnosis adds to its value as a book of reference.

Complete Obstetric Record. Prepared and published by Joel A. Miner, Ann Arbor, Michigan.

This record is designed for the convenience of the practitioner in preserving the usual records of obstetric cases, together with the data, now required by many States, concerning the parents' age, birthplace, occupation, etc. There is also some space for noting the family history of the parents, and special remarks concerning the pregnancy, labor, and puerperal state. The amount of this space seems altogether inadequate, if the records are to be of sufficient fulness to have any decided value; and it is much more convenient to have record-books of this character of a size suitable for the pocket or obstetric bag, instead of quarto size like this.

The Medical News Visiting-List for 1893. Weekly (dated, for thirty patients). Philadelphia: Lea Brothers & Co. 1892.

This excellent visiting-list has been thoroughly revised and brought up to date. The thirty-two pages of text contain useful data for the practitioner, whether physician or surgeon, among which are a table of diseases, the new and approved remedies and a table of doses. There are also sections on examination of urine, artificial respiration, incompatibles, poisons and antidotes, diagnostic table of eruptive fevers and the ligation of arteries.

The Physician's Pocket Day-Book. Designed by C. Henri Leonard, M.D. Fifteenth year. Detroit, Mich.: The Illustrated Medical Publishing Journal Co.

This differs from many visiting-lists in not being dated for any particular month or year. It may be begun at any time and runs over thirteen months. Each patient has a double line on a double page with space for eleven days without rewriting. The book contains the usual tables and blank pages for miscellaneous accounts. This day-book has already been published for fifteen years, and is well and favorably known.

The Physician's Visiting-List (Lindsay & Blakiston's). Philadelphia: P. Blakiston, Sons & Co.

This visiting-list is so widely known that a description of it is hardly necessary. It is, for the average practitioner, at least as convenient as any published. The smallest size, containing space for twenty five patients a week, may be easily carried in the pocket, and weighs but three and a half ounces. It is especially admirable for its conciseness and simplicity. It contains as many tables as is needed for pocket reference. In this issue the doses are given in both the metric and English systems, and a short description of the metric system, which is to be used in the new edition of the Pharmacopœia, is given.

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THE ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION IN MEXICO.

THE twentieth annual meeting of the American Public Health Association, which was held in the City of Mexico from November 29th to December 2d, brought together a very large number of the more prominent public health authorities of the United States and Canada. Delegates from the various States of Mexico, and from the Superior Board of Health of the Republic were present, together with many Mexican physicians interested in public hygiene; and the first Health Congress of representatives of Canada, the United States and Mexico appears to have been a decided success.

The Mexican government had made most elaborate preparations for the meeting; the foreign visitors were received at the frontier by officials charged by the President of the Republic to take every measure essential to their safety or convenience. Custom-house examinations were omitted, and the long journey through the Northern States of the Republic down to the capital was marked at every important station by manifestations of interest and good-will that cannot be forgotten. The visitors found on their arrival at the City of Mexico that these attentions were but a foretaste of a hospitality that was to be limited only by their stay in the country. The courtesies shown were by no means confined to forms of speech or social attentions, but consisted in the arrangement of convenient lodging-places, in the enlisting of a number of young men familiar with English and Spanish for the purpose of helping the stranger in all the perplexities of a foreign city and an unknown tongue; in fact, every Mexican appeared to be acting under a special commission to assist in every manner possible the members of the Association.

President Diaz showed a great interest in the purposes of the meeting, was present at the opening ceremonies, received and entertained the Association at the palace of Chapultepec with a grace and simplicity that seem to be peculiar to this most remarkable man.

The various hospitals, medical schools and public institutions were shown, but none of these attracted so much attention from the public health authorities of the United States, as the offices and laboratories of the Superior Board of Health — the National Board of Health of Mexico. The best scientific men of the country are associated in this organization, receive respectable salaries, and enjoy positions, which the most favored health-officers in this country can but envy.

The papers which were presented to the Association contained nothing especially new or interesting. Dr. Carmona, of Valle, read a paper upon "Yellow Fever." It will be remembered that his investigations into the nature of this disease attracted much attention a few years since, at the time of the publication of Dr. Freire's description of the organism believed by the latter to be characteristic of yellow fever. Dr. Carmona's views do not seem to have been disturbed by the adverse criticisms called forth by his earlier publication upon this subject; he exhibited specimens and cultivations which he believed to be evidences of the truth of his claims, but did not bring forward anything essentially new in the way of laboratory experiments. Dr. Ramirez de Avellano presented an interesting paper upon "Croup in the City of Mexico," in which it was maintained that diphtheria, in the form, at least, under which we see this disease in the United States, is not a common disease in that city, a position to which the local physicians present appeared to assent. Dr. Smart, U. S. A., in a short, but carefully prepared paper, narrated a case, which illustrated very strikingly the production of malarial fever by a water-supply of suspicious origin, and the relief from the malarious condition by the improvement of the source of supply.

The disease which, more often than any other, was the subject of discussion by the Mexican members was typhus. This fever was prevalent at Zacatecas and several other cities to such an extent that members of the Association were officially advised to refrain from visiting the localities infected. It seems here, as always, to be the companion of famine and filth, for portions of northern Mexico have suffered much in the past two years from a deficient rainfall and ruined crops.

Tuberculosis was the subject of perhaps the most interesting debate of the session, which followed the reading of a paper by Dr. Antonio Carbajol, of Mexico, on the influence of the climate of the country upon the disease. The position of the Mexican authorities upon the subject of the communicability of phthisis is very clearly marked in the direction of recent bacterial investigation.

The four days to which the session was limited, proved insufficient for the reading and discussion of the many papers offered, and several important communications will first appear in the printed transactions.

Among the reports of the standing committees two attracted especial notice: The report of the Committee on Protective Inoculation, presented by Dr. Sternberg, U. S. A., and that submitted by the Committee on National Health Legislation. The recommendations of the latter committee were adopted without dissent, and are essentially the same as have been adopted by this body in previous years, that is: The organization of a national public health service under a responsible head and the formation of a large advisory council of sanitarians, who should represent as nearly as possible the health boards of the several States, and meet at least once in each year at Washington, and at other times when called together by the President for the purposes of coöperation or conference.

The Association also declared itself, by the same vote, in favor of a national quarantine service, "which shall do what no local quarantine can so well do, utilize the information obtained in every foreign country by the United States diplomatic and consular service; utilize the knowledge gained by all the several divisions of the national health service, and systematize the quarantine service so that, instead of being, as now, exceedingly weak and inefficient in many places, it shall become uniformly effective."

Dr. Jenkins, of New York, was present, and was received with very marked attention by the Mexican authorities. Some of the doctor's indiscreet associates attempted to drive the Association into a wholesale approval of the quarantine administration in New York harbor during the past season, but the resolution introduced by them was not adopted. The more conservative members evidently did not believe that the Association, as a whole, had such knowledge of the real state of affairs at New York as would justify the organization in pronouncing an opinion upon the subject of the local administration of its quarantine.

The experience of this attempt to greatly enlarge the constituency of the Association has shown that something has been lost in the opportunity given for the discussion and consideration of local administrative measures; but, on the other hand, much has been gained, not only by the larger outlook, but also by the nearer view of a system of public health service which has been organized with a courage and liberality that the United States have not yet shown.

The election of Dr. S. H. Durgin to the presidency for the ensuing year was the recognition on the part of the Association of many years of valuable work within that body, and of a public service in municipal sanitation which is exceptional in this country both by its merit and by its duration.

Typhoid Fever in Mexico. — A severe epidemic of typhoid fever is reported from San Luis Potosi. Several hundred deaths have occurred during the past few weeks.

Myrrholin. — Under this name Dr. Kahn uses a solution of myrrh in an equal quantity of oil together with creasote, in laryngeal and pulmonary phthisis, finding that patients bear it much better than creasote alone. Thirty cubic centimetres of creasote with twenty of myrrholin are given in a dose in capsules.

THE FIFTIETH ANNUAL REPORT OF THE VITAL STATISTICS OF MASSACHUSETTS.[1]

In 1841 the American Academy of Arts and Sciences appointed a committee to urge upon the legislature the passage of a law to provide for collecting and publishing the vital statistics of the State of Massachusetts. This committee was seconded by the councillors of the Massachusetts Medical Society, and their petitions were placed before the General Court in March, 1841. The following winter a suitable law was passed and went into immediate operation, so that the first report deals with statistics of the remaining portion of the year 1842.

The Secretary of State entered upon the work with enthusiasm. He had the able assistance of Lemuel Shattuck, Augustus A. Gould, J. Ingersoll Bowditch and Edward Jarvis, in his early endeavors to bring his reports up to the highest possible standard of excellence. For forty-nine years, the high ideals with which these men labored were maintained and followed. The editing of the reports was placed in the hands of men like Curtis, Shurtleff, Gould, Derby, who so established the character of the Massachusetts Registration Reports as to make them the best in this country and eagerly sought for by statisticians in Europe. After the creation of the State Board of Health, the reports were edited by its secretary or temporarily as approved by the Board. The report has just appeared in its fiftieth volume — *sed quantum mutatus ab illo.*

The present incumbent of the office of Secretary of State has departed from the established custom of forty-nine years, has taken the report from competent hands in the office of the State Board of Health, where it was edited by the Board's secretary Dr. Abbott, with the coöperation of Dr. Walcott and Dr. Draper, and has given it to an untried and inexpert editor, "the design being" in the words of the Secretary of State "to reduce the volume of the statistics as far as may be, without impairing their practical utility." The editor, he adds, "has performed his work with a litertary skill and originality of treatment which give to the report a fresh interest."

We quote at length the following paragraph of the report, page 114, partly to illustrate the secretary's idea of "literary skill," and in part to show the editor's "originality of treatment."

> "Now in the census years there is no discrepancy in the population nor in the rates, but take a non-census year, where the population is estimated, and the table for 1889 estimates it for, say 1887, 2,058,647, while in the table for 1890 the population for 1887 is estimated at 2,060,861, while all the columns devoted to ratios differ in the figure obtained by a change in the divisor for the different years; and this difference obtains in several previous non-census years, so that a man who tries to solve a problem on the Massachusetts rates for 1889 gets quite a different result from the man who tries to solve the same problem by the Massachusetts rates for 1890, as they relate to several non-census years."

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[1] Public Document, No. 1, Fiftieth Report of Births, Marriages and Deaths in the Commonwealth; Returns of Libels for Divorce, and Returns of Deaths investigated by the Medical Examiners for the year 1891. Prepared by the Secretary of the Commonwealth. Edited by Francis A. Harris, M.D. Boston: Wright & Potter Printing Co., State Printers, 18 Post Office Square. 1892

The error in the population referred to is at worst only *one-tenth of one per cent.*, and the difference in the tables of rates is only *from one one-hundredth to three one-hundredths of one per cent.;* birth-rates 25.83 and 25.80; marriages 18.98 and 18.96; death-rates 19.80 and 19.78; rates of increase 6.03 and 6.02.

From the census of 1885 to that of 1890 the increase in the population of the State was from 1,942,141 to 2,238,943, or 296,802, a gain in five years of fifteen per cent. in round numbers. It is fair to say, therefore, that the population of 1891[2] is at least 2.6 per cent. greater than that of 1890, and that the editor of the registration report for the year 1891, in using the population of 1890 as a basis for calculating the rates for 1891, not only departs from the established and universal practice of statisticians but commits an error *more than twenty times as great* as that arising from the method which he, on the very preceding page, in his inexperience, so cavalierly condemns (28.15 for 27.42; 9.68 for 9.43; 19.36 for 18.86; 20.18 for 19.66; 7.97 for 7.76, if we take the death-rate, 20.18, as given on page 115, to be what the editor means and not 20.13 as stated on page 122).

This error vitiates statistics on pages 118, 122 and 132 and makes the deductions from them misleading. For instance, "greater," page 118, line 9, should be "less"; the conclusions in the second and third paragraphs of page 122 are incorrect; "the same as" page 128, line 6, should be "less than"; and in the same paragraph the order of the counties is wrong, as it is in the second and seventh paragraphs of page 129; 12, 3, line 1, and 19.3, line 30, page 129, are too high; 17, page 132, line 16, should be 15.63, and 8.3, line 14 of the same page, should be 7.58; on page 137, first paragraph, the numbers 11,973 and 37,316 are too small.

There are also other errors in the report where the "originality of treatment" is of another kind, to which we will call attention in order to increase what the Secretary of State calls the "practical utility" of the report.

"Lower than all of Europe," page 116, line 10, should be "lower than that of all Europe"; the fifth paragraph of page 116 is very bad English and its meaning is ambiguous; the last paragraph on page 117 is obscure, and, whether the list of counties is for 1891 or for ten years, the order is wrong; page 118, line 9, for "greater than that of the average" read "greater than the average"; page 119, lines 3 and 6, 1,827 and 2,841 and 1,940 should be 1,829 and 2,778 and 1,890; page 120, line 4, for 229 read 228; in the table on page 122 the death-rates of only twelve counties out of fourteen have the decimal point in the wrong place; "greater," page 123, line 32, should be "less" (16.16+ as compared with 16.17); page 123, line 36, for 73.31 and 26 69 read 73.32 and 26.68; page 123, line 37, for "ratio of the native born," read "ratio of the deaths of the native born"; page 124, line 2, for "Hampshire," read "Middlesex and Hampden"; if kidney disease on page 126 has the same meaning as is usual, and as diseases of the kidneys on page 131, the order of mortality in the third paragraph of page 126 is wrong; the third paragraph on page 127 is badly mixed, whether from the point of view of "literary skill" or "practical utility," and it is with some difficulty that we discover that the source of errors lies in the fact that death-rates per 10,000 of population (in 1889, 1890 and 1891) are confounded with percentages of total mortality (1881, 1882 and 1886); page 128, line 23, in "total mortality from all causes," strike out either "total" or "from all causes"; on page 128, line 30, for 1891 read 1890; page 130, line 11, after "less than" add "that of"; it would be more exact, and therefore of more "practical utility," to say "deaths attributed to influenza" than "deaths from influenza," page 130, third paragraph; page 131, line 3 from the bottom, .007 is too original a way of expressing the difference between 3.4 and 2.7; page 131, last paragraph, old age is said to be neither a disease nor a cause of death, and in the next paragraph it is three times referred to as a cause; page 132, second paragraph, for 3,787 and 208 read 3,592 and 175; page 136, sixth paragraph, for "highest per cent. . . . except in 1887" read "except in 1885 (3.52), 1886 (3.41) and 1887"; page 137, line 4, for 4.2 read 4.5; on page 137, second paragraph, the 143 deaths investigated by the Medical Examiners and reported to be directly or indirectly in consequence of the abuse of alcoholic stimulants, as compared with 254 in 1890, suggest the question whether the number would not be much larger if the original returns were scrutinized with the same minuteness as by the method for the previous three reports, and as shown in the forty-seventh report, pp. 399 to 405.

We quote another specimen of "literary skill," as follows, because, also, we take decided exception to the conclusion reached by the editor:

> "It has been the custom for a few years past to publish a table showing an itemized account of the expenses of the medical examinations in the different counties. This table is omitted this year for the reasons that, first, financial statements properly belong to another department, and it is singular to publish one set of items alone; and, second, because there is such a lack of uniformity of returns, many items being omitted and others lumped together in a way impossible to separate into their proper classes, that the preparation of an accurate table is an impossibility."

When we took up the report, knowing the splendid possibilities for a half-century review of our vital statistics, in addition to the usual opportunity afforded each year by such a mass of material collected at such great cost of time and labor, it was with intense disappointment that we saw so much of importance left out, thrown away as it were, and so little, comparatively, of value recorded in the editorial summary. It seemed such a wretched waste. As we put the report down, we refer to the editor's second paragraph, page 113, both as another illustration of the secretary's idea of "literary skill" and perhaps, by reading between the lines, as an explanation why we are called upon to record our thankfulness that, under the circumstances, the report is so short. The sentence is as follows:

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[2] Estimated to be 2,298, 303.

> "It is not intended, however, in this report to present all the elaborate tables heretofore presented, where data are arrived at by an unending series of sums in long division and by permutations and combinations of figures, which data are, if to any one, of value only to the statistician who might well himself devote the time and labor necessary to ascertaining the facts desired."

The editing of these reports naturally belongs in the office of the State Board of Health. If the Secretary of State has any other than personal or political reasons for his extraordinary course this year, an explanation from him is now in order. The fact that he is not without a sense of humor is shown by his claiming for his report a "fresh interest,"— altogether too fresh.

There are sufficient reasons why the collection, tabulation and supervision of the original returns of births, marriages and deaths should also be in the hands of the State Board of Health. But we have not space to consider them at present.

We do not need to further explain our reasons for departing this year from our usual custom of publishing an abstract of the Registration Report, except to say that it is with great regret that we are compelled to omit it. The volume itself speaks its own loudest condemnation.

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MEDICAL NOTES.

Immigration. — In the four months ending with October, 1891, the immigration into the United States was 198,151; in the same four months this year it was 139,315. The immigration in October, 1891, was 54,182, this year in the same month it was 16,428.

Symphysiotomy in Dublin. — The first operation of symphysiotomy in the United Kingdom was done on November 22d at the Rotunda Hospital in Dublin, by the Master, Dr. W. J. Smyly. Both the mother and child survived.

Upright and Sloping Writing. — Mayer, as a result of the study of forty schools in Bavaria with over 2,000 pupils, finds that with upright writing 55 per cent. of the children sat in a good position, whereas with sloping writing only five per cent. were found to do so. He finds that the better the position of the pupil the less the letters incline, and that if vertical writing is taught, children sit in a good position with far less trouble.

Cancer. — A Society has recently been formed at Paris called *La Ligue contre le Cancer*, the objects of which are the study of cancer, its history, pathology, and the best means for preventing its spread therapeutically and otherwise. The membership consists of *benefactors*, contributing pecuniarily to the work of the Society; *founders*, who subscribe three hundred francs each; *honorary members*, contributing original or other scientific material to the study of cancer; *members*, paying twenty francs yearly; *life-members*, paying two hundred francs in one sum. The Society will publish a quarterly bulletin. Its officers are as follows: Verneuil, Honorary President; Duplay, President; Reclus, Secretary; Ricard, Secretary of Surgical Section; Brault, Secretary of Medical Section; Cazin, Secretary of Pathological Section; G. Masson, Treasurer, 120 Boulevard St. Germain, Paris.

New Medical Periodicals.— *The Clinical Journal*, a weekly record of clinical medicine and surgery with their special branches, appeared in November. It is published in London, and is to be devoted entirely to short, practical, clinical lectures and notes of the teachers in the hospitals of the United Kingdom. *The Inquisitor*, "a monthly journal of science in plain language" appeared in December in Chicago. It is edited by Dr. W. W. Cook, and as its name implies, is to contain short, scientific papers easy to understand. In October appeared the first number of a medical quarterly to be known as *McCaskey's Clinical Studies*, which is to be compiled from the clinical notes of Prof. G. W. McCaskey of the Fort Wayne, Ind., College of Medicine. *La Abeja Médica*, a monthly review of medicine, written in Spanish, is published in Havana, beginning in October.

BOSTON.

Women and the Harvard Medical School.— The Faculty of the Harvard Medical School at their last meeting voted, by a majority of twelve to nine, not to ask the corporation of the University for authority to admit women to graduate courses if at any time or in particular cases it should wish to do so.

Medical Co-operation. — The Wells Memorial Institute, which ten years ago established a co-operative plan of buying coal, wood and other necessities, has now taken steps together with the People's Institute to found a somewhat similar arrangement for medical services for its members. The system is similar to that which is common in London but differs from a system started in Boston over a year ago, not being designed as a money-making scheme.

NEW YORK.

Anti-rabic Inoculation of Dogs and a Cow. — An interesting experiment is now being conducted by Dr. Gibier, of the Pasteur Institute. A short time since a setter, belonging to a wealthy gentleman who has a country-place in New Jersey, developed hydrophobia, and before the character of the disease was recognized had bitten fifteen other valuable dogs, setters and fox-hounds, in the same kennels, and also a cow. The dog was then shot and its body brought to Dr. Gibier, who inoculated two rats with virus obtained from it, with the result of producing fatal rabies in them. At the request of the owner, the cow and fifteen dogs were then treated with Pasteur inoculations, and the result of the experiment is likely to attract considerable attention.

A Heavy Bridal Couple. — There was recently married at one of the dime museums a couple whose united weight is said to be 1,179 pounds; the bridegroom weighing 607 pounds and the fair bride 572 pounds.

Miscellany.

REPORT OF A COMMITTEE OF THE SUFFOLK DISTRICT MEDICAL SOCIETY ON SANITARY LEGISLATION.

Presented November 16, 1892.

The Committee appointed to consider the question of the desirability of further sanitary legislation have consulted with those who have had the largest experience in the workings of our present very defective National, State, and Local systems, and with those also who have especially studied the methods of sanitation in use in foreign countries, and beg leave to present the following report:

After the very convincing exposition of the shortcomings in the methods now in operation amongst us, made at the meeting of this Section on September 21st, and published in the *Boston Medical and Surgical Journal* of September 29th, it should be needless to offer any further evidence of the necessity of great reforms in them; we present, therefore, four propositions for your consideration:

(1) It is advisable that a central National Board of Health with efficient authority should be established, with all necessary control over immigration.

(2) It is highly important that a system of National Quarantine be created, which shall have absolute control over all ports and other entrances to the United States.

We recommend that both these propositions (1 and 2), if adopted, be transmitted to the Massachusetts Medical Society for approval, and subsequently forwarded to the appropriate authorities at Washington.

(3) Your Committee take pleasure in recording their opinion that the State Board of Health, as at present constituted, is in a satisfactory condition in nearly all respects; in its composition, mode of appointment, and tenure of office no change seems to be called for. It is important, however, that the scope of its authority should be enlarged by having placed under its control the registration of vital statistics. A law should also be passed that every case of contagious disease dangerous to public health throughout the State shall be reported to it through the local boards without delay.

(4) In place of the present system of local or town boards of health your Committee recommended that the State be divided into sanitary districts of appropriate size, over each of which shall be placed a single health-officer, who shall be appointed by the Governor of the Commonwealth, and who shall hold office until removed for cause. He shall give his whole time to the duties of his office.

For the accomplishment of these proposed changes in the State and local boards (propositions 3 and 4), we recommend that a Committee be appointed by the Chairman of this Section, who shall take all necessary steps to present them to the governor and legislative bodies of the Commonwealth in proper form, and to secure their enactment.

James C. White, F. C. Shattuck,
D. W. Cheever, H. C. Ernst.
F. W. Draper,

INTRA-THORACIC AUSCULTATION.

Dr. B. W. Richardson, in a paper before the Medical Society of London, describes a case in which there was a question of stricture of the œsophagus. Failing to obtain any evidence of its presence by the usual methods of auscultation, he passed a stomach-tube into the stomach. It then occurred to him to put his stethoscope on to the external end of the tube. By this method he could hear soft friction of the tube against the walls of the œsophagus, and was made quite sure that the friction was uniform throughout and that there was no special constriction or induration in any part. He took this opportunity to listen to any other sounds which might be heard between the stomach and the mouth as the tube was gradually withdrawn. The cardiac sounds were not precisely the same as the sounds heard through the thoracic wall; but were duller in character, at the same time they were loud and were singularly distinct. By moving the tube gently up and down, he could get the second sound separately from the first, and *vice versa*. It was impossible to hear the vesicular murmur even on a deep inspiration, so distinct as the murmur heard from the chest wall outside.[1]

The author believes that the method promises to be useful in the diagnosis for which he first applied it. The advantage will be that stricture may be detected in its very earliest stage, the stage in which there is the best chance of doing good by dilatation. It may prove also an aid to diagnosis in diseased conditions of the stomach itself. The motions of that organ apparently produce sounds that may admit of interpretation. Through the stomach it may also be possible to diagnose physically and more correctly the nature of some pulsating abdominal tumors. In acute collapse, as after apparent death from chloroform, it may be possible to make a good diagnosis in the same manner; and through the œsophageal tube, after disconnecting the stethoscope, injections could be made into the stomach.

PATHOLOGY OF PUERPERAL ECLAMPSIA.

At the recent Gynæcological Congress at Brussels, Chambrelent introduced the results of some new experiments upon the subject of the pathology of puerperal convulsions.[2] He said that the malady was generally considered as the outcome of auto-infection. Nevertheless, recent observations, especially those of Bouchard in France, had shown that in this affection the urine was often concentrated, and contained only a small proportion of toxic elements. Being interested in the latter fact, the author undertook some control experiments with the view of determining whether, for example, the blood of women suffering from puerperal eclampsia showed any increase of toxic elements. From six patients suffering from this disease blood was taken, and with it twenty different experiments were made. In all the experiments the toxicity of the blood serum from the patients in question was much greater than that which Rummo has proved to be the case where the blood has been obtained from healthy persons. According to Rummo ten cubic centimetres of healthy serum is sufficient to cause the death of a large rabbit, whereas in the experiments performed by the author from three to six cubic centimetres were all that was necessary to bring about the same result. The experiments further pointed out that the toxicity of the serum in these puerperal cases varied inversely with the amount of toxic elements in the urine. When, moreover, the degree of toxicity of the serum was high the case was always certain to assume a very grave aspect, as far as prognosis was concerned.

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[1] Lancet, November 5th.

[2] Medical Press, Nov. 9.

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OBITUARY.—FITCH EDWARD OLIVER, M.D.

The death of Dr. F. E. Oliver, which took place on the 8th inst., from an apoplectic stroke, removes one of the older generation of physicians who have done so much to make the medical profession what it is in Boston to-day. He was the son of Dr. Daniel Oliver, also a learned physician, and was born at Cambridge in 1819. He graduated at Dartmouth in 1839, at the Harvard Medical School in 1843, and, after completing his studies in Europe, he began to practise in Boston nearly fifty years ago. During that long period he has been constantly at work. He was one of the first physicians to the Boston City Hospital and held that position until 1875, after which he became a member of the Consulting Board. For many years he was also one of the physicians to the House of the Good Samaritan, in which he took a deep interest.

Dr. Oliver had a wide knowledge of the history and literature of his profession. He was a scholarly physician. In 1848, with the late Dr. W. W. Morland, he published a translation of "Chomel's General Pathology." From 1860 to 1863 he was editor of this Journal. Among his many contributions to the medical literature of the period may be mentioned, as of especial value, a report to the State Board of Health, in 1872, on the "Use and Abuse of Opium" in Massachusetts. He was also for several years instructor in materia medica and therapeutics in the Harvard Medical School; A councillor of the Massachusetts Medical Society; member of the Boston Society for Medical Improvement, and secretary of that Society from 1856 to 1859; corresponding member of the Glasgow Medical and Surgical Society.

As a medical adviser, Dr. Oliver was eminently trustworthy. He secured the respect and affection, as well as the entire confidence of his patients.

His talents were versatile. To the wide general reading and the charm of conversation which marked a refined and philosophical mind, he added the knowledge and accomplishments of a musical scholar of a high order. He was a member of the Massachusetts Historical Society, and took especial interest in the publication of works relating to the early history of New England, in which members of his family had been conspicuous figures. Among these works were Hubbard's "History of New England," which Dr. Oliver was instrumental in completing; and the Diaries of Governor Hutchinson, Judge Lynde and William Pynchon.

Personally Dr. Oliver was modest and retiring, possessed of an old-time courtesy and chivalry which endeared him to a large circle of friends who mourn his loss.

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Correspondence.

GUAIACOL IN THE TREATMENT OF TUBERCULOSIS.

New York, December 15, 1892.

Mr. Editor: — Permit me to find fault with your proofreader. On page 586 I am said to give cod liver oil in cold water instead of in cold weather, and also to give four times 28 (or 112) drops of guaiacol while I am very anxious to impress upon the reader that four times seven (or 28) and four times three (or 12) is all I have ever administered.

Very sincerely yours, A. Jacobi.

[In justice to our proof-reader our reviewer confesses that as he has been in the habit of giving guaiacol in larger doses, he did not notice that 28 drops was intended by Dr. Jacobi for the total daily dosage. — Ed.]

METEOROLOGICAL RECORD,

For the week ending December 10, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S... 4	29.68	38	42	35	73	61	67	S.W.	W.	10	12	O.	O.	
M.. 5	30.05	32	37	26	64	57	60	N.W.	N.W.	19	13	F.	C.	
T.. 6	30.05	39	39	21	73	82	78	W.	S.	6	12	C.	N.	0.04
W. 7	30.01	38	44	32	75	66	70	N.W.	N.E.	9	4	C.	C.	0.08
T.. 8	29.80	41	48	34	84	100	92	E.	W.	15	6	O.	R.	0.30
F.. 9	29.96	43	48	38	84	60	72	W.	N.W.	10	8	F.	C.	0.31
S.. 10	30.12	36	40	33	73	91	82	N.W.	N.W.	2	6	O.	C.	0.02
☞	29.95	37	43	31	75	74	75							0.11

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 10, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York . .	1,827,396	694	237	12.88	21.14	.14	5.88	2.24
Chicago . . .	1,250,000	—	—	—	—	—	—	—
Philadelphia .	1,092,168	416	—	13.20	17.04	1.20	8.44	2.64
Brooklyn . .	955,333	361	134	12.32	25.48	.84	5.60	2.24
St. Louis . . .	477,873	—	—	—	—	—	—	—
Boston . . .	469,645	195	60	15.81	14.79	2.55	6.12	3.57
Baltimore . .	461,139	—	—	—	—	—	—	—
Cincinnati . .	305,000	—	—	—	—	—	—	—
Cleveland . .	281,353	68	23	17.64	10.29	—	4.41	5.88
Pittsburg . .	255,000	—	—	—	—	—	—	—
Milwaukee . .	234,440	74	40	24.30	13.50	—	21.60	—
Washington .	230,360	114	32	5.28	14.96	.88	2.64	—
Nashville . .	87,754	28	7	14.28	10.71	7.14	—	—
Charleston . .	56,048	37	8	2.70	5.40	—	—	—
Portland . . .	40,000	9	2	22.22	11.11	—	—	—
Worcester . .	92,313	19	6	15.78	5.26	—	5.26	—
Lowell . . .	82,455	33	11	—	21.21	—	—	—
Fall River . .	82,128	33	13	27.27	6.06	3.03	12.12	3.03
Cambridge . .	74,644	22	5	22.75	9.10	9.10	9.10	4.55
Lynn	60,809	12	4	16.66	8.33	—	8.32	—
Springfield . .	47,052	17	3	11.76	5.88	5.88	5.88	—
Lawrence . .	45,910	—	—	—	—	—	—	—
New Bedford .	44,947	10	3	10.00	30.00	—	—	10.00
Holyoke . . .	40,099	—	—	—	—	—	—	—
Brockton . .	32,783	4	0	—	—	—	—	—
Salem	31,495	12	4	8.33	—	—	—	—
Haverhill . .	30,065	8	1	—	12.50	—	—	—
Chelsea . . .	29,479	10	5	10.00	10.00	10.00	—	—
Malden . . .	27,252	7	0	—	28.56	—	—	—
Newton . . .	26,498	—	—	—	—	—	—	—
Taunton . . .	26,464	6	0	—	16 66	—	—	—
Gloucester . .	26,008	5	2	—	—	—	—	—
Fitchburg . .	25,444	9	8	11.11	22.22	—	—	—
Waltham . .	20,942	4	1	25.00	—	—	—	25.00
Quincy . . .	18,669	2	0	—	—	—	—	—
Pittsfield . .	18,294	3	1	33.33	33.33	—	33.33	—
Northampton .	15,084	8	2	37.50	—	—	..	37.50
Everett . . .	14,745	2	1	100.0	—	—	—	—
Newburyport .	14,031	3	0	—	—	—	—	—
Amesbury . .	13,561	3	2	—	33.33	—	—	—

Deaths reported 2,147: under five years of age 622; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 298, acute lung diseases 412, consumption 272, diphtheria and croup 137, scarlet fever 53, typhoid fever 24, whooping-cough 23, diarrhœal diseases 21, measles 20, erysipelas 9, cerebro-spinal meningitis 7, malarial fever, typhus fever and small-pox each 1.

From whooping-cough Brooklyn 8, New York 7, Philadelphia, Boston and Milwaukee 2 each, Charleston and Portland 1 each. From diarrhœal diseases New York 4, Philadelphia, Brooklyn and Fall River 3 each, Cleveland and Washington 2 each, Boston, Nashville, Portland and Fitchburg 1 each. From measles New York 15, Philadelphia and Brooklyn 2 each, Cleveland 1. From erysipelas New York and Boston 3 each, Philadelphia, Salem and Everett 1 each. From cerebro-spinal meningitis New York and Worcester 2 each, Nashville, Lynn and Everett 1 each. From smal-pox New York 1. From typhus fever New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending November 26th, the death-rate was 18.9. Deaths reported 3,694: acute diseases of the respiratory organs (London) 353, measles 142, scarlet fever 73, whooping-cough 65, diphtheria 61, diarrhœa 40, fever 39.

The death-rates ranged from 13.6 in Derby to 31.6 in Salford; Birmingham 19.6, Bradford 17.8, Bristol 15.6, Hull 16.0, Leeds 18.2, Leicester 19.7, Liverpool 20.5, London 17.7, Manchester 22.9, Newcastle-on-Tyne 20.1, Plymouth 23.1, Sheffield 18.2, Sunderland 19.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 10, 1892, TO DECEMBER 16, 1892.

Lieut.-Col. William D. Wolverton, deputy surgeon-general, U. S. A., is relieved from duty at Fort Schuyler, New York, and will report in person to the commanding officer, Watervliet Arsenal, West Troy, New York, for duty at that Arsenal.

Upon the recommendation of the medical director, Department of California, **First-Lieut. Charles Willcox**, assistant surgeon, will report to the commanding officer, Presidio of San Francisco, for temporary duty at that post, until the departure from Angel Island, Cal., of **Major William H. Gardner**, surgeon, when he will proceed to Angel Island, and report to the commanding officer of that post for temporary duty.

Leave of absence for two weeks on surgeon's certificate of disability, with permission to apply for an extension of two weeks, is hereby granted to **Captain Adrian S. Polhemus**, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 17, 1892.

E. R. Stitt, passed assistant surgeon, from Receiving-ship "Franklin" and to Naval Hospital, Norfolk, Va.

J. F. Keeny, passed assistant surgeon, from Naval Hospital, New York, and to the U. S. S. "Ranger."

T. A. Berryhill, passed assistant surgeon, from U. S. S. "Ranger" and to the Fish Com. Str. "Albatross."

F. W. F. Wieber, passed assistant surgeon, from the Fish Com. Str. "Albatross" and granted month's leave.

G. T. Smith, assistant surgeon, from C. S. S. "Hassler," proceed home and wait orders.

F. G. Brathwaite, assistant surgeon, from the U. S. S. "Fern" and to the U. S. S. "Chicago."

J. S. Hope, assistant surgeon, from the Receiving-ship "Franklin" and to the U. S. S. "Fern."

J. M. Whitfield, assistant surgeon, from the U. S. S. "Chicago" and granted one month's leave.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE EIGHT WEEKS ENDING DECEMBER 10, 1892.

Purviance, George, surgeon. Detailed as chairman of board to consider changes in uniform. December 6, 1892.

Hutton, W. H. H., surgeon. Relieved from duty at Cape Charles Quarantine, to rejoin station. November 29, 1892.

Hamilton, John B., surgeon. Granted leave of absence for six days. November 18, 1892.

Sawtelle, H. W., surgeon. Granted leave of absence for seven days. November 9, 1892.

Austin, H. W., surgeon. Detailed as member of board to consider changes in uniform. December 6, 1892.

Stoner, G. W., surgeon. Granted leave of absence for fourteen days. December 9, 1892.

Godfrey, John, surgeon. To proceed to the City of Mexico on special duty. November 22, 1892.

Irwin, Fairfax surgeon. To proceed to Europe on special duty. November 22, 1892.

Mead, F. W., surgeon. Detailed as recorder of board to consider changes in uniform. December 6, 1892.

Carter, H. R., surgeon. Relieved from duty at Cape Charles Quarantine to rejoin station. October 20, 1892. Relieved from duty at Cincinnati, O.; assigned to duty at Norfolk, Va. October 26, 1892.

Banks, C. E., passed assistant surgeon. Granted leave of absence for fifteen days. October 24, 1892.

Glennan, A. H., passed assistant surgeon. Granted leave of absence for thirty days. October 26, 1892.

Bratton, W. D., passed assistant surgeon. Granted leave of absence for thirty days. November 10, 1892.

Cobb, J. O., passed assistant surgeon. Granted leave of absence for sixteen days. December 7, 1892.

Guiteras, G. M., passed assistant surgeon. Relieved from duty at Gulf Quarantine, assigned to temporary duty at Baltimore, Md. December 1, 1892.

Geddings, H. D., passed assistant surgeon. To report in Washington, D. C., for special temporary duty. November 30, 1892.

Hussey, S. H., assistant surgeon. To proceed to South Atlantic Quarantine for temporary duty. October 26, 1892.

Perry, J. C., assistant surgeon. When relieved at Norfolk, Va., to rejoin station at Mobile, Ala. October 26, 1892.

Young, G. B., assistant surgeon. Granted leave of absence for twenty-one days. October 27, 1892.

Stimpson, W. G., assistant surgeon. To proceed to Baltimore, Md., for temporary duty. December 5, 1892.

Gardner, C. H., assistant surgeon. Ordered to Portland, Or., for temporary duty. October 25, 1892.

Nydegger, J. A., assistant surgeon. To proceed to Gulf Quarantine for temporary duty. December 1, 1892.

Strayer, Edgar, assistant surgeon. Detailed as inspector of immigrants, port of Boston, Mass. November 22, 1892.

SOCIETY NOTICE.

Suffolk District Medical Society. — Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, on Wednesday evening, December 28, 1892, at eight o'clock.

Subject: "Extra-uterine Pregnancy."

Dr. A. T. Cabot will read paper. Dr. F. Berlin and Dr. G. Wolcott will report cases. Dr. W. L. Burrage will speak of the electrical treatment of the condition. Discussion by Drs. E. W. Cushing, G. Haven, M. H. Richardson and others.

Dr. R. A. Kingman will show new instrument.

Exhibition of specimens.

F. H. Davenport, M.D., *Chairman.*
Geo. H. Washburn, M.D., *Secretary.*

MIDDLETON-GOLDSMITH LECTURE.

Dr. William P. Northrup has been invited by the trustees to deliver the above lecture before the New York Pathological Society in April next; subject to be announced later.

RECENT DEATHS.

Sir William Owen, M.D., F.R.C.S., F.R.S., LL.D., etc., died December 18th, aged eighty-eight years. He began life as a general practitioner in London in 1826, but his subsequent appointment, on Mr. Abernethy's recommendation, to the post of assistant curator of the Hunterian Museum, led him to devote his attention exclusively to the study of comparative anatomy. In 1834 he was appointed to the chair of Comparative Anatomy at St. Bartholomew's Hospital. In 1836 he succeeded Sir Charles Bell as Professor of Anatomy and Physiology in the College of Surgeons, being appointed by the college in that year as the first Hunterian professor. Professor Owen's connection with the College of Surgeons ceased in 1856, on his being appointed superintendent of the natural history departments (zoölogy, geology, mineralogy) in the British Museum. For some years he was lecturer on palæontology in the Government School of Mines, and Fullerian professor of physiology in the Royal Institution of Great Britian, but was compelled on account of failing health to resign these offices. Sir William Owen's contributions to the knowledge of natural history were of the first importance, and very numerous. He was for many years the leader in Great Britian and perhaps in the world in the study of comparative anatomy. He was a fellow or associate of most of the learned societies or scientific academies at home and abroad; he received the cross of the Legion of Honor, was a chevalier of the Order of Merit of Prussia and one of the eight foreign associates of the French Institute. He was created a companion of the Bath in 1873, and shortly afterwards made a K. C. B.

Dr. Alfredo Corradi, Professor of Therapeutics in the University of Pavia, died November 28th, aged fifty-nine years.

Dr. Luigi Amabile, Honorary Professor in the University of Naples, died November 24th.

BOOKS AND PAMPHLETS RECEIVED.

Tenth Annual Announcement of the Medical University of Ohio, Session of 1892–93.

A New Consideration of Hereditary Chorea. By R. M. Phelps, M.D., Rochester, Minn. Reprint. 1892.

Original Articles.

TREATMENT OF COMPLETE PROLAPSE OF THE UTERUS.

BY J. C. IRISH, M.D., LOWELL, MASS.

Next to cancer, or myoma, of the uterus, procidentia is the gravest affection with which we have to deal. The only direct danger to life attending this disease is the somewhat remote one, that the uterus by its constant exposure to irritation might become the seat of malignancy oftener than one in normal position. Whether such is the fact or not I do not know; still it would not be unreasonable to look for such a result in view of what takes place in other organs and tissues when exposed to long continued irritation. Yet it is in other respects that the gravity of the disease exists. It is in the great incapacity of these patients for all active pursuits, and in their constant suffering, which the lapse of time increases steadily. When left to themselves their condition is entirely hopeless.

I call attention to these very trite facts, because they have an important bearing on the means of cure more or less radical that it would be justifiable for us to employ. Unlike other affections of the uterus, this one does not seem to have received its fair share of attention. All palliative means of treatment — as pessaries, tampons, and astringent applications — may be dismissed with very few words. They never cure, and only rarely relieve the patient. They are troublesome to apply, and require constant watching and readjustment; while on the other hand they usually fail in the matter of temporary relief. We are therefore forced to have recourse to more active surgical treatment, if we hope to cure or materially benefit the sufferer from complete prolapse.

Among the operations that have been suggested and done for the relief of these cases, are the following: (1) Anterior and Posterior Colporrhaphy, (2) Ventral Fixation, (3) Abdominal Hysterectomy, (4) Vaginal Hysterectomy.

Some of these methods of operating have been employed, up to the present moment, so small a number of times, that it is difficult to estimate precisely their comparative value, or select the particular cases to which one or the other of them would be especially applicable.

ANTERIOR AND POSTERIOR COLPORRHAPHY.

Until recently, the operation for prolapse that I have done has been anterior and posterior colporrhaphy or speaking more accurately, an anterior colporrhaphy with perineorrhaphy in most cases. Often the pelvic floor has been sadly in need of repair; but in long standing cases there has seemed to be a great lack of material for reconstruction. In some cases, too, an elongated cervix has required amputation.

The combination of all these surgical procedures makes about as tedious an operation as could well be imagined. The results, when compared with mechanical modes of treatment previously in vogue, are brilliant; but when considered by themselves they are far from satisfactory.

In the absence of any record of cases in which I have done colporrhaphy, anterior and posterior, I am forced to give in a general way the results of my experience. Still my number of colporrhaphies is small enough to permit me to do so with approximate accuracy, and large enough for me to estimate very fairly the value of the operation in my hands.

About one-half the patients on whom I have operated have been practically cured; that is, the uterus has since remained high enough in the pelvis to give no further inconvenience. Strangely enough, among the successful cases, were two patients more than sixty-five years of age, and one seventy-three. In each case there had been complete prolapse for many years. With each of them there was present considerable atrophy of structures of the pelvic floor, so that the posterior operation was a colporrhaphy rather than a perineorrhaphy.

The operation, with me, has been much more successful in spare patients than in stout ones. Probably among the latter there is greater intra-abdominal pressure. In several cases complete prolapse has been changed to one of the first or second degree; that is, the operation has been a partial failure. Still these patients have been able to wear pessaries, which have prevented a return of the procidentia, and afforded them much relief. The operation was a complete failure in three cases; procidentia, in as aggravated a form as before, recurred in all of them in less than a year.

VENTRAL FIXATION.

Ventral fixation, up to the present time, has been done mainly for retro-flexions and retro-versions, with degrees of prolapse less pronounced than that under consideration. Yet there are several cases in which the operation was done for complete prolapse with entirely satisfactory results.

The value of ventral fixation in versions with descent of the uterus has been well established by many successful cases. There would seem to be no reason why the operation should not be as useful and successful in that much graver lesion of procidentia as in the milder forms of prolapse. Since ventral fixation is proposed as one of the modes of treating complete prolapse, a brief reference to several of the methods that have been employed in attaching the uterus to the abdominal wall may be permitted.

Leopold scarifies the wall of the uterus and attaches it to the abdominal wall by three sutures through the fundus brought to the outside. Ligatures removed in twelve days.

Krug places patient in the Trendelenburg posture, and carries the uterus with a sound to the abdominal wall. He makes a small incision down to the peritoneum, but not through it, over the fundus. A modified Peaslee needle is passed through the abdominal wall one-quarter of an inch from incision; the anterior surface of the uterus is scarified with the edge of the needle, then a ligature is carried through the fundus and out on the other side. Two such ligatures are used which close the abdominal wound.

Dr. Marcy fixes the uterus with a stitch through each round ligament. Tendon suture buried.

Dr. Currier of New York reports a case in which he used silver-wire sutures, carried through fundus and brought out through the abdominal wall one inch from incision on each side. Sutures removed in two weeks.

Bernay removes an ovary, and fixes pedicle in abdominal wound.

Pozzi stitches fundus to abdominal wall with continuous suture but does not bring it outside.

ABDOMINAL HYSTERECTOMY.

Dr. Polk of New York reports four cases of procidentia treated by abdominal hysterectomy — all successful. In these cases Dr. Polk removed the entire uterus. It is claimed that this operation leaves the vagina and bladder in better condition to resist any intra-abdominal pressure than would be the case in hysterectomy through the vagina. However, it would seem to me that this possible advantage would hardly be a compensation for the dangers and difficulties of the operation. This operation, I think, will always be limited to a small class of cases of complete prolapse, for the reason that in many of them it would be very difficult to bring the uterus up into the abdominal wound.

VAGINAL HYSTERECTOMY.

In two cases in which I had previously made Hegar's operation, anterior and posterior colporrhaphy, and in which the prolapse had returned, I made recently vaginal hysterectomy:

CASE I. September 26, 1892, Mrs. B., Dracut, age forty, two children. In December, 1889, Hegar's operation was done, together with an amputation of the elongated cervix. Prolapse returned in less than one year after the operation. September 26th, I removed the uterus and ovaries by the vagina in the same manner that I would make a vaginal extirpation for carcinoma. The two uterine arteries were ligated, and forceps applied to the broad ligaments above.

The operation was a very easy one to do, except in one particular: that was the separation of the bladder from the uterus. Although the cervix had been amputated, it had again become elongated, and had brought the inferior border of the bladder down on a level with the anterior lip. The attachment of the bladder to the uterus was very firm and extensive, and required a most patient dissection to avoid wounding the bladder.

A rapid recovery followed the operation. Examination November 26th showed the bladder pressing somewhat into the vagina, but still no protrusion, and the patient does not in any way suffer the least inconvenience.

CASE II. Mrs. S., Lowell, age forty-eight, five children. A recurrence of procidentia followed Hegar's operation. November 1st, vaginal hysterectomy was done in the same way as in the preceding case. In this instance, too, as before, separation of the uterus and bladder was the difficult part of the operation. The tissues of each were so adherent and blended, that a portion of the uterine structure was left attached to the bladder wall.

I refer to this matter particularly, because I have never encountered any such close attachment of the bladder when the uterus has been removed for cancer. The patient, however, has rapidly recovered, and as is the case after an ordinary vaginal hysterectomy, there is no apparent pressure of the abdominal contents in the vagina.

Krug reports a case of vaginal hysterectomy for prolapse, November, 1891. Result satisfactory.

There is much to be said in favor of vaginal hysterectomy for procidentia. When compared with the three preceding methods of operating, that have been more generally if not exclusively recommended, it has some important advantages:

(1) It is the easiest operation to perform.

(2) It always cures; while Hegar's operation frequently, and ventral fixation, occasionally, fail to do so.

(3) It is attended with very small danger to life — less than is the case in abdominal hysterectomy or in ventral fixation.

(4) It is probable that the after condition of the patient will be more certainly satisfactory than when one of the other operations, except abdominal hysterectomy, is selected.

MALARIA IN CAMBRIDGE AND VICINITY.[1]

BY E. H. STEVENS, M.D., OF CAMBRIDGE.

It is a well-known fact that malaria has been spreading out over eastern Massachusetts during the last eight or ten years. For sixteen years previous to 1887 malarial fever was occasionally seen in Cambridge, principally about Fresh Pond. There were cases reported, I think, for fifteen or sixteen years previous to 1887 in the region of Fresh Pond — a very few isolated cases. In 1887 it was a very dry season, and the city of Cambridge improved the opportunity of deepening Fresh Pond over a surface something like sixteen acres, which was known as Cambridge Nook. This was exposed during the summer. They deepened the pond from two to five feet. This was in the early spring of 1887. During the summer of this year cases began to occur about the pond on the east side. The cases reported previous to 1887 were in the region of Cushing Street, on the west side of the pond. There were quite a number of inhabitants living along the border of the Fitchburg Railroad near the pond, and almost every family during that summer had malarial fever. As the season advanced, the disease spread out along Alewife Brook, and appeared at the foot of Spruce Street, which runs down to the marsh, where a large sewer opens. As the inhabitants in this locality began to be affected with malarial fever, the disease appeared among the Canadian Frenchmen working in the various brick-yards, which are numerous in the vicinity of Alewife Brook and the marshes. The disease became so prevalent in several of the yards that it crippled their force of workmen so much that it became a serious matter to the companies. I think, during the season of 1887, the cases I saw or heard of were all confined to the borders of Fresh Pond and along the borders of Alewive Brook, and in Belmont in the brick-yards recently opened. There was a new brick-yard started; and the men were so seriously affected that 40 out of about 240 were obliged to be sent home to Canada, having the chills. From that time the disease has spread out over Cambridge, until now you find it in all parts of the city. I think the larger number of cases are seen still in that part of Cambridge known as North Cambridge, where there are the large marshes starting at Fresh Pond and running along the borders of Belmont and Arlington. The larger number of cases occur in this vicinity, and the most virulent cases seem to be in that locality. It was six years ago that the disease started. The number of acute cases that are seen now in that vicinity are very much less than three or four years ago, as it seems to me, from the fact that the people who live there have become saturated — I do not know how to explain it in any other way. A very large number of the people show the effect of living in a malarial region. They are sallow and anæmic and have a cachectic look. In Arlington, bordering on Alewife Brook, there is a little settlement known as Hendersonville, where the disease has been very prevalent; and this season particularly the number of cases have been very large.

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, November 16, 1892.

The Bay State Brick Company, the largest one in Cambridge, employs some 350 men, most of them living in their boarding-house, which is a filthy place. I have treated 51 cases in this boarding-house the past season; and that does not represent nearly all the cases, because many of the men were slightly sick and I did not see them, but the 51 cases were people sick enough to be sent to the doctor. Quite a large number of these men live outside of the boarding-house; these I do not see. In Belmont I have seen quite a large number of cases during the past four or five years, particularly in the last three years. In Arlington it seems to be spreading from the borders of the brook to the centre of the town. I have heard of quite a number of cases during the last year or two. One of the most interesting things observed was the breaking out of these cases along old water-courses and in sections originally marshy that have been filled half-way up North Avenue on Mellen and Shepard Streets and in other streets in that vicinity. I have made inquiries of the physicians in Cambridge; and they tell me that the largest number of cases seen by them have been in that vicinity, and there were originally old water-courses that ran through the section. Another interesting thing is the breaking out of malarial fever on College Hill, which you know is a very high hill. The professors live on what is known as Professors' Row, two-thirds up the hill, and five or six of the professors' families have had intermittent fever within the past year. In that location they have the Mystic Reservoir at the top of the hill, and below (perhaps three-fourths down the hill) quite a large pond, perhaps two and a half acres, known as Artificial Pond. Whether that has anything to do with the disease or not I do not know, but it is a fact that the disease seems to have been confined almost entirely to the families of the professors. The students have been exempt almost entirely. Their homes are on the extreme top of the hill.

As I have observed the disease, it seems to have attacked all ages. It is seen in very young and in very old people.

I should say that the quotidian form was the most common, the tertian next; and the other types are more or less frequent, particularly the irregular form where you get neuralgias and chills occurring at intervals with a good deal of cachexia and general disturbance. The past season I have seen a number of cases that seemed to have a remittent type. This is something that I have observed only this season. Another thing that we have observed at the Cambridge Hospital, where quite a large number of these cases have been treated, is the influence it seems to have in the cases of typhoid fever. It seems as though there was a typhomalaria, as Woodward calls it, an extreme rise and fall of temperature on certain days in well-marked cases of typhoid.

It seems that malarial fever, so far as I can learn, started in Cambridge before it started in the Newtons or Watertown or any of the towns in that vicinity. If I am correctly informed, it occurred in Framingham and Ashland and towns in close proximity to the Boston Water Works quite a number of years before we had it in Cambridge; but Cambridge seemed to have been affected before the Newtons and other towns in that section. It is so common with us now that it is getting to be a pretty serious question, and it seems as though the time was pretty near at hand when the city would have to do something to stop the digging of clay pits and commence to fill them up. From the fact that so large a proportion of the men who work in the clay pits are affected, it seems as though they were particularly liable to have the trouble there; and that seems to be borne out by the experience in East Providence, where there was a larger number of brick-yards and clay-pits eight or ten years ago. Somerville some ten years ago prohibited the digging of clay; so that the brick-yards, I think, have all been closed, and nearly all the pits have been filled. They were very small in comparison with the number and size of the pits in Cambridge. The Bay State Brick Company, I understand, still has about one hundred acres of land that they can dig over; and they have one large pit which has an area of about sixty-five acres that has been dug to a depth of eighteen to twenty-five feet. During the summer the water is pumped out, and it is kept dry. In the winter the water fills in to quite an extent. They have four or five pits that they have abandoned; and they are constantly filled with water, some to the depth of thirty feet. One of the pits is used for cutting ice which is supplied to some parts of Cambridge.

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MALARIA IN BOSTON AND VICINITY.[1]

BY CHARLES W. TOWNSEND, M.D.,
Physician to Out-patients at the Massachusetts General, Children's and Boston Lying-in Hospitals.

THAT malaria has within a few years made for itself a home in the valley of the Charles and other rivers in the vicinity of Boston is well known; and that it has even invaded Boston is forcing itself on the attention of physicians. Being impressed with the number of cases of malaria in my summer service in the out-patient department of the Massachusetts General Hospital, it seemed to me of interest to collect all the cases that have been recorded at the hospitals of Boston during the past ten months, classifying them according to locality, and to present them here to-night as an introduction to the discussion of the subject. As a further aid to the discussion, let me first sketch briefly the interesting history of intermittent fever in Massachusetts; and for this I am indebted to the valuable papers of Dr. Oliver Wendell Holmes,[2] Dr. J. F. Alleyne Adams,[3] Dr. Zabdiel B. Adams,[4] and Dr. C. H. Cook.[5]

The first settlers in Massachusetts found malaria here to contend with; but, towards the latter part of the seventeenth century it entirely disappeared, and was not seen till one hundred years later, about 1793. It then appeared for several years in Hopkinton, Mass., as well as in the western parts of Massachusetts and

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[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, November 16, 1892.

[2] Facts and Traditions respecting the existence of Indigenous Intermittent Fever in New England, Boylston Prize Essay, 1836.

[3] Intermittent Fever in Massachusetts, Massachusetts Board of Health, September, 1881. Malaria in New England. Public Health papers of American Public Health Association vol. vii. The New Lenox Malaria case, Boston Medical and Surgical Journal, December 28, 1882.

[4] An Epidemic of Malaria in Eastern Massachusetts, Massachusetts Medical Society Convention, 1889.

[5] A Study of Malarial Fever in Eastern Massachusetts. Massachusetts Medical Society Communications, 1886.

Connecticut. It is of great interest to note here that Hopkinton is situated at the head-waters of the Sudbury, Charles and Blackstone Rivers, along whose courses malaria is now prevalent. From 1799 to 1828 malaria disappeared, except in Sheffield in western Massachusetts, where it occurred from time to time. From 1828 to 1836 malaria for a third time became epidemic in the regions already noted, and again vanished. In 1850 we hear from it again near New Haven whence it spread along Long Island Sound, and "began, in 1864, a northern invasion following the rivers in the western half of Connecticut, reaching the Massachusetts line in 1877, and, in the next three years, penetrating almost to the northern border of that State."[6] Unfortunately the disease has remained endemic wherever it has obtained a foothold.

Eastern Massachusetts, however, continued practically exempt from malaria until 1885, when malaria became epidemic in South Framingham, and in the following year in Natick — towns in which there are marshy lands in connection with the Sudbury and Charles River systems. Since 1886 the disease has followed the whole course of the Charles River, and has also extended along the Sudbury and Blackstone Rivers,— the three rivers previously mentioned as having their sources in Hopkinton.

I have collected all the cases of malaria in the out- and in-patient departments of the Massachusetts General, Boston City and Children's Hospitals, and also at the Boston Dispensary, for the ten months beginning January 1, 1892, excluding from the lists those who may have acquired the disease elsewhere than in eastern Massachusetts. I wish to thank the various members of the staffs of the hospitals for the use of these cases, and particularly Dr. Henry Jackson, who, with considerable labor obtained for me the City Hospital and Dispensary cases.

	Cases.
Massachusetts General Hospital	94
Boston City Hospital	61
Boston Children's Hospital	9
Boston Dispensary	43
Total,	207

No cases of malaria occurred at the Boston Lying-in Hospital.

There were many more males than females affected, there being 138 of the former and 66 of the latter. Thirteen were children. The type of the disease was more often tertian although a comparatively large number of quotidian cases occurred.

Quotidian	43
Tertian	106
Irregular	6
Not given	52
Total,	207

The prevalence by months is given in the following table, the disease being most frequently seen during the hot weather.

	Cases.		*Cases.*
January	4	July	35
February	3	August	43
March	4	September	41
April	11	October	19
May	15		
June	32	Total,	207

I have records of the condition of the spleen in 107 cases. In 84 of these it was found to be enlarged. In 33 cases in the house and in the out-patient department at the Massachusetts General Hospital the blood was examined, the *plasmodium malariæ* being found in 25 cases.

The locality where the disease was contracted is, however, the chief object of this paper; and I have placed in the following table the towns from which the cases came, arranging them in order by the river-courses on which they are situated.

CHARLES RIVER.	*Cases.*
Natick	4
Wellesley	1
Needham	3
Dedham	2
Newton	10
Newton Upper Falls	2
Newton Lower Falls	5
Riverside	1
Waltham	6
Chestnut Hill	2
Brookline	2
Brighton	2
Cottage Farm	1
Cambridge	17
NEPONSET RIVER.	
Canton	1
Hyde Park	4
Matapan	1
SUDBURY AND CONCORD RIVERS.	
Framingham	1
Saxonville	2
Concord	2
Lowell	1
SAUGUS RIVER.	
Wakefield	3
Saugus	1
West Saugus	2
Revere	2
MYSTIC AND MALDEN RIVERS.	
Winchester	2
Belmont	1
(Cambridge near Fresh Pond, 5.)	
Malden	2
Everett	2
Chelsea	2
Somerville	6
Charlestown	5
East Boston	1
Total (excluding 5 in Cambridge counted twice)	99
East Braintree	1
Tewksbury	1
Rockland	1
Total in vicinity of Boston,	102
Boston	105
Total cases,	207

It will be seen that 102, or one-half of the cases came from the vicinity of Boston, 105 coming from Boston itself.

The rivers are the Charles, Sudbury and Concord, Neponset, Mystic and Malden, and Saugus Rivers. The intimate connection of the Sudbury and Charles Rivers at their source has already been mentioned. At Framingham and Natick the rivers are also closely connected. At Hyde Park there is a direct connection between the Charles and the Neponset Rivers by means of Mother Brook. The Newtons that are not directly on the Charles River, are thoroughly permeated by brooks which flow into that river, one branch flowing through Hammond's Pond at Chestnut Hill. Brookline is bordered by Muddy River, which extends from below Jamaica Pond through the new Back Bay Fens to the Charles River. A branch of Muddy River flows through the lower parts of Brookline. The Mystic and Charles Rivers join at their mouths. The head waters of the Mystic and Saugus Rivers are not widely separated.

It will be seen by the table that the towns on the different river systems in the vicinity of Boston were well represented at the hospitals.

Outside of these river systems were one case from

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[6] J. F. A. Adams: Malaria in New England, loc. cit.

East Braintree, one from Rockland and one from Tewksbury. As was before remarked, all cases that originated away from Boston or vicinity were as far as possible excluded.

The seventeen Cambridge cases are so scattered in East Cambridge and the Port as well as in Cambridge proper, that no conclusions can be drawn except from a group of five cases on Concord Avenue and Cushing Streets close to Fresh Pond. A branch of the Mystic River, Alewife Brook, comes from this pond.

There are 103 cases from Boston itself, excluding Charlestown, East Boston, Brighton and Mattapan, which are entered under the table of rivers, but including South Boston, Jamaica Plain, Forest Hills, Roxbury and Dorchester. The criticism may, of course, be made, that these cases in the city may have acquired the malaria in the out-lying districts, even if they have not lived in a malarial country elsewhere. Workmen, for example, while living in Boston may go out to the Newtons to work by the day. Some errors may undoubtedly come in in this way, but the large number of cases in the city recorded at the hospitals in the space of a few months would certainly point to its originating here. Another strong evidence of this is to be found, as I shall point out, in the distribution of cases in the city.

For perhaps ten years or more physicians have seen an occasional case of malaria in Boston which appeared to have originated within the city limits. The number, however, has been very small, and is not to be compared with the increasing number of cases now, beginning after the first epidemic in the valley of the Charles at Natick in 1886.

Of the 103 Boston cases, the exact locality of each is known in 86; and I have carefully posted them on the map, in order to determine, if possible, whether there were any particular parts of the city especially subject to malaria, and whether these parts owed their liability to old water-courses or marshy situations.

In the city proper the cases are most numerous at the West End in the neighborhood of Poplar and Brighton Streets, while the very populous North End is but sparingly represented, eight cases only being found there. There is another bunch of cases in the South Cove district. The nearness of these two districts to the Massachusetts Hospital and the Dispensary may explain this localization and have no other significance. I simply give the facts for what they are worth.

The occurrence of nine cases in South Boston along the shore of South Bay, with only two other cases in the rest of South Boston certainly seems to be a significant fact. There are three cases on the Boston proper side of the bay, in Ward 20.

Farther south there are three cases on the shore of Dorchester Bay, two being on a small inlet or creek near the mouth of the Neponset River. The only other case from Dorchester was from Lauriat Street, which I will speak of presently.

The remaining cases in Roxbury, Jamaica Plain, and the Lauriat Street case in Dorchester, look on the map so scattered as not to be worth our consideration. On looking closer, however, it will be seen that nearly all of them are beside Stony Brook or one of its branches. This brook arises by two main branches, one of which begins in Hyde Park not far from Mother Brook, the bond of union between the malarious Charles and Neponset Rivers. This branch flows through Clarendon Hills and Mount Hope, receiving on its way a small brook which rises close to Lauriat Street, Dorchester. At Forest Hills the Hyde Park branch unites with a small branch from West Roxbury and Roslindale. There are several branches below this, the two chief ones coming in from the West near the Forest Hills and Jamaica Plain Stations. The brook finally disaapears into an underground passage near Pynchon and New Heath Streets, to emerge again and join Muddy River in the Back Bay Fens. There are ten cases in the Roxbury, Jamaica Plain and Forest Hills district whose residence is known, besides three others from Jamaica Plain whose exact residence is not known. Seven of the ten are close to Stony Brook or its branches, namely, one on Lauriat Street, one on Keyes Street and one on Boylston Street, a branch of the brook running between these streets; two on Union Street, right beside the brook. One on Bickford Street, close to a branch; and one on Vale Street, near another branch. The three other cases were at a distance from the brook; one of these, however, lived at the end of Eliot Street next to Jamaica Pond. There were also several cases near the outlet of Stony Brook in the Back Bay Fens. It would seem reasonable, therefore, that malaria should be found in the Back Bay near the Back Bay Fens, even if it did not extend to a distance from this park, as the imperfectly drained soil made by filling-in must be easily permeated by the waters of Stony Brook and Muddy River. Cases from this region did not, of course, apply at the hospitals for treatment.

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INFANTILE SCURVY, WITH NOTES OF TWO CASES.[1]

BY O. F. ROGERS, M.D., OF DORCHESTER.

The first is a case of the uncomplicated disease of mild type.

A child of healthy parentage had a good home and the best of care. After the first few weeks of its life it was fed on Mellin's Food (two tablespoonsful to a pint of water) and sterilized milk in equal parts till it was about nine months old, when the food was diminished and the proportion of milk increased to four-fifths. All the milk was cooked twenty minutes in an Arnold's sterilizer. The child was always well, fat, rosy and good natured.

She had four teeth at the age of eleven months. She was then given a little bread and cracker, and cereals well cooked.

She was a few days more than one year old when she ceased to creep and pull herself up by the aid of chairs or to stand when placed upon her feet as she had done for a few weeks. About this time, perhaps a little before, numerous small reddish spots appeared upon her back and limbs, most numerous upon the legs. On the outside of the calf of the right leg the eruption was confluent over an area of about one square inch, giving the spot the appearance of a light-colored ecchymosis. The eruption gradually faded and disappeared after about three weeks. About ten days after she first refused to stand she suddenly began to manifest pain when she was lifted, and, soon after, she ceased to move the right leg and screamed when it was touched. She slept badly, often waking and crying violently. About thirteen days after she refused to stand. She became nearly frantic when I attempted to examine her. She lay on her back, the head thrown back, both thighs and legs flexed, from which position she rarely moved. The right leg seemed to be slightly swollen. It did not pit and there was no hardness, discoloration or heat. The epiphysis of the right tibia was slightly enlarged at the ankle, as was that of the femur at the knee. Both radii were very slightly enlarged at their lower ends, the right being the larger. There were no beads on the ribs nor other evidence of rickets. The gums about each of the four teeth were swollen and of a dusky red color and looked as though they would bleed at a touch. The child had lost color and her expression was anxious. It took its food fairly well. Its bowels were regular, as they always had been.

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[1] Read before the Norfolk District Medical Society, October 2[illegible], 18[illegible].

The patient was ordered unsterilized milk, the juice of one orange a day and the juice from six ounces beef slightly broiled.

The second day after this the patient was better, in that it cried much less and was more tolerant of handling. The third day it moved its legs slightly; and on the sixth day the mother brought the child to me in its carriage, the picture of contentment. She said the baby had tried to to bear its weight on its legs. The swelling of the gums had entirely gone.

The second case was one of infantile scurvy complicated with rickets. The child was born of fairly healthy parents and excellently cared for. It was fed from birth on thoroughly sterilized milk and oat-meal jelly, equal parts. When it was about four months old it had diarrhœa at the seaside. This was attributed to Jersey milk, and excellent milk from common cows was procured and given as above described. The baby soon recovered, but it gained its weight slowly, was pale, and its flesh was rather soft; but it was not thought to be ailing till about the beginning of its ninth month, when it had the grip, and was sick about two weeks.

It was a few days more than ten months old when it was noticed that the baby would not touch her toes to any hard substance if she could prevent it, and cried if she was let down upon her feet, though she had formerly enjoyed trying to stand. She cried when she was handled or her limbs were moved, and was disinclined to take food. After a few days a small dark-blue spot appeared above one knee. This remained two or three weeks, and gradually disappeared. After the illness had continued about a week, she refused all food save brandy, till the change in her diet was made near the end of the illness. She was made to take from four ounces to sixteen ounces of food in twenty-four hours. She vomited at intervals, and irritability of the stomach occasionally necessitated omitting nourishment for several hours at a time.

The child became absolutely helpless within a few days from the beginning of the illness, and for six weeks she screamed when she was moved or touched. She was frightened if approached, and cried and moaned a great deal. When I first saw her in the sixth week of her illness, she was about eleven months old. She had grown somewhat thin. She had no teeth. Her expression was anxious, the countenance pale. The bowels were not loose, the motions rather sour and pasty. She perspired freely, especially about the head. When an attempt to examine her was made, she was thrown into a pitiable state of terror. The sternal ends of the ribs appeared to be slightly enlarged. The lower ends of both radii were enlarged. There was a hard cylindrical swelling of the epiphysis of the left tibia, extending about two inches above the ankles. The skin was tense but did not pit. There also appeared to be a swelling of the epiphyses above the knees. The legs were slightly flexed. The child lay upon its back, and uttered loud cries if it was moved. The temperature ranged from 99° to 101°. The pulse was 120 to 132 in the minute. There were no spots discoverable upon the skin or in the mouth.

Three or four days later the child was given the juice of half an orange and one ounce of fresh meat-juice daily. The milk was no longer boiled, but was raised to a temperature of 155° or 160° F. The child took the juice greedily, and at once began to improve. She began to move her legs within a few days; and at the end of a week, to use her mother's expression, "you wouldn't know her for the same child." Later, fresh milk was given, which she has used since. The epiphyseal swelling disappeared after four or five weeks. Very soon after, she cut a tooth. She is now seventeen months old, has seven teeth, and is the picture of health.

It is but a few years since infantile scurvy was differentiated from acute rickets and purpura rheumatica. Dr. W. B. Cheadle, in 1878, was the first to point out the part taken by scurvy in various cachectic conditions of infancy. Dr. Wm. Koch maintains, in an elaborate thesis, that all the hæmorrhagic diseases are manifestations of scurvy, but his views have not obtained universal acceptance. It would be well, however, if his views were more generally known, as a knowledge of them might result in the more frequent use of an antiscorbutic regimen in cases of hæmorrhagic disease, with the probability of doing good and no possibility of doing harm.

The general characteristics of the condition are quite completely shown in the two cases I have described. The first and mildest displayed the eruption very perfectly. I believe that sponginess of the gums and ecchymosis of the skin are generally considered to be the crucial tests for scurvy in the adult, but there are exceptions.

In scurvy of edentulous adults as well as children there is usually no swelling of the gums, though there may be fugitive ecchymosis at the site of an oncoming tooth. If the child has teeth, usually there is sponginess about certain of the teeth and not elsewhere in the mouth.

There may be no eruption in well-marked infantile scurvy; or, if present, it may remain but a brief period, and thus be overlooked.

The differential diagnosis between rheumatism and scurvy in a child without teeth and without hæmorrhagic spots upon the skin must oftentimes be difficult. If the possibility that the disease may be scorbutic is held in mind and the therapeutic test of fruit-juice is applied, the doubt may be solved. The most characteristic bone symptom is a cylindrical swelling of the lower ends of the tibia and femur. The radius may be also similarly affected.

Post-mortem, there is found, according to Barlow, "A more or less complete sheath of blood-clot between the upraised periosteum and bone. Sometimes the greater portion of the periosteum of the shaft of the bone is raised." Slight violence has caused fracture under these conditions.

There can be no doubt of the identity of the disease in infants and adults. Hæmorrhages into the pleura, intestinal canal, lung, spleen, etc., occur in both. Subperiostial hæmorrhages have been observed in the adult, but are more frequent in the infant.

Lack of fresh food is the cause of the disease. Fresh milk has undoubted anti-scorbutic power, and I can find no record that any child has had the disease while at the breast. Numerous cases have been reported as having occurred while children were using so-called complete foods diluted with water.

Both the children whose cases I have reported had lived entirely on sterilized cows' milk mixed with water, and artificially prepared foods. While there is much to be said in favor of the use of sterilized milk under certain conditions, it is unfortunately true that it cannot be termed a "fresh food" when considered in its relations to scurvy.

According to Barlow, infantile scurvy has three important diagnostic marks:

(1) Predominance of lower limb-affection, in which there is "immobility going on to pseudo-paralysis, excessive tenderness, general swelling of the lower limbs, skin shiny and tense but seldom pitting and not characterized by undue local heat; on subsidence, revealing a deep thickening of the shafts, also liability to fractures near the epiphysis."

(2) "Swelling of gums, varying from definite sponginess down to a vanishing-point of minute transient ecchymosis.

"These constitute the chief diagnostic differentia between infantile scurvy and rickets properly so-called. But to these must be added, as the most important diagnostic of all —

(3) "Definite and rapid amelioration by anti-scorbutic regimen."

Clinical Department.

A CASE OF INFANTILE SCURVY.[1]

BY F. W. GOSS, M.D., OF ROXBURY.

In March last my attention was called to a child, eleven months old, who seemed to be suffering from pain about the left ankle and foot. They were possibly a little swollen, but not reddened. The child cringed and cried when the foot was moved. The trouble passed off in a few days.

The mother was not able to nurse the child from its birth; and after various experiments it had seemed to thrive on evaporated milk and lactated food.

In April it was vaccinated, and after that appeared quite well and strong. Early in June, being fourteen months old, the trouble about the left leg returned, and soon both lower extremities were involved. In the course of a few days, not only movement of the legs but any movement of the body gave the child great pain. It was very restless and fretful at night, and from being of a happy and playful disposition, was in a state of almost constant worry. It gave up all attempt to move its legs, and a condition of pseudo-paralysis of the lower extremities supervened. They were apparently somewhat swollen and shining, and tender over the tibiæ, but the epiphyses were not enlarged in either the upper or lower limbs. There was considerable sweating of the head. Meanwhile the child appeared to be well-nourished and was quite plump.

About June 15th the gums of the incisor teeth became spongy, and the vaccination scar ecchymosed.

June 19th she was seen by Dr. E. H. Bradford who said the trouble resembled Parrot's disease, a pseudo-paralysis of infants, depending on mal-nutrition. He gave a favorable prognosis; advised rest, having the child put on a frame that it could be moved with as little jarring as possible; careful nutrition with beef-juice, cod-liver oil, phosphorus, and a change from the evaporated milk and lactated food if there was not speedy improvement.

The child did not improve much for a few days, when fresh milk was obtained from a neighboring dairy and substituted for the previous artificial food. Almost immediately there was marked improvement. Within twenty-four hours it seemed as though decided benefit could be noticed. The child took the fresh milk eagerly. The sponginess about the gums and the ecchymosis of the scar rapidly disappeared. She soon began to move her legs, became happy, rested well at night, and in the course of a few weeks was moving herself about the floor and attempting to stand. She is now well and strong.

Medical Progress.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

LAMINECTOMY FOR PARAPLEGIA?[1]

In an excellent article, Dr. Lloyd has tabulated all the cases reported of laminectomy for Pott's paraplegia. He bases his conclusions not only on these cases, but on the writings of others on the subject. He says as follows: "It is undoubtedly very hard to deduce absolute conclusions from such a small number of cases as those which he has been able to tabulate, namely, seventy-five. Yet it is extremely important to determine what is to be expected from the operation. Personally I cannot say that I can see any very brilliant future for it. It can be applicable to less than fifty per cent. of the cases of Pott's disease, as proven by the statistics of Gibney and Myers; and even in this small number, its application is limited again to those cases where the compression has not produced a complete degeneration of the cord. Still it is not by any means to be relegated to the obselete class of operations. It has a place; and that place, I am convinced, is destined to play a more important part in the therapeutics of Pott's disease than it has done heretofore, as its limitations are more fully understood and its technique simplified."

Dr. Lloyd thinks that the operation is naturally contra-indicated (1) in cases where there are other complicated tubercular affections; (2) in cases where mechanical treatment has not been applied. The operation is indicated (1) in cases where posterior spinal disease is made out as the cause of paraplegia; (2) in cases where the condition seems to indicate a failure of mechanical treatment, that is, where dislocation has occurred, or where a sequestra is causing a compression; (3) in cases where, during the employment of intelligently applied apparatus, the symptoms continue to increase in severity; (4) in cases where, after a certain period of careful mechanical treatment, say eighteen months, the condition remains stationary; (5) in cases where pressure-myelitis, threatens the integrity of the cord. In all cases where sinuses lead down to bone, or can be safely straightened so as to allow the probe to explore the abscess cavity with which they communicate, they should be enlarged so as to provide thorough drainage. If sequestra are present, they should be removed.

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[1] Read before the Norfolk District Medical Society, October 25th, 1892.

[1] Samuel Lloyd: Annals of Surgery, September, 1892.

In the cervical region the operation is less favorable than elsewhere, as far as statistics would show; but the dangers to life, even without operative interference, are also greater. One of the cervical cases died from injury to the nerve; and in order to determine the presence or absence of a tumor in the cord, exploratory puncture was resorted to, illustrating the danger of operative interference at that level.

It is Dr. Lloyd's opinion that, where there are any indications that inflammatory conditions are extending towards the portion of the cord in the cervical regions, an operation should be undertaken at once. An opening of the spine may be sufficient in order to avert the dangers due to septic disturbance. The urgency of the condition would render the operative treatment advisable, though the results were more unfavorable than they are.

An examination of these cases collected by Lloyd is quite valuable until a similar number of cases operated upon at the hands of one operator may be collected; for statistics based upon the work of a number of surgeons, using different methods and operating at different stages of the disease is of less value.

Dr. Abbe[2] gives a valuable series of cases in which laminectomy was done; and the report is of particular value, as the results were not all of them encouraging. Three were done for old fractures in which there was more or less complete paraplegia; in these the patient was not benefited. The technique of the operation, which was the same in all, was as follows:

An incision was made parallel to the spinal processes of the vertebræ, about half an inch from the median line, carrying the incision down to the bone. From this it was deflected, and the laminæ exposed and cut away with a rongeur; in all of the cases he found this method particularly easy and much preferable to the saw. In three of these cases the operation was done for pressure which was secondary to Pott's disease, and in these the result was more encouraging. In the series there are also two cases which were done for the relief of persistent pain; in both of which a previous nerve stretching had been attempted, but without result.

The article is a valuable one, showing the method of attacking this condition, and the relief which is possible in some forms of compression, more particularly those which are due to disease.

VERTEBRAL DRAINAGE IN POTT'S DISEASE.[3]

The writer describes a new method in the surgical treatment of the spinal column. The method which the author advocates is specially adapted to the lumbar and dorsal regions, and should never be employed except in cases with large abscesses, whether they are open or not. It has for its purpose the attempt to tap the pus at its original source. The operative technique appears to be sufficiently simple. A T-shaped incision is made on each side of the vertebral column along the external border of the muscles, parallel to the spinal column. The drainage can be made either for a free vertebral or across vertebral bodies. The first is sufficiently simple. The difficulty consists generally in the small space left between the ribs, especially in children. If necessary, a resection of one or two ribs is made. The operation has been done twice. In the first case there was marked improvement. In the second the patient died of pneumonia after recovering from the operation.

SPINAL SURGERY IN POTT'S DISEASE.[4]

Chipault, in a interesting article on spinal surgery in Pott's disease recommends in addition to trephining the spine, curetting of the carious portion of the vertebra in which the pus originates. It is well known that in Pott's disease the transverse and spinous processes are in healthy condition and that the disease is located entirely in the bodies. Chipault therefore advises this operation in such cases as there is reason to suppose that the paralysis which is present is due to the presence of pus. Laminectomy is done in the ordinary way with the removal of four or five of the spinous processes. By means of a small elevator and curved scissors, and curved forceps the dura is separated from the bone in the spinal canal by careful manipulation. A probe is then passed between the bone and the duræ, and if any carious sinus is found the cord can be pressed to one side, a curette introduced, and the tubercular focus in the body curetted.

Chipault has operated upon three cases; two recovered, one died three months later, of pneumonia. He notes that in the normal portion of the spinal cord pulsation will be found synchronous with respiration and with pulsation; but in the part the cord is pressed upon by suppuration pulsation will not be seen. He claims that although the operation is a delicate one and requires surgical technique, it is thoroughly feasible and beneficial in suitable cases.

A METHOD OF APPLYING PLASTER JACKETS WITHOUT SUSPENSION.[5]

A method is described for the application of plaster jackets which the author has practised for some time to avoid the unpleasantness of suspension, particularly the pressure on the head and upon the plexus of the nerves in the axilla. His method is as follows: The patient is seated, and the hips are strapped by broad webbing to the seat or to the legs of the chair. A band of webbing three inches broad is passed around the body in front and secured to the wall behind. Another band, usually of calico, is placed around the kyphosis and attached to a pulley in front of the patient. A third strap passes in front of the shoulders and is attached to the wall behind. When ready, these straps are tightened, which has the effect of strengthening the spine as in suspension. The method is applicable particularly in those cases in which a long suspension would be very trying. He also uses in the water in which the plasters are placed a little of the solution of liquid glue, which adds to the elasticity and also to the strength of the corset.

METHOD OF APPLICATION AND THE USE OF THE WOOD CORSET.[6]

The writer describes the corset which was first shown by Waltuch, but which has met with but little favor in America. It is made of thin shavings either of pine or of fir, which have been treated with cologne, glue and glycerine. They are placed upon a model which is prepared by the Braatz method, and put on over a hose of stockinette which is covered with a layer of linen. It is claimed that the corset is lighter, only weighing about one-third as much as a light plaster-of-Paris one, and it is less uncomfortable in summer, does not soften by heat (except in extreme weather), and can then be stiffened again by an easy process. The method of its application is not difficult and it can be done in a few hours.

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[2] Dr. R. Abbe: Transactions of the New York Academy of Medicine, 1891. vol. vii. p. 287.

[3] Vincent: Revue de Chirurgie, April 10, 1892.

[4] Revue de Chirurgie, November, 1891.

[5] R. Barwell: Lancet, 1892, vol. i, p. 792.

[6] Dr. J. K. Young: Annals of Gynecology and Pædiatrics, 1890-91, vols. i-iv, p. 689.

THE PLASTER BED IN THE TREATMENT OF POTT'S DISEASE.[7]

The author describes the treatment advocated by Lorenz, which consists of a plaster cast or impression which is taken of the patient's back while in a supine position. The method of application varies somewhat as to whether the disease is in the lumbar or dorsal region of the cervical. For the former the patient is placed upon his face and a pad placed under the head and shoulders and the pelvis, and the feet are also raised. If more lordosis is required or thought advisable, the feet and the pelvis are still more elevated. The plaster is applied from below the pelvis to the occiput, and on either side as far as the middle line. The patient is strapped or bandaged to this impression, which serves then as a portable splint.

In the application of the plaster in the cervical region, the patient is laid upon the face as in the other, but the shoulders and the occiput are placed upon the same level, while the feet and pelvis are not raised. In the few last layers of the plaster a steel is incorporated, from which extension is made on the head much after the same method as in the jury mast. Much is claimed for the treatment; and in cases of sensitive backs, if well applied, it should be capable of giving a good deal of relief.

MYELOPATHIC SCOLIOSIS.[8]

This author has considered this form of scoliosis, and divides the cases into two classes. First, those which are symptomatic and are secondary to infantile paralysis, progressive muscular atrophy, syringo-myelia, Morvin's disease, secondary degenerations and Friedreich's disease. In syringo-myelia it is found to exist in about 25 of 70 cases. In Morvin's disease it is very frequent, and is usually found in the right side. In the other forms it is rather rare. The other class consists of those which are found to exist independently of a condition of rickets or faulty attitudes, and are supposed to result from those conditions which are the result of degeneration which is situated in the cells of the anterior cornua, and are supposed to ante-date birth.

OPERATION ON TUBERCULAR HIP-JOINTS.[9]

Dr. Poore has given the result of operations upon 67 hip-joints; and his paper is of particular value, as it gives the result after a long period has elapsed. The operations consisted of 65 excisions and five erasions; in eight the trochanter was trephined, and in 11 the cavity of the femur scraped out. Of the excisions, 15 were done by the anterior incision, made on the outer side of the crural nerve, beginning a little below, and internal to the anterior-superior spine. He considers that this incision has many advantages over the other, and it was done in all those cases where there were not extensive sinuses behind the trochanter. The joint can by this method be more thoroughly cleaned out; and if it is necessary later, the lateral incision can be made. In all of them the joint was thoroughly cleansed and flushed out with hot water; and in the majority of cases no drainage-tube was used, but the opening was packed with iodoform gauze. He considers that the results are better by this method and the cicatrix above the shaft is firmer, preventing to an extent the riding up of the upper end of the bone.

In the after-treatment, the extension and the long splint are used; but he guards against too forcible traction, as it is inclined to draw the bone too far away from the acetabulum, particularly in those cases in which the head and neck have both been removed, and in a way impairs the usefulness of the joint later.

The ultimate results which are given are of particular value. Of these, of the patients discharged cured, the condition of 23 is known. Of these, one is well after eighteen years; one, after eleven; two, after nine; one, after seven; two, after six; one, after five; one, after four; one, after three; four, after two; and nine, after one year. The amount of shortening in many of them has increased. In one it increased in eight years from one inch to two and a half; in another, in eighteen months, from an inch and one-quarter to an inch and three-quarters; in one, during six years, from one and a half to two and a half; in another, in five years, from an inch to one inch and a half; in another, in two years, from one inch to an inch and a half; in one there was at the time of discharge about four inches, which was due to atrophy of the limb during growth, at present, however, it has increased to seven inches. Trephining of the neck of the femur was done in eight cases; in each by an incision over the trochanter major, and by a three-eighths of an inch trephine; in four of these a diseased bone was found; in one there was none; in two of these there was no return of the disease; the six others came later to an excision. In many of the excisions the central cavity of the femur was found to present a dark appearance with infiltrated soft bone. In these a counter opening was made in the shaft above the condyles. A long probe was passed down the shaft of the femur, and by means of this and a piece of iodoform gauze, it was throughly cleansed. Twenty-one cases of this condition were found; in eleven this operation was done. Of this eleven, nine recovered; of the ten others, but two recovered.

THE OPERATIVE TREATMENT OF CONGENITAL DISLOCATION OF THE HIPS.[1]

Lorenz has performed Hoffa's operation once on a girl of seven, a case of double congenital dislocation. Reduction of the head was made with great difficulty, and did not succeed except after an hour and a half of effort. Unfortunately there was suppuration, and the luxation reproduced itself. Lorenz thinks after this that the pelvic trochanteric muscles do not constitute the chief obstacle to the reduction. According to him, it is especially the muscles which are inserted in the ischium; the biceps, the semi-tendimosus, and semi-membranous; the abductors and the muscles going to the anterior and superior iliac spine; the sartorius and the tensor vaginæ femoris are also affected. For this reason the author advises, while the assistant makes traction, that the abductors be divided.

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[7] Redard: Gaz. med. de Paris, 1892, vol. i, p. 148.
[8] Monstsarrat: Thèse de Paris, 1891.
[9] Dr. Chas. T. Poore: New York Medical Journal, April 23, 1892.
[10] Lorenz: Centralblatt für Chirurgie, August 6, 1892.

Lorenz has tried his methods four times, but he cannot give a definite result because the operations are very recent.

(*To be continued.*)

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

HENRY JACKSON, M.D., SECRETARY.

Regular Meeting, Wednesday, November 16, 1892, Dr. Frederick C. Shattuck in the chair.

MALARIA IN BOSTON AND VICINITY.

Dr. O. F. Rogers, of Dorchester: I think that in common with most of the physicians about Boston the Dorchester physicians have found that during the past few years malaria has been somewhat on the increase, although I think it would be a libel on Dorchester to say there is much malaria. Dorchester is a very much better drained place than ever before. A large number of sewers have been built there in the past few years, in spite of which there is no question but that there has been an increase in the amount of malaria. During the twenty years I lived there, I saw none until the past five or six years. During this time there has been a very large amount of excavating. A large number of sewers have been built, some of them deep intercepting sewers which have dried up some of the natural water-courses to a great degree. The streets are constantly being opened to put in gas and water and sewers, and excavations are constantly being made for putting in cellars. The result of this — or something else has been that there has been a moderate increase in the amount of malaria. I live on the highest part of Dorchester called the Upper Road, and see perhaps less of malaria than some others. During the past year I have seen two or three cases that seemed to me like the remittent fever I used to see a good many years ago in the Southwest. The first case that I could call remittent fever, occurred at the lower end of Clarence Place, which is a street near an old water-course which has been partially dried by a sewer. The old water-course discharges into one of the feeders of Stony Brook to which allusion has been made by the reader. The patient, a woman, always lived in Boston with the exception of two years she passed in New York some four years ago and never had any diseases that were in any way like malaria. When I saw her first she had been ill two days. She had a chill at eleven at night, quite a decided one. When it came on, — it was in August, — she was rather delighted, it being a hot night, that something had happened to cool her off, but she soon changed her mind when she grew sick at the stomach, had pain in the back, and began to vomit. She passed a very wretched night. The next morning she was a little bit relieved, sweat a little, still felt pains in the back and very decided pain in the head, was weak and feverish. At two or three o'clock in the afternoon she had another chill, and repetition of the symptoms she had the day before. The third day about three o'clock in the afternoon she had a chill, and sent for me. That was August 24th. Temperature 104°; pulse 120. She was nauseated and vomited a greenish mucus tinged with bile, stomach very irritable, bowels constipated. She was rather an observing person and I got a very good history of the case. I gave her four grains of calomel. The next day I saw her in the morning and she had a temperature of 101°, less irritability of the stomach and felt somewhat more comfortable. In the afternoon she had a chill, — by chill I mean a cold feeling all over. It soon passed off and she was hot and at seven o'clock temperature 103.4°, but that undoubtedly did not represent the highest temperature she had had. It then occurred to me that possibly she had remittent fever, and I gave her quinine. The instructions for giving the quinine were to take eight grains, when she found herself breaking into a sweat in the morning, — at seven o'clock and at ten in the forenoon. The next day the temperature was 99° in the morning. She went through that day without any chill. In the afternoon temperature 101.2°. She had the quinine again the same way the next morning. On the 27th temperature 98.4°; evening 99.5°. No chill that day. On the 28th temperature 98.4° and so at night. Any doubt I may have had as to the malarial character of this attack was removed by the appearance a few days later of a tertian intermittent. This was permitted to run through a few paroxysms and then stopped by quinine.

On September 13th, I saw a young man, twenty years of age, who lived at the head-waters of the same water-course I have spoken of, that emptied into Stony Brook. One night he came home and had a tremendous chill. On the 11th he had a chill. I did not see him, but he told the same tale my first patient did. The 12th, he was chilly, tried to get up, but had to go back to bed. On the 13th, in the afternoon, he had another very decided chill; and then I saw him. Temperature 104.6°, pulse 124, nauseated, exceedingly nervous, eyes suffused, face somewhat flushed, voice trembled when he talked. He wandered a little in his speech at night; had not slept well, his mother said, and was really very sick. He vomited everything he took. I gave him a dose of calomel, which he retained. The 14th of September, in the morning, temperature 102.6°; in the afternoon he had a chill and fever, with temperature of 103.8°, and precisely the same train of symptoms as before. I did not know certainly what ailed this man; but I was inclined to believe that he had remittent fever, and gave him quinine. On the 15th, temperature was 101° in the morning; in the evening 102.6°; no chill; nausea less; and he felt a good deal relieved. On the sixth day of the disease, temperature 99.8° in the morning, and very comfortable indeed; afternoon, 101.8°. Seventh day, 98.4°; and evening 99.2°; but there was no chill at all. He still kept taking the quinine, and the next day he was entirely relieved of the fever.

I believe that both of these cases were remittent fever. The differential diagnosis between typhoid fever and remittent fever is sometimes difficult, and sometimes it is not. If it is seen in the earliest stages, it seems to me a man ought to make the diagnosis, although I confess that I did not. The temperature range of remittent is very different, as I have seen it, from typhoid fever. It certainly starts up much more sharply, remissions are much more decided in the morning, the invasion is exceptionally sudden, the stomach and bowel symptoms are entirely different. Although we have nausea in typhoid fever and some irritability of the stomach, usually there is not this intense nausea and this rejecting of all foods. The bowels are very likely to be very constipated, and to give us trouble to move them. The poison which will cause remittent fever is undoubtedly of a more intense sort than the poison which causes intermittent fever, which is perhaps the reason why in past years we have seen intermittent fever and not remittent fever. I believe that in the region of Dorchester I have spoken of, owing to the excavations or some other reason, the poison has become more intense, and possibly we may see more of remittent fever.

Remittent fever many times is an exceedingly difficult fever to manage. Recently, in the Indian army, it has been the custom to give the quinine during the exacerbation of the fever. It has been found that a less amount of quinine will cure the disease or will relieve it than if it is given during the intermission, which has been the American habit and is to-day the habit in the Southwest. One thing I am quite sure of, and that is that the preliminary dose of calomel is always quite desirable, and whatever time you may lose in the mild case of remittent fever waiting to give calomel and get its effects before you give quinine, is time well spent and not thrown away. I think you gain by waiting to give calomel before giving quinine.

Dr. G. K. Sabine, Brookline: The first case of intermittent fever which I ever saw in Brookline was twelve years ago. That was in a child perhaps three years old, who contracted it a year before at Charles River Village. I met with no more until seven years ago, when I saw a case at Cottage Farm, in an old brick house on low land near the wire factory, which has since been burned. My impression is that that case was within the city limits, just outside Brookline. Subsequently there were other cases in the same house, I was told. That was seven years ago. That same year I saw two cases, I think, in that part of Brookline known as the Marsh, an Irish settlement. I then saw no more and heard of none until perhaps three or four years ago, when cases began to be rather prevalent at Chestnut Hill, not very far from Hammond's Pond, more particularly at the intersection of Heath and Hammond Streets. In that neighborhood there are a number of small ponds of stagnant water, caused by excavating the earth to put into Holyhood Cemetery. The water stands there the year round. During the last three or four years cases have also occurred in various localities, not numerous, along the new parkway. They occurred before they began to dig. In no place have they been as numerous as at Chestnut Hill. They have been on the increase each year. Dr. Chase, who has looked up the subject pretty thoroughly, has been able to count, I think, something like sixty cases which have occurred at Chestnut Hill this year. Not all cases, by any means, have occurred in the low localities or localities near water. I remember last year I saw two cases near the top of Fisher Hill; to be sure, there are two reservoirs there, one belonging to Brookline, and the other to the City of Boston. These cases were not in a house near the reservoir, however, but on high land. Almost all the cases which I have seen have been of the tertian type. I do not know that I have seen more than two or three quotidian. I have seen no remittent cases at all. Two or three things which I have noticed about the trouble are interesting, and one is the exemption which the inhabitants of some houses enjoy in the midst of a locality where all the other people have it. There will be one house where every member will have it in the course of a season, and another house a few rods away perhaps will be entirely free. I have noticed a good many cases that occurred a second year. All that I have seen have been very amenable to treatment, much more so, I should say, than any which I have ever seen which came from the South and West.

When a student in the Marine Hospital, I used to see more or less of those cases, and it seemed to me that ours yielded more readily to treatment, although some of the cases have appeared very severe at first. I can recall one case where the temperature ran as high as 106°, and taken an hour after a dose of phenacetine. I never had occasion to try anything but quinine, and I don't know that I have ever known but one or two persons have more than a second chill after beginning treatment. It is very curious how long it is sometimes before the intermittent character begins to develop. A number of times I have been called to patients vomiting and purging, with high temperature; and I supposed they were beginning with a dysentery, probably, owing to the elevated temperature. That, perhaps, would subside in a measure within twenty-four hours, and go on several days before they began to have chills or before the real nature of the trouble would develop.

A few weeks ago a man came to my office one morning complaining of an acute dyspepsia, had lost his breakfast every morning for a week. I was led to suspect that possibly he was coming down with typhoid. I think he had had a little nose-bleed. I took his temperature, and found it perfectly normal; and I inquired very closely whether he had had anything in the nature of a chill, but he had not. He sent for me five days after that with his first chill. It must have been nearly a fortnight after he began to have trouble with the stomach before this occurred.

The case I am about to speak of did not originate in the neighborhood of Boston, but was seen here in this city. A girl who had been spending the summer at Lake Champlain suffered continuously with nose-bleed and slight temperature. Dr. Shattuck kindly saw the case two or three times for me and once with me, and probably will remember it. I think it was fully a week in which the girl had nothing characteristic at all about the trouble.

In regard to treatment, I said I had given nothing but quinine. I have always given that the way we were taught when students by Dr. Clark, namely, a large dose eight hours before the expected chill, and small doses every two hours until the time of the expected chill. People who live in malarious regions talk about dumb ague and many very vague symptoms. I have never seen any such cases. Either people have had intermittent fever or they have not. I have not seen any cases that could be called intermittent without they had distinct chills.

Dr. Chase: My neighbor, Dr. Sabine, has given such a good account of malaria in our region that little remains to be told.

The prevalence of malaria in the settlement referred to at Chestnut Hill (at Holyhood Cemetery, about the junction of Heath and Boylston Streets with Hammond

Street,) has interested me a good deal the past season. The malarial miasm seems to have extended from Newton to that part of Brookline, and finding there four stagnant pools and considerable swamp-land, it took up its abode. The past three seasons we have had a number of indigenous cases in other parts of the town. Though usually quite amenable to treatment, one of the patients at Holyhood states he suffered severely for ten weeks, though in the care of an experienced practitioner.

DR. BUCKINGHAM: The reader, if I understand him, holds the view that malaria does originate in the city, but seems to think it necessary to defend that position, assuming that it may not be universally accepted. I have seen a good many cases in the hospitals, and a few out of them; and I believe I have never seen a case that I have not investigated with reference to its origin in Boston. I agree with the reader. I think we do have malaria which originates in Boston; and, furthermore, it is increasing. During the past summer, in my service at the City Hospital, I had sixteen cases, most of which were indigenous, against nine the previous summer. In looking up the records of the Children's Hospital, I find that seventy per cent. of all the cases, occurred in the last twenty-one months. That is altogether out of proportion to the growth of the hospital. I think it is also coming from a more extensive territory. Two or three years ago I looked up all the cases that had occurred at the City Hospital in the out-patient department for the five years preceding. The results were published by the Board of Health. The territory that was then apparently malarial was not so extensive as is shown by these cases reported to-night. The territory, of course, might be more extensive here, merely because the cases have been taken from three hospitals, instead of from one; but there is extension to the south, which would be most felt at the City Hospital, and further my personal recollection of cases is that the City Hospital is now drawing from wider limits. The cases I looked up came from three districts essentially, one being the same South Boston district Dr. Townsend has described. Those that came from the city proper came from two distinct districts. One of these was a region at the extreme South End and in Roxbury, not exactly, but pretty nearly, identical with the district overflowed a few years ago when Stony Brook got blocked up. The other region was between the Boston and Albany Railroad and Dover Street. In looking up the Children's Hospital cases for ten years, I found more cases from Brookline than would appear from this paper. The larger number of these last cases came from the Brookline side of Muddy Brook, close to the Boston lines.

In his paper on malaria, Dr. Holmes speaks of a case or cases in the epidemic of 1853 occurring on the shore of the South Cove. I mention this merely to strengthen Dr. Townsend's statement that the invasion started on the ground where it had existed a long time before.

I was interested in Dr. Stevens's statement that his cases had been quotidian. I think my early cases were more of them quotidian than tertian, last year the larger number were tertian. This prevalence of quotidian cases is, I think, not generally observed early in the invasion of new territory.

DR. BOWDITCH: In regard to the origin of the disease in the city within the last fifteen months, I saw a barber one day who told me that that morning his wife and child had been taken to the City Hospital with chills and fever. He was living in the upper floor of an apartment house on a street near Huntington Avenue. The cases I have seen in my connection with the Carney and City Hospital, have chiefly come from the region of South Boston. As to the treatment Dr. Sabine spoke of, carrying out Dr. Clark's method of giving large doses at first, and then smaller doses, will he tell us the doses?

DR. SABINE: Ten grains; then two grain doses.

DR. BOWDITCH: In my experience the cases have not been very severe ones, and yet perfectly marked; and in the majority of cases I have found that ten to fifteen grains has been sufficient, given five or six hours before the chill was expected. I have heard of others giving very much larger doses at the very outset. It is interesting to recall the paper of Crudeli, the Italian investigator, and his remarks upon treatment in a paper before the Copenhagen International Congress. He investigated the methods which the common people have of treating malarial fevers, and found that they use lemons frequently, the rind and the juice as well; and he instituted that in his own treatment with good effect, in addition to quinine, afterwards giving Fowler's solution.

DR. MASON: These interesting researches of Dr. Townsend are a valuable addition to our knowledge of this subject, of which the literature is now fairly complete for Massachusetts, in the classic essay of Dr. Holmes, and the reports to the Board of Health, by Dr. Adams of Pittsfield, Dr. Adams of Framingham, and, later, Dr. Cook of Natick. My own experience in the matter, as far as indigenous cases go, is negative; that is, during a long service at the City Hospital I have not seen a native case. A good many cases come in; but always, in my experience, the disease is to be traced to some outside source. That may be due perhaps to the fact that the months in the year during which I am on service are not those in which this disease seems to have occurred in Boston. A considerable number of the intermittent cases are Italians; and Italy, being the most malarial country in Europe, I have thought usually that these immigrants brought the disease with them, although it has not always been possible to substantiate that. I have been watching for such cases for the last five years and have not yet found one. The same is true with regard to the neighborhood where I live, the Back Bay, and it seems that no cases have presented themselves at the hospitals from that quarter. That might be accounted for by the fact that the people are away during the summer months. Brighton, which also borders on the Charles River, seems to be free from the disease.

DR. TOWNSEND: There were several cases from Brighton.

DR. MASON: If malaria is following the course of the rivers, as seems to be the fact, there must be some reason why so few cases have presented themselves on the borders of the Charles River Basin in Boston. Perhaps that may be due to the fact that the tide flows a long distance up the river, as I believe that malaria is less prevalent on the seaboard than in the marshy inland districts, as in the neighborhood of Fresh Pond, Framingham and elsewhere.

The experience of some of my colleagues at the hospital has been different. They have met with indigenous cases. There is a class of cases which Dr. Whittier described a few years ago, typhoid with chills, which he thought were due to a malarial element. Chills occurring in typhoid are not very infrequent, but periodicity is rare; and they disappear during convalescence, so far as my own experience goes. The connection between malaria and typhoid was studied by Dr. Adams of Pittsfield and stated to be this: that, as the malarial fever developed in that district, typical typhoid became less prevalent; and when the malaria disappeared, as it did practically in a few years, atypical typhoid reappeared. I do not know whether that has been the case in Natick and the towns referred to or not. It seems to me also that in Boston the constant tearing up of the streets for drains and pavements may have some bearing on the prevalence of malaria, as was stated by one of the gentlemen who has spoken. The matter of season is also important. The cessation of these indigenous attacks during the winter months, or the infrequency of them, is interesting, although Dr. Cook, of Natick, stated that he had met with a number of cases in the cold weather, and related one especially as beginning in the month of January when the temperature was in the neighborhood of zero.

Of dumb ague, which Dr. Sabine referred to, I have met with one case, in a gentleman who contracted it in the country. He had no distinct chills, but a tertian fever, with profuse sweating, which was controlled by quinine. As to the administration of quinine, one or two good doses have been sufficient. I have generally allowed the disease to run on a few days for the diagnosis, in the meantime administering a cathartic or laxative, and after the second chill treating with quinine, giving a dose very early in the morning, the chills almost always occurring in the forenoon. But as to the form of cathartic, I would like to ask if there is any special virtue in calomel. I have used generally epsom salts, and suppose it answers the same purpose.

Dr. Williams: I was unfortunate in not hearing the whole of the paper, but I should like to say a word about the treatment, especially as regards some of the cases in my service at the City Hospital last summer. It is said that the parasite is more susceptible if taken at a certain period of its growth: and in a few cases (fifteen) in my service I tried giving the quinine in one dose only at the time when the parasite is thought to be most susceptible, and that succeeded perfectly in all cases, with one exception. Probably there was in that case a double crop of parasites, so that a second dose was needed. It is necessary to give another dose after a week as well as on the fifteenth and perhaps twenty-first day.

As regards the action of citric acid or lemon-juice, possibly that may make the quinine rather more soluble.

As regards the use of a cathartic, while sitting here, it has occurred to me that very likely the cathartic promotes the action of quinine because it withdraws a certain amount of water from the blood, and thus makes the proportion of quinine in the blood larger, that is to say, the percentage of quinine in the blood with the same dose before a cathartic and after a cathartic would be larger in the second instance. In some doubtful cases the use of the microscope would reveal the presence of the plasmodium, and this makes the diagnosis perfectly clear and easy. It seems to me it is an advantage to give as little quinine as we can, and to avoid giving it continuously for a long period of time, especially as it may have some deleterious action on the ears, as Dr. Green has shown in a paper published some years ago.

Dr. Cutts: I live in Brookline, on the banks of Muddy River; and about four years ago I saw some indigenous cases that occurred there, although on the Boston side. Two years ago the marsh was being dug up for a park, and then I had quite a number of cases of malaria; but in my own experience they were cases that had had the disease previously, not indigenous cases. These people had been living in a neighborhood free from it; and until this mud was disturbed, they had been free, but then the malaria cropped out. I suffered from what might be called a dumb ague. I did not have exactly the chills nor the very high fever, but a constant headache and general feeling of debility followed by the malarial cachexia. I think that we are apt to count a little too much on the so-called chill stage in malaria. There are various degrees of that, a point to be remembered, as the disease is coming upon us now. The chill sometimes plays a very unimportant part. Then comes fever; and often the perspiring stage also is not very well marked. I think any one who sees such cases for the first time would be a little doubtful about their being malaria. With regard to treatment during defervescence of the fever, or just as the perspiration breaks out, it is my custom to give a large dose of quinine; and if it is the tertian type, I keep up small doses during the interval to maintain cinchonism, and then again a large dose seven hours before the expected chill. As to lemons, mentioned by Dr. Williams, I have used a decoction of lemon, a whole lemon being cut up and made into lemonade with hot water. Not only the juice, but the essential oil of the skin seems to be effective, and that has been very successful in cases where a species of dumb ague exists. Quinine will not always cure these. There seems to be no ground exempt from malaria. It follows water-courses mainly, but perfectly dry ground will reproduce it. I have known it to follow digging up dry ground for a railroad track.

Dr. Buckingham: I should like to ask whether there is any periodicity to those cases which occurred without a chill.

Dr. Cutts: Yes, variable, very often tertian. The chill is lacking, or not marked.

Dr. John Homans, 2nd: I should like to add my testimony as to the effect of excavations or disturbances of the earth's surface in the causation of malaria, and also of the occurrence of malaria on the Back Bay. In the autumn following the summer in which Marlborough Street was torn up to lay horse-railroad tracks, I had under treatment two cases of distinct malaria on this street, the diagnosis being without doubt, and sustained by the fact that quinine broke up the chills. One of these cases was that of a boy of nineteen, who had spent his life in Boston, and during the summer preceding had been in town. The other was in a man over fifty who had malaria during the war, but had been in town during the whole of the summer when the street was torn up past his door. He had not had malaria since the war until that year; so that, notwithstanding that this is new-made land, it seems to me almost certain that those two cases resulted from the disturbance of the earth's surface. This condition also has been noticed in Memphis, where there has been a report made of an outbreak of malarial fever following the tearing up of the streets merely for the purpose of laying a horse-car track as on Marlborough Street.

Dr. Sears: When Dr. Townsend asked me to give my experience at the Carney Hospital during the last summer, I told him that I thought I had had a good many cases, but found in looking over the records that there were but few of marked recurrent chills. Being unexpected, they had made a greater impression upon me than their number would seem to warrant. These few do not include any atypical cases where the probability of a malarial influence was strong, nor do they include all whom I treated, for some of them came in as delegates from some malarial district, with instructions to find out how to treat chills and to get medicine enough to go around at home. They came from Newton Lower Falls, West Newton, Waverly and Saugus, and one case from Tremont Street, on the hill opposite the Mission Church. None came from South Boston, and I have never happened to see a case which originated in Boston. When I was dispensary physician for the West End District, I used to hear quite frequently of cases in the practice of other men in the region which Dr. Townsend has pointed out, just north of the Massachusetts Hospital; and I saw a few there then, and have since seen a few both there and on the banks of the Charles River Basin further to the south; but on investigation they all proved to have been out of town within a short time. There seems to be no question that cases may originate in Boston, but I think they should be closely scrutinized before this is considered proved in any particular instance. With the experience of our street-car lines and the cheap fares both on them and the railroads, many people spend their Sundays or pleasant afternoons or evenings out of town during the summer, a considerable contingent seeking the upper valley of the Charles. I do not know how long the exposure should be, but I should think that would be enough if the person was susceptible. All the cases were very amenable to treatment, none of them having a chill after quinine was given. About half the cases had remarkably enlarged spleens, and in two it protruded well below the ribs.

Dr. Stevens: I should like to know if any gentleman has knowledge of the appearance of malaria in towns on the north side of the city. The south and west sides seem to be the location where malaria has been prominent. I have made inquiry in Winchester and Somerville and that section on the north side of Boston, and, so far as I can learn, there has not been very much. I believe it is spreading out in that direction. There has been a horse-railroad built recently from Medford to Winchester, and from Medford running down to Saugus, within a year or two. So far as I know, malaria has not appeared in towns on the north side of Boston in anything like the number of cases that it has in towns to the south and west. I should like to say also that in Cambridge, so far as I can learn, along the banks of the Charles River there have been very few cases indeed. Most of the cases have been along the marshes and about Fresh Pond and near the high ground. I live on the highest part of Cambridge, and a number of my neighbors have had an attack of intermittent. My hostler, who lives on the lower part of my lot, had an attack last year and again this summer. In regard to treatment, I would like to say one word, that we certainly see a class of cases in Cambridge, which, if they are not dumb ague, we do not know what they are. They get well with antimalarial treatment; and one remedy I have used very much is Warburg's Tincture, the principal things in it being quinine and aloes. This seems to relieve those indefinite cases where quinine alone does not relieve. I believe it is the cathartic added to the quinine that does the good.

Dr. Allen: I saw a case on Marlborough Street last summer in which the symptoms were distinctly intermittent. It was a servant girl who had always lived in Boston since she came from Ireland a few years ago. About two weeks before she was taken sick she spent part of one day in Natick. There was no very distinct chill but there was high fever and intense headache, followed by sweating, coming on about the same hour every other day. The symptoms disappeared rapidly under treatment with quinine.

Dr. F. C. Shattuck: I am sure I can speak for the Society as well as for myself in expressing thanks to the gentlemen who have taken part in the discussion. It seems to me the discussion this evening has brought out two very important points; in the first place, that malaria in all probability does originate within the city limits. I think we have got to face that fact. In the second place, a fact of perhaps even more importance, that the remittent type has appeared amongst us, and apparently for the first time within this year. As long as we had pure intermittents, which we have had up to this time, there was very little difficulty in diagnosis or treatment. With regard to treatment, I have been struck by cases that have come into my wards at the hospital with clear diagnosis of intermittent fever, generally of the tertian type, and history of rigors recurring at regular intervals. In many instances the chills have failed to recur, the patient being simply put to bed. It was a time when I was especially interested in the plasmodium, and I purposely gave no medicine; and then they would not have any chill, showing how mild the infection was. The remittent cases are those in which there is danger of confusion with typhoid fever. I recently met a gentleman out of town who told me that in three cases he had made the diagnosis of typhoid fever on account of the continued type of the fever, and had been obliged to alter his diagnosis because the fever promptly disappeared under the use of quinine. It is in these remittent cases especially that the search for, and the discovery of the plasmodium is of the greatest importance. If we can go from the intermittent to the remittent type, why may we not in the course of a few years go from the remittent to the pernicious? These pernicious cases originate now as far north as Philadelphia and its neighborhood, and we here now have a more virulent infection than ever before. In pernicious cases early cinchonizing is of the utmost importance for saving life, so that in doubtful cases search for the plasmodium should be made.

Dr. Stevens: We have one thing to encourage us, that from the experience of other localities like the western part of Massachusetts, intermittent fever disappears after a time. There seems to be less intermittent fever in Ashland and Framingham and that vicinity than ten years ago, so that we may be encouraged to think that it will disappear in this vicinity after a time.

Dr. Rogers: In anticipation that we may have what the chairman predicts, the gentlemen will see the necessity of using a cathartic as a preliminary that quinine may obtain its full effect. The objection to salts is that they won't stay, but calomel generally does.

Dr. **Mason**: I don't remember meeting with that difficulty. I think that an ounce of a fifty per cent. solution of salts will usually be retained.

Dr. Rogers: I was alluding to intermittent with great irritability of the stomach.

Dr. Townsend: As to difficulty of diagnosis, I had a case this summer, of a patient who had been staying in Concord, where she had an attack of pain and vomiting the day before she came to Boston. I ordered bismuth, thinking it was some slight gastric disturbance. The next day she sent for me, and I found her in severe pain in the abdomen, necessitating large doses of morphine. I confess I did not think of intermittent fever, but thought of appendicitis, gallstones, etc. The next day she was better. The day after she had an attack of pain without vomiting. There was no chill, but there was some rise of temperature. I thought of intermittent fever then, and gave quinine, which did not stop the next paroxysm, which came in the form of a chill. After that, the trouble was entirely stopped. I should like to ask one point that has puzzled me: how long should quinine be continued? It stops the chills very soon and the patient gets well, but I do not know exactly how long it should be continued to prevent relapse or avoid its coming again.

Dr. Stevens: My custom has been to give quinine in divided doses. I don't believe it makes much difference how it is given if you get large enough doses early enough. I have seen a great many relapses where the intermittence had stopped, and in two or three weeks they came down again. I give quinine until I go by one or two days, then I feel pretty certain that the patient is not going to have a return of the malaria. If they live in malarial districts, they get two grains three or four times a day for two or three weeks.

Dr. Shattuck: I believe some, on the seventh, fourteenth and twenty-first days, give doses again, because at these times the chills are more apt to recur.

Dr. Williams: In the cases treated this summer, I gave one dose, and then on the seventh day another, and on the fifteenth another, and on the twenty-second another, of course, the patients did not remain in the hospital during all of this time.

The report of the committee appointed to consider

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was submitted by its chairman, Dr. J. C. White, and in accordance with a vote of the Society, it was acted upon as a whole and unanimously accepted.

Yellow Fever.—Goes, in a communication to the third Brazilian Medical Congress, after criticising the ordinary methods used for the treatment of yellow fever, advocated the quick elimination of the poison from the system by continuous and rapid discharge of secretions through the intestines, kidneys and the skin carried out for three or four days. He gives a purging dose of calomel followed by castor-oil, keeping up the intestinal discharge two or three days. He also gives jaborandi with aconite, and places hot-water bottles in the bed. As a diuretic he gives large quantities of cracked ice and cold-water clysters.

THE NEW YORK NEUROLOGICAL SOCIETY.

Stated meeting, held at the New York Academy of Medicine on Tuesday evening, November 1, 1892.

TRIGEMINAL NEURALGIA.

Dr. M. Allen Starr presented two teeth extracted from the jaw of a patient who suffered from trigeminal neuralgia. There was marked exostosis of the roots of the teeth, and their extraction resulted in a complete cure of the neuralgia.

A CASE OF SPASMODIC WRY-NECK.

Dr. J. A. Booth presented a case of spasmodic wry-neck. The patient was a married woman, twenty-six years old. General health fair up to the date of the present trouble. No history of rheumatism or malaria. During the early part of last May the patient had a miscarriage, and was quite weak after this for some time. Menses have not appeared since the 12th of June, and she is now in the fourth month of pregnancy. Present trouble appeared in June, and commenced with severe pain in back of head and a spasmodic turning of the head over left shoulder. The pain gradually disappeared, but the other conditions grew worse. There is a more or less tonic contraction of the right sterno-mastoid and trapezius muscles. Examination fails to reveal any other nervous lesion. Right sterno-mastoid very much hypertrophied. Treatment thus far has consisted of daily hypodermic injections of atropia sulphate, according to the plan advised by Dr. Leszynsky. The patient has only been under observation for a few days, and Dr. Booth said he has not yet seen any improvement in her condition.

Dr. Leszynsky said that, in a case very similar to the one reported by Dr. Booth, he gave the atropine injections and the patient got well. In that case he carried up the injections to one-sixth of a grain before marked improvement followed. The patient was kept under continual observation, and the doses were rapidly increased.

Dr. G. M. Hammond said that the majority of these cases are very difficult to cure. He has seen a number which appeared to him to be psychical in their nature. Some of these patients seem to derive much benefit from the use of the fluid extract of conium, given in large doses.

Dr. Starr confirmed the statement of Dr. Hammond that conium has a decided effect in some of these cases. In one case that came under his observation the spasmodic action of the muscles was quieted by pressing upon a certain point on the back of the skull. Dr. Shaffer devised a very ingenious mechanical contrivance, by means of which the patient, by a movement of the arm, could bring pressure to bear on this point on the skull, and at the end of six months he was perfectly well. This case appeared to be psychical in its nature, as suggested by Dr. Hammond. As far as atropia is concerned, Dr. Starr said he had employed it in one case, carrying the dose up as high as he dared, but no benefit followed.

Dr. E. D. Fisher said that the only thing he has found to be of any value in these cases is either some form of mechanical treatment, getting the parts into as comfortable a position as possible, or the galvanic current, which gives relief to some extent. Where these cases are acute, he believes there is a nervous element in them, and sometimes they do get well under these injections of atropia. Where they do not get well, he is rather inclined to try operative procedures. Operation, however, should be considered as a last resort.

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[1] See page 610 of the last number of the Journal.

A CASE OF HEMATOMYELIE.

Dr. Joseph Collins presented a case with the following history: Male, Irish, forty-seven years old. He had always been in fairly good health until eight or ten weeks ago. He was formerly employed in the English mines, working under compressed air. Ten weeks ago he suddenly lost the power of all parts of his body, excepting his head. He did not lose consciousness. He remained in this condition for four weeks, being unable to move his hands or his feet, or to do the least thing to help himself. At this time he also suffered greatly from pain, which he describes as a burning or scorching pain. At the end of the four weeks he was able to walk about a little. The right side of his body improved more rapidly than the left. At the time of the attack he also had some trouble with his sphincter muscles. At present only the vasomotor symptoms are left.

Dr. Leszynsky said he saw the patient presented by Dr. Collins, but did not examine him. From the history given, he could not agree with Dr. Collins's diagnosis. He has seen two or three cases of hæmorrhage into the cervical portion of the cord, and in those cases the paralysis came on suddenly, and the patients were left with some atrophy. The history in this case seemed to point to a multiple neuritis.

Dr. Fisher referred to the fact that men who work in places where there is considerable atmospheric pressure sometimes become affected with symptoms like those in Dr. Collins's case. He saw a man the other day, a diver by occupation, who claimed that not infrequently men in his class of work become paralyzed for four or five days or a week, and then recover. He had had two or three such attacks within the past twenty years.

Dr. G. M. Hammond presented a patient with the following history: Family history unimportant, with the exception that the man's father was a dipsomaniac. The patient himself was formerly a hard drinker. From the time of his marriage, eight years ago, he indulged excessively in sexual intercourse, usually performing the act daily. Contracted syphilis about twelve years ago. Early in 1891 he began to suffer from severe and continuous occipital headache; this pain afterwards left the back of his head and appeared in the forehead. In the fall of 1891 complete ptosis of the left eyelid suddenly developed. With the advent of the potosis the headache disappeared and has never returned. Has had no double vision, although the muscles of the orbit supplied by the third nerve were all paralyzed. The fourth and sixth nerves were not affected. The third nerve paralysis has been partially recovered from, but there is still slight ptosis and paresis of the superior and inferior recti muscles. Vision in the left eye gradually failed, and an opthalmoscopic examination reveals evidence of gray degeneration of the left optic nerve. In March, 1892, the man was suddenly taken with a peculiar affection of speech. There is no aphasia in the proper acceptation of that term. The patient can read and write, comprehends all that he sees and hears, and expresses his ideas and words in logical sequence. The peculiarity of speech consists in the explosive character with which the words are delivered, and the rapidity with which the sounds are uttered. One word follows another so closely that the full time is not given for the proper enunciation of each syllable. The words are therefore clipped, and the syllables are "jerked out" as if from a machine. This form of speech, Dr. Hammond said, differs entirely from stammering and from stuttering. The former is caused by a spastic spasm of the muscles of respiration, while stuttering is caused by mobile spasm of the lips and tongue. At the time his change of speech came on, he also had difficulty in walking; he walked like a drunken man, and this still persists to a certain extent. During the past eight months he has been strictly temperate. He was under treatment for several months, receiving as high as 135 drops of a saturated solution of potassium iodide three times daily, together with small doses of bichloride of mercury, but this did not improve his condition at all. Recently he has been troubled with insomnia, with disagreeable dreams and depression of spirits. As to diagnosis, Dr. Hammond said he did not think the change in the man's speech was due to any physical lesion; that we know of no physical condition that would bring about such a condition. He considered it a psychical condition, of an hysterical nature.

A STUDY OF SOME OF THE DRUGS USED IN FUNCTIONAL NERVOUS DISORDERS.

Dr. Arthur A. Boyer read a paper on this subject. He stated that in the treatment of functional nervous disorders, as in other fields, there is a great temptation to secure rapid and striking results, and that on this account there is a disposition to give secondary consideration to the means employed, and too often to forget the rigid scrutiny to which they should be subjected. There are two things that impress the student of therapeutics as applied to functional nervous disorders: first, the necessity for pushing familiar drugs to their physiological limits; second, the large number of new drugs reported as accomplishing startling results without a sequence of dangerous or unpleasant symptoms. It is not unreasonable to suspect that such reports are based on insufficient data, and that better acquaintance with these drugs will reveal elements no less dangerous because insidious.

The first drugs referred to by Dr. Boyer were those used in chorea, and foremost among these is arsenic. There is a large class of patients who have been taking moderately small doses of arsenic, and who bear characteristic marks of their treatment. The skin is pale, often sallow to the point of muddiness; the air is languid; the gait rather uncertain; the hands moist; flesh flabby; appetite poor; habit constipated; heart's action feeble, frequently accompanied by palpitation or irregularity; pulse soft; respiration shallow. Examination of the muscular system reveals a lack of tone. In general, the condition of the patient is what might be called below par. Dr. J. Hutchinson has in several of his monographs called attention to the harmful effects of long-continued use of the drug. The probable action of arsenic is two-fold: primarily, a depression of the spinal centres by reason of the poverty of the blood; in the second case, and to a much less degree, a reduction of the working power of the muscles by the direct effect of the drug.

The next drug to which the reader referred in his paper was chloral. The cases of chorea in which it has proven of most value are those of the acute and violent form, where an immediate cessation of spasm is requisite to the safety of the patient. The theory for its use was the fact that in sleep choreic movements usually cease. Chloral was quoted as a pure hypnotic. The large amount of chloral required in such and similar cases, however, to produce sleep, certainly creates a doubt in the mind whether the effect is produced through the hypnotic action of the drug, so much as by the profound depression of the brain and spinal centres and direct action of the muscles themselves. Dr. Boyer also referred to the use of the antipyretics, namely, antipyrine, phenacetine and exalgine, in chorea. He stated that these, as well as all other drugs that have won a reputation in the treatment of chorea, possess as their most prominent feature the power to cause a depression of sensation and motion to the point of paralysis; that in doses short of this effect, they are not of much value; and that when they are administered in doses sufficient to check choreic movements, other systemic effects, such as general depletion of the forces of the body, vascular dilatation and cardiac and respiratory depression attend their specific action.

Dr. Boyer next referred to the treatment of insomnia. The drugs that have proved most efficacious in producing sleep, he said, are chloral and sulphonal. The large number of persons suffering from insomnia who find their way to the specialist demonstrates only too frequently the failure of the hypnotics to accomplish what was expected of them. They comprise two classes: those who are taking chloral and sulphonal, yet cannot sleep: and those who sleep when they take the drug, but consult you for "extreme nervousness." These people have certain traits in common. The first thing that attracts your attention is the hard, set features; the fixed look; the dull, heavy eyes, often congested; the dusky pallor of the complexion; the expression of despair. The face never relaxes into a smile. The patient walks as if in a trance, and talks in an automatic manner. The mental conditions differ somewhat in chloral and sulphonal. In the former there is more excitement and irritability; in the latter, more despair. In some cases trembling is observed. Chloral has also a peculiar effect on the ocular muscles, disturbing their proper relations to each other. Daily contact with patients who have been taking chloral and sulphonal for insomnia, Dr. Boyer said, has forced upon him conclusions that go far from supporting the flattering opinions commonly expressed on the subject. A large number of patients who present themselves for treatment will be found to be suffering as much from the drugs they have been taking, as from the original disorder and an absolute removal of all drugs will serve, not only to elucidate the condition, but frequently also to give much relief to the sufferer.

Dr. C. A. Herter said he thought arsenic acts rather differently upon the nutrition of choreic patients than was expressed in Dr. Boyer's paper. In studying a good many grave cases of chorea, it was found that the quantity of uric acid excreted was very much increased. A peculiar reddish coloring matter was also found in the urine. In the course of treatment of chorea by arsenic, the uric acid was very much diminished, and the patients recovered. The antipyretics also reduce the excretion of uric acid, and they do so in doses that are far from being toxic. Dr. Herter thought that Dr. Boyer was rather too extreme in his condemnation of the drugs named.

Dr. George W. Jacoby said that he agreed with Dr. Boyer in so far that we should use the drugs mentioned by him with a certain amount of judgment. In regard to the statement made by Dr. Boyer that arsenic has been known to produce multiple neuritis, he would like to know how many cases of that disease have come under the observation of the members present caused by the medicinal doses of arsenic. He considered Dr. Boyer's paper too sweeping in its nature.

Dr. C. H. Brown said he considered arsenic one of the best remedies we have at our command. In chorea it is extremely useful, and he has never seen it do any harm. As regards chloral, it is a dangerous drug, and so is opium, but to say that they are not valuable in functional nervous diseases, is going very far indeed. Dr. Brown said he does not use chloral so much now, since we have sulphonal and chloralamid, but he still employs it occasionally and has never seen any harm follow. As regards the poisonous action of these drugs, he does not see the necessity of giving them in such large doses.

Dr. Starr said that he has been unfortunate enough to produce multiple neuritis in two cases with arsenic; during the period these cases were produced, however, he has been giving the drug quite continuously and thoroughly in 420 cases of chorea, so the proportion is small. He considered the warning continued in Dr. Boyer's paper as a timely one. We are too apt to overlook the effects of drugs, and give them as a matter of routine. Still, it seemed to him that many of the symptoms ascribed by Dr. Boyer to the arsenic were chiefly those of the chorea itself, and are due to the disturbed nutrition, the anæmia, etc., which underlie the choreic manifestations.

Dr. Collins said he was rather inclined to think that Dr. Boyer has not taken a pessimistic view of this subject, but that some of the members misunderstood the spirit of his paper. In Europe, particularly in Germany and England, where these synthetical drugs are much more largely employed than here, the proportion of cases in which injurious effects have followed their use is by no means small. Dr. Boyer has perhaps overrated the poisonous properties of some of the drugs, but his warning comes in good time.

Dr. Boyer, in closing the discussion, said that he was sorry to see that the general impression created by his paper was that he wished to advocate the withdrawal of all drugs from our practice. The purpose of the paper was rather to study the mode of action of certain drugs as applied to special disorders, and in the manner commonly employed in such cases, and to suggest a more careful examination into the action of some of the newer drugs. Dr. Herter, he said, is quite correct in his remarks concerning the decrease of uric acid after the administration of arsenic in small doses and for a short time. This point was covered in the first part of Dr. Boyer's paper where he referred to the tonic action of the drug in checking retrograde metamorphosis.

Replying to Dr. Starr's objection that the symptoms attributed to the drug might have been mistaken for the symptoms of the disease, Dr. Boyer said that his statements were the result of observations on cases in his practice, and were arrived at by the removal of the drug in question.

Dr. Leszynsky presented a patient with the following history: Female, single, aged eighteen. At the age of four years she fell to the pavement from a fourth-story window. Taken to Bellevue Hospital, where she remained for seven weeks. She was unconscious for two weeks following the fall. Since the time of the accident she has been weak on the right side, and until her eleventh year she was unable to grasp and hold objects with her right hand. Until her fourteenth year she suffered from epileptic attacks, from two to five daily. There was right heminæsthesia and slight hemiparesis on the same side. She states that she has occasional falling spells, and complains of deafness of the right ear. There is a large opening in the skull over the left parietal bone, extending to the median line.

Her present condition is as follows: The girl is well nourished and healthy looking. There is complete flaccid paralysis of the right upper extremity, and paresis of the right lower extremity. Faradic irritation normal. There is some evidence of right facial paresis. Absolute right heminæsthesia, involving face, cornea, tongue and mucous membrane. No marked atrophy in muscles. Knee-jerks and other reflexes normal. No spinal nor ovarian tenderness. Both pupils normal in size and reaction. Loss of taste on right side; the smell has not been tested. The hearing on that side is also much impaired.

Dr. Leszynsky said he employed copper plates over the right arm, leaving them on for forty-eight hours, but without any effect. The question arises in this case, he said, as to how many of these symptoms are organic and how many functional? The character of the paralysis on the right side would exclude the ordinary form of hemiplegia. The fact that there is evidence of facial paresis would show that it is organic to some extent. The later attacks she had were undoubtedly hysterical in character. The opening in the skull is really the most interesting feature in the case. As a matter of course, we would assume that she had been trephined, but such is not the case. It has been learned that no operation was done on the skull, and Dr. Abbe has confirmed this after a careful examination. The question arises whether this cavity is not due to bone absorption, due to obliteration of the nutrient artery at the time of the accident. Dr. Leszynsky, said, however, that he could find no mention in any work on anatomy of a nutrient artery to the parietal bone, although no doubt such an artery exists. The cavity may also have been due to a cyst, although there is no evidence of it. Dr. Leszynsky's diagnosis of the case was hysteria engrafted upon the results of injury to the brain.

DR. JACOBI said he had seen Dr. Leszynsky's patient a number of times. He had, however, obtained an entirely different history from her, according to which she had been subject to convulsions before she fell out of the window. He supposed at that time it was a case of infantile convulsions, and that the other symptoms were due to hysteria. The cavity in the skull, he thought, was due to a cystic growth, which had produced a wasting of the upper part of the bone.

DR. C. L. DANA said he had also seen the patient, but had never made a positive diagnosis, on account of the unreliability of the girl's early history. He thought Dr. Leszynsky deserved a good deal of credit for going into the case so thoroughly, and he considered his diagnosis, in which Dr. Jacobi also concurred, to be correct.

THE NERVOUS ORIGIN OF JAUNDICE.

DR. A. D. ROCKWELL read a paper on this subject. He said it is a well-known fact that disturbance of the brain, both organic and functional, may very seriously interfere with the functional activity of distant organs. A cerebral disturbance may be the direct causative factor of very persistent derangements of the sexual apparatus; the bladder, intestines, stomach and heart may also be disordered by diseases of the central nervous system, as well as the kidney and the liver. So closely and so strangely are the vascular and the general nervous system related to each other, that their pathological conditions are often inseparably connected. The nervous system has an alliance so close with the functional activity of the secretory and excretory glands of the body, that emotional disturbances, according to their character, act as depressents or excitants of the functional life of these organs. Some of the more common of these effects are every day familiar facts, as when the flow of tears is excited through grief, or the secretion of saliva and gastric juice through the smell of food. In the same manner as the superficial glands are easily influenced, so in all probability are the blood-making or ductless glands regulated and controlled by the organic nervous system. Dr. Murchison, to whom the world is so much indebted for enlightenment on this subject, asserted that not only was the secretion of bile interfered with by prolonged mental anxiety, worry, and incessant mental exertion, but that the principles of sanguification and blood change, in which the liver takes part, were frequently deranged from these same causes. He states that acute atrophy, in which the secreting cells are rapidly disintegrated, and the functions of the organ arrested, appears in many instances to have a purely nervous origin; and very often the first symptoms of the disease have occurred immediately after a severe fright, or an outburst of passion in a person previously healthy. An impression made upon the brain appears to be reflected to the liver and deranges its nutrition. Even cancer of the liver appears sometimes to result from the functional derangement induced in the first instance by mental trouble.

DR. BUDD, another keen observer, wrote that mental anxiety or trouble seems to have great influence on the production of gall-stones, or at least of biliary gravel.

DR. ROCKWELL said that he has had occasion to see and treat a considerable number of cases of jaundice dependent upon a great variety of cases, and he has been impressed with the frequent occurrence of cases due to deranged innervation interfering with the normal metamorphosis of the bile. According to his experience, there is little to differentiate in the diagnosis between jaundice, the result of purely nervous agencies, and where it results from the various other non-mechanical causes, unless it is the more sudden onset of the discoloration in the former class of cases. A thorough history of the case will, however, generally enable us to determine whether the exciting cause is of a nervous or a non-nervous character. Dr. Rockwell then gave the history of three interesting cases of jaundice of distinctly neurotic origin coming under his own observation. In conclusion, he referred to the striking similarity of symptoms of neurasthenia with some of the manifestations of lithæmia, and mentioned the more common points of differentiation between those two conditions.

DR. HERTER said he was much interested in Dr. Rockwell's paper. An explanation had occurred to him regarding the intimate relations between certain nervous conditions and disorders of the liver: in cases where jaundice follows a mental shock there may be a general relaxation of the blood-vessels throughout the body, and especially in the liver. In hysterical and neurasthenic cases we can, by hypnotic suggestion, produce local conditions which depend upon a great dilatation of the vessels. If this does happen in the liver, it lowers the arterial tension in those vessels, and thus may permit the flow of bile into the blood-vessels. Normally, the pressure is greater in the small blood-vessels than in the bile-ducts. When this order of things is reversed, however, the bile is taken up by the blood and jaundice will result.

Dr. William D. Granger related a case in which jaundice was associated with decided mental disorder. The question at that time was whether the mental disturbance might not, in a measure, be due to the jaundice. The question was answered, however, by the patient's recovering from this attack and having a subsequent attack of mental trouble without any disorder of the liver.

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Recent Literature.

The Law of Public Health and Safety, and the Powers and Duties of Boards of Health. By Leroy Parker, Esq; formerly President of the Michigan State Board of Health, and Robert H. Worthington, of the New York Bar. Pp. 471. Albany, N. Y.: M. Benber, 1892.

The highest welfare of the State is subserved by protecting the life and health of its citizens by laws which will compel the ignorant, the selfish, the careless and the vicious, to so regulate their lives and use their property, as not to be a source of danger to others. The State, therefore, has the right to enact such laws as shall best accomplish this purpose, even if their effect is to occasionally interfere with individual freedom and the untrammelled enjoyment of property.

This volume will be found of great value to the different local boards of health and other sanitary officials, since, up to this time, no work treating solely of the laws relating to public health and safety has been published in the United States.

The object of this book is to afford a safe guide to health officers in the administration of the duties of their office; to physicians, from whom certain observances in the interest of public health are required; and to legal practitioners, as an aid in determining what the law is in any given case which may be under consideration, and for which their counsel is sought.

A Treatise on Hygiene and Public Health. Edited by Thomas Stevenson, M.D., F.R.C.P., London, and Shirley F. Murphy, Medical Officer of Health, of London. Vol. I, pp. 1013. Philadelphia: P. Blakiston, Son & Co. 1892.

This volume consists of a treatise containing papers upon the different subjects pertaining to hygiene and public health, by various English authors selected in consequence of their expert knowledge upon the different subjects presented.

The editors have been fortunate in securing for this purpose the services of writers whose names are the best guarantee of the value of their contributions. Each author is separately responsible for the views which he presents, the work of the editors being particularly directed to ensuring a convenient arrangement of the subjects.

In the selection of authors, it was decided not to limit the choice to members of the medical profession. While the subject of Air is treated by a physician, that of Ventilation is entrusted to a physicist; Climate is discussed by a physician, and Dwellings by architects; and a surgeon contributes the paper on Hospital Hygiene.

The topics presented are as follows: ' Air," by Dr. J. Lane Notter, Professor of Military Hygiene at the Army Medical School; "Warming and Ventilation," by W. N. Shaw, F.R.S., Lectures on Experimental Physics at Cambridge; "Meteorology," by G. J. Symons, Secretary of Royal Meteorological Society; "Influence of Climate on Health," by C. T. Williams, M.D.; "Water," by Thomas Stevenson, M.D.; "The Influence of Soil on Health," by S. M. Copeman, M. A., M.D.; "Food," by Sidney Martin, M.D.; "The Inspection of Meat," by E. W. Hope, M.D.; "Clothing," Geo. V. Poore, M.D.; "Physical Education," by Fred'k Treves, F.R.C.S.; "Baths," by W. Hale White, M.D.; "The Dwelling," by P. G Smith, F.R.I.B.A., and K. D. Young, F.R.I.B.A.; "Hospital Hygiene," by H. G. Howse, M.S.; "The Disposal of Refuse," by W. H. Corfield, M.A., M.D., and Louis C. Parkes, M.D.; "Offensive and Noxious Trades," by Thomas W. Hiene, M.D.; "Slaughter-Houses and their Administrations," by E. W. Hope, M.D.

The different topics are fully and intelligently treated, especially those which relate to the subjects of Ventilation, Water, Soil, Food, Physicial Education, the Dwelling, and the Disposal of Refuse. The work is fully illustrated with plates, diagrams and woodcuts, and pains appear to have been taken to bring the information upon each topic up to date.

The following comment is worthy of note in the article upon water:

For the past twenty years the well-known typhoid-fever epedemic of Lausen in Switzerland has been quoted as an example of the passage of typhoid infection through the soil for a very long distance (in this instance a mile or more). Recent experiments, especially those of the State Board of Health at Lawrence. Mass., would appear to discredit the capacity of soils to transmit typhoid germs through long distances in the soil.

Dr. Stevenson, in this volume, makes the following just comment upon the Lausen case: "It appears to the writer, however, that the experiment, (tried at Lausen, with salt and meal,) in the face of the previously observed turbidity of the fountains whilst irrigation was going on in the Fürler Valley, is not conclusive against the possibility of the water finding its way from Fürlenthal to Lausen by natural conduits."

Mrs. Selby. — Doctah, de chile dun gone swaller 'r pint ob ink.

Doctor. — Hab yo' dun ennyding fo' de relief ob 'im?

Mrs. Selby. — I'se dun made 'im eat free sheets ob blottin' paper, Doctah. Was dat rite? — *Brooklyn Life.*

Careful dissection of the bodies of humming-birds shows that their natural food is not insects but honey.

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ANNUS MEDICUS, MDCCCXCII.

This year, like its predecessor, does not offer very much material for an annus medicus. The most serious epidemic of cholera which has occurred for some years, has invaded parts of Europe and threatened the United States. Good original work has been done, especially in bacteriology and surgery, although most of it consisted in proving and disproving work of previous years. The subjects of epidemic diseases and quarantine have been vigorously taken up in the United States, owing largely to the importation of several cases of typhus and the near approach of cholera.

EPIDEMICS.

In recent years, when cholera has reached Europe, it has generally come by the way of the Suez Canal. This was the case in the outbreak of 1890, in Spain. In 1891 no cases were reported in Europe. It had, however, come through the Red Sea ports into the Hedjaz, during religious ceremonies in Mecca, and had spread through Asia Minor. In the first of the year cases still occurred in different parts of Asia Minor, but by the middle of February it had disappeared from the neighborhood of Damascus and Beyrout, and existed only in one or two interior valleys. This year the religious pilgrimage to Mecca was not attended by cholera.

The epidemic of this year appeared in March, in the northwestern provinces of India. It is obligatory on every Hindoo to bathe in the Garges where it issues from the mountains. The dying Hindoo, also, is immersed in this stream, if it is possible to get him there, and this point is always considered a cholera focus. The water this year was very low, and the bathing-place was reduced to a pool. On March 22d the first case occurred at Hurdwar, and on the 25th the fair was closed by the police authorities. The disease was spread by returning pilgrims through the Punjaub, and reached Delhi on March 30th. From here it spread through the Cashmere Valley, and reached Afghanistan on April 15th, and it reached Persia in May. In June it crossed the Caspian Sea, and in July spread among the population of Asiatic Russia. By the middle of the month it reached the Caucasus and crossed into European Russia. It was at this time especially virulent at Teheran and Astrakhan and in the Caucasus. It advanced steadily through Russia, reaching Moscow and St. Petersburg by the middle of July. Until this time no cases had been reported west of Russia except in Paris, and these cases in Paris were not a part of the invading epidemic. From April 5th up to July 25th about 160 deaths from a rapidly fatal diarrhœal affection had been reported in the neighborhood of Paris, and the character of the disease, although attributed to the use of Seine water, and manifesting itself in those quarters where that water is supplied for consumption, bore such a striking resemblance to Asiatic cholera, that its identity was during the whole summer a subject of dispute. This disease, which was popularly called cholerine, had existed as an endemic outbreak to a less extent in previous summers. In the autumn, after cases of undoubted Asiatic cholera had occurred in northern France, the attempt to distinguish between the two diseases was abandoned.

In regard to the origin of the cholera in Hamburg, Havre and Antwerp, nothing positive is known. The infection of Hamburg may have come by rail through Germany, with Russian immigrants on their way to America, or it may have come by sea from Russia or from India, all of these suppositions were discussed. The authorities of Hamburg discovered the true character of the disease on the 22d of August, and announced it on the 24th. It was found to exist in Havre and Antwerp within a few days of the same time. During the next week isolated cases made their appearance in many cities, the cases being almost all easily traced as imported from Hamburg. Several cases occurred in Berlin, some in other North German cities, some in different English seaport towns, all of the latter being in persons directly from Hamburg. Such isolated cases continued to occur during the first half of September, diminishing in frequency. In Hamburg the epidemic increased very rapidly and with a great mortality. Although the highest point in mortality was reached in the week ending September 3d, when 4,168 deaths, of which 3,710 were from cholera, were reported, making a death-rate of 340.8, nevertheless, for some time the decline was slow, but after the last week in September fell rapidly. In Havre the epidemic was not nearly so great, the number of cases a day about the first of September being from 25 to 100.

The extension of the epidemic crossed the Austrian frontier some weeks later, a few hundred cases being reported, especially in Austrian Poland. It appeared in Buda-Pesth early in November, and continued into December. In the whole Austrian Empire 1,000 cases and 500 deaths may be estimated as the number during the autumn. On November 1st, Hamburg was declared free from cholera, but in November four deaths occurred and in the last half of December a fresh outbreak occurred, about forty cases being reported up to the present time. The official statistics in October gave the number of cases as about 18,000 with 7,600 deaths. In Havre, the number of cases from July 15th to October 15th was given as 1,298, and that of the deaths 523. This includes a few cases which were later classed as cholera although occurring before the outbreak was recognized. During November a few cases were reported from different parts of France, 104 in Holland, 33 in Belgium, whereas in Germany there were none except the four in Hamburg. In Russia the epidemic was much more serious and persistent, many districts were revisited after the epidemic had apparently declined. After the 1st of November the disease as a whole was much less serious in the Empire, but the total number of cases reported remains considerable even up to the present time. The estimate of 300,000 deaths is commonly considered as less than the actual fact. The efforts of the sanitary authorities were much hampered by popular uprisings and in some cities serious riots occurred in consequence of the attempt to enforce sanitary regulations.

Cholera was imported into the New York quarantine directly from Hamburg. The first infected steamer to arrive, the *Normannia*, left Hamburg just before the official announcement of the existence of an epidemic. Within a week two more steamers, the *Moravia* and *Rugia*, and later the *Scandia*, reached New York thoroughly infected. The number of deaths at sea had been 63 and a still larger number were either suffering from the disease on arrival or came down with it shortly afterwards in quarantine. The number of passengers detained from this cause was very large, far beyond the capacity of the New York quarantine station. After keeping the cabin passengers, who with a few exceptions had been free from cholera, for several days upon the infected ships, a steamer was hired by private liberality to accommodate them, and Fire Island bought as a place of detention. The inadequacy of the quarantine station and the bungling of the whole matter may be understood by following the subject as it appeared from week to week in the Journal. A few cases, a dozen or more, with five deaths occurred in the city, their source is doubtful but is more probably due to contagion introduced by passengers from an earlier steamer which sailed from Hamburg on August 14th, than that it escaped from the quarantine.

At the opening of the year a pandemic of influenza was at its height. This pandemic was perhaps not as universal as that which existed two years previously, but was much more so than the outburst of the spring of 1891; in many places, however, the disease was more extensive and more fatal than upon its first appearance. This outbreak differed essentially from that of two years before in its distribution. At that time the epidemic started in Russia, and was from there distributed along the principal channels of communication to different parts of the world, whereas the epidemic of 1891–92 appeared to start from a number of foci. In some cities, as, for instance, Hamburg, Berlin, and St. Petersburg, it had already reached its height in December. In Great Britain and other parts of Europe, and in the United States, although beginning in December, or even November, it did not reach its height until somewhere between the first of the year and March. As a general rule, January was the month in which the greatest mortality was reported. The rate of mortality was influenced by the outbreak of influenza very differently in different cities and towns, often close to each other, varying from a slight rise to double or treble the usual rate. In New York State the mortality of January was greater than that of any month previously recorded, except April, 1891, which it nearly equalled. In Boston the mortality began to rise the first week in December, increasing steadily until the first week in January, when the total number of deaths recorded was 339, as against a normal average of 200. The mortality was, as usual, especially large among old persons, in Boston the number of persons over sixty years of age who died during this first week in January was 116, whereas the normal average is a little over 40. From this time the death-rate fell steadily until by the second week in February it had reached normal proportions. In February the pandemic had begun to subside in most places in Europe and America. In England, however, and to a certain extent in France and Belgium, it continued well into March, but by April could no longer be considered an epidemic. Interest was added to the disease early in the year by the discovery in Berlin of a micro-organism which has been regarded by some bacteriologists as the specific cause of the infection.

During the winter of 1891–92 large districts in Russia were severely afflicted with famine. In these districts typhus fever became very common, and in some places epidemic. A number of Russian Hebrews on their way to this country on board the French steamer *Massilia* were attacked with typhus while on the voyage. Of 717 steerage passengers, 250 were Russian Hebrews; and it was entirely among these that the disease was found. On arrival in New York on January 30th, eleven passengers were still ill, some of them with what was believed to be typhoid fever. The Russian refugees were permitted to land, and spread among the crowded quarters of New York and other cities. The existence of typhus fever in New York became known to the authorities on February 11th, and on the following day 58 cases of the disease were discovered. As far as possible, the passengers from the steamer were traced, and those with whom they had come in contact put under supervision. The sick were taken to islands in the harbor, where some of the attendants also became infected. Up to March 25th, there had been reported 194 cases with 29 deaths. During April occasional cases were found, and a few deaths occurred as a result of the same importation. Solitary cases were found at quarantine on steamers from Europe during the rest of the year. This is the worst outbreak which had occurred in New York for several years. In 1881 there was a similar epidemic, in which 160 deaths were reported. In 1882 there were 67; in 1884, 27; and since 1886 there have been but four deaths from typhus in the city. This outbreak, although, luckily, soon stopped, called public attention to the class of immigration which was flowing in, and also to quarantine matters at New York, an interest which was revived and increased by the subsequent cholera fright.

Small-pox cannot be said to have become epidemic during the year. A larger number of cases than usual occurred in the famine districts of Russia, in different parts of Great Britain and in other parts of Europe, and in Mexico and Canada. As a result, cases were introduced into the United States and reported from different localities, especially in the vicinity of the Lakes and Ohio basin. One case occurred in Boston, the first for two years.

During the whole year yellow-fever has been very prevalent in Brazil, especially at the port of Santos, from which a few cases have got as far as different quarantine stations of this country. At Vera Cruz, and, to a less extent, at a few other ports in Central America and the West Indies, the disease was prevalent during the summer months.

MEDICAL LEGISLATION.

But little important medical legislation has been accomplished in the United States during the past year. As usual, many bills on medical matters, some good and some bad, have failed to pass.

In Congress, a bill known as the Paddock Pure Food Bill was passed by the Senate, but defeated in the House, largely by the influence of the manufacturers of proprietary medicines and other preparations. The bill provided for a section in the Department of Agriculture whose duty should be to analyze foods and drugs and to regulate interstate trade of all such as were found adulterated or injurious.

In Massachusetts a law was passed regulating embalming, and one prohibiting women and minors from working in any factory more than fifty-eight hours in the week. A new law regulating baby-farming was passed in Massachusetts, which practically prohibits these institutions except such as are licensed and supervised by the State Board of Lunacy and Charity. Incidentally, the bill regulates also the care of foundlings and the adoption of infants.

In Maryland, a Medical-practice law was passed by the last Legislature. Two separate boards of medical examiners, corresponding to the so-called "schools" of medicine, are created to examine candidates and issue licenses to practise.

Among a variety of bills on medical subjects passed in New York, may be mentioned one providing for the establishment of a State institution for epileptics, one designed to suppress tuberculosis by the examination of the cattle of the State, one allowing judges to commit female inebriates to an institution specially erected for the purpose, and one which appears to be likely to embarrass the administration of the smaller hospitals, in that it requires a night watchman and an elaborate system of gongs in order to protect patients from fire.

In New Jersey a law was passed regulating the practice of midwifery, requiring an examination before the medical examiners, and registration.

In Rhode Island a law was passed similar to those in New York and Maine, requiring that any person who has charge of an infant shall give notice to a physician if the infant's eyes become inflamed.

The late Ohio Legislature appears to have distinguished itself by its bad medical legislation. A very moderate medical-practice bill was before it; but the opposition of itinerant doctors and other medical monstrosities was so great that the bill was defeated "amid roars of laughter." On the other hand, it appropriated $5,000 to test the efficacy of the Keeley cure. As an offset to this, it passed a law that any physician may ride on any freight train, at his own risk, by paying the full passenger fare.

The Supreme Court of Massachusetts has decided that a hotel keeper is under the same obligation to sell pure milk as are milk dealers in general. It has also sustained a verdict from a lower court founded on a decision, that, although it is negligent to ride upon the platform of a steam-car, and not negligent to ride upon the front platform of a horse-car, in the case of an electric-car it is negligent, the power of electricity approaching more nearly that of steam than horse.

In France the bill which has been under discussion for some time regulating the practice of medicine has been passed by the legislature, and will come into force in the course of a year. In order to practice in France, it will be necessary for foreigners who possess degrees, which may be considered sufficient guarantee of professional knowledge, to pass an examination in addition. The lower grade of practitioners known as *officiers de santé* is abolished. By the same law the notification of infectious diseases is made compulsory.

IMMIGRATION AND QUARANTINE.

The extent and the quality of immigration into the United States from different European countries has aroused attention during the past few years. Recently, partly on account of the persecution of the Jews in Russia, vast numbers of squalid people have been coming to this country. The whole number of immigrants was greater in 1891 than in 1890 by about 100,000, and nearly half of this increase was ascribed to Russia and Poland. The number from Russia alone during the last six months of 1891 was nearly 47,000, as against 21,000 in the corresponding months of 1890. From other districts also a large number of people who do not speak English, whose habits are dirty, and whose education differs essentially from that to which citizens of this country are accustomed, have been flocking to the United States, it was, therefore, a relief when the threatened invasion of cholera offered a pretext for limiting immigration. The President issued a proclamation which, although not legally binding, was concurred in by local health boards, that a quarantine of twenty days should be imposed upon all immigrants. This practically excluded steerage passengers who had no previous connection with this country, since it was manifestly unprofitable for the steamship companies to lay up their vessels for twenty days at a quarantine station. After all danger of the importation of cholera had ceased, the proclamation was still continued in force, nominally to prevent the importation of anything which might rekindle cholera in the spring; but this probably would not have been done except for the feeling against immigration in general. The whole subject is now under discussion by different political and non-political bodies and committees; and it is probable that during the coming year some restriction will be established.

The subject of the quarantine system, or lack of system, in the United States has aroused great interest and discussion. During the periods in which there is no danger of the importation of epidemic disease, the local quarantine arrangements (having nothing to do) appeared to be satisfactory; but the importation of typhus and the near approach of cholera have shown weaknesses and faults in present systems which demand relief and adjustment. The port of New York is to such an extent the receiving station for the country that a very large quarantine establishment in skeleton form, which can at any time be got in full working order, appears to be demanded. As the safety of the whole country depends upon this barrier, there is a natural feeling that neither the cost nor the administration should be left to local authorities, which may at any time by political accidents be inefficient. As important as a quarantine plant, is good judgment as to the necessity and methods of quarantine to make it efficient. It appears to be widely felt, and it has been recommended by the President and the Secretary of the Treasury, that the quarantine system of the country should be under control of the Federal Goverment, in order that responsibility may not be divided, that the burden may not fall upon one locality, and that a force could be created which could be massed at any point as occasion required.

MISCELLANY.

As the World's Fair is to be opened in Chicago during the coming year, the health of that city has been the subject of widespread interest. The large death-rate from typhoid fever during the past few years has excited remarks and called the attention of the authorities of the city to the water-supply, which is taken from the lake through a tunnel extending two miles from shore. The drainage of the city goes partly into the lake but principally into the Chicago River, which theoretically is supposed to carry it away from the lake. Practically, however, after rain-falls this river, instead of running away from, runs into the lake, discharging an enormous amount of sewage. To obviate the danger rising from this source, a tunnel has been constructed, running four miles from the shore, and works have been begun so that in the future the Chicago River shall at all times flow away from the lake towards the Mississippi Basin.

As well as in Chicago, in St. Louis, Philadelphia and other large American cities a faulty water-supply appears to have been the cause of out-breaks of typhoid fever. Many smaller towns in different parts of the country are in this respect proportionately even worse. The out-breaks in different towns in Massachusetts during the last few years have been carefully and systematically investigated by the State Board of Health; and under its supervision the study of the specific microörganism of typhoid and of the means of preventing the disease has resulted in valuable additions to practical sanitation.

Early in the year a conference of different maritime powers was held in Venice, for the purpose of establishing international sanitary control of the Suez Canal, in order to prevent, as far as possible, the introduction of cholera into Europe. The conference was not as harmonious as had been wished. Whether the present regulations are efficient can only be judged by the results; in the meantime, it has been pretty conclusively shown that this is not the only channel by which cholera can invade Europe.

The rapid advance which has been made in the last few years in the knowledge of microörganisms and their products has continued during the past year. A bacillus of influenza was demonstrated by Pfeiffer and Beck early in the year, and later the bacillus supposed to be pathogenic of measles by Canon. The production of artifical immunity by the products of bacterial growth has been the subject of active study as in the previous few years. On account of the presence of the epidemic of cholera the protection against this disease has received especial attention. Haffkine in the laboratory of Pasteur, Brieger and Wassermann in Berlin, have succeeded in rendering animals immune to the action of the comma-bacillus.

On the 15th of October Professor Billroth, in Vienna, celebrated the twenty-fifth aniversary of his appointment as professor, and the fortieth of his medical practice. Addresses were delivered, and paintings of Billroth performing different operations were presented; and, in honor of the event, the Emperor ordered that the degree of Master of Arts and Sciences should be given him.

The subject of vivisection has aroused widespread interest and discussion in England during the year. For some time the establishment of physiological laboratories and the study both of physiology and pathology has been much hampered in that country by the activity of anti-vivisection societies, which have managed to enroll among their members influential persons, and to have influenced legislation to a considerable extent. At the meeting of the Church Congress in the autumn, a long-contested discussion was held, in which, on the part of the anti-vivisectionists, the most prominent speakers were two bishops and a Miss Frances Cobbe, a lady who has devoted several years to promoting anti-vivisection doctrines. Upon the other side were Drs. Wilks and Ruffer and Prof. Victor Horsley. The clergy appear to have been divided. The anti-vivisectionists proved themselves to be influenced much more by sentiment than by either facts or logic. What the effect of this discussion will be upon public sentiment and legislation in Great Britain it is yet too early to judge.

Until this year the question of admitting women as members of the British Medical Association has always been decided in the negative. This year, however, when the question was brought up, there was but very little opposition to their admission, and the resolution admitting them was easily carried.

During the previous year a good deal was heard of the bichloride-of-gold cure for drunkenness. During the first part of the present year this public delusion apparently reached its full height, and has already begun to wane. Not satisfied with America, it was introduced into England, and just missed being endorsed by an important ecclesiastical body. As far as can be judged at present, its fall in public estimation appears to be as rapid as was its rise.

Among the disasters of the year was an unusually large number of steamship accidents, in which from one cause or another, ships, carrying many passengers, sank and many were drowned. In a hurricane on the Island of Mauritius in May, over one thousand persons were killed and much property destroyed. A storm and flood in Sardinia also destroyed much property and many lives. The Yellow River in China, which only three years ago acted in a similar manner, again overflowed its banks and flooded an enormous district, killing many thousands of people and rendering many more homeless and destitute.

MEDICAL CONGRESSES AND MEETINGS.

Among the more important meetings of Medical Congresses and Societies during the years were the following:

The Association of Military Surgeons of the National Guard of the United States, in St. Louis, April 19th; the American Pediatric Society, in Boston, May 12th; the Association of American Physicians, in Washington, May 24th, the Centennial celebration of the Connecticut Medical Society, in New Haven, May 25th; the American Surgical Association, in Boston, June 1st; the American Medical Association, in Detroit, June 7th; the American Academy of Medicine, in Detroit, June 6th; the Massachusetts Medical Society, in Boston, June 7th; the American Laryngological Association, in Boston, June 20th; the American Association of Andrology and Syphilology, in Richfield Springs, June 21st; the American Neurological Association, in New York, June 22d; the American Climatological Association, in Richfield Springs, June 23d; the American Otological Society, in New London, July 19th; the American Dermatological Association, in New London, September 13th; the American Gynecological Society, in Brooklyn, September 20th; The American Orthopedic Association, in New York, September 21st; the Mississippi Valley Medical Association, in Cincinnati, October 12th; the Southern Surgical and Gynecological Association, in Louisville, November 15th; the American Public Health Association, in the City of Mexico, November 29th.

The Society of the Red Cross held its fifth International Congress in Rome during the last week in April. The second meeting of the International Dermatological Congress was opened in Vienna on September 5th. The organization and first meeting of the International Congress of Gynecology and Obstetrics was opened in Brussels on September 14th. The Congress of Criminal Anthropology was held in Brussels on August 28th. The International Congress of Experimental Psychology was held in London on August 1st. The French Congress of Surgery was held in Paris, April 18th, and the German Surgical Society in Berlin, June 8th. The British Medical Association held its sixtieth annual meeting in Nottingham on July 26th. The German Congress of Internal Medicine was held in Leipzig, April 20th.

LECTURES.

In connection with established lectureships in the United States and Great Britain, the following lectures and orations were delivered:

The Cartwright Lectures, in Philadelphia, by Henry F. Osborne, Sc.D., on "Present Problems in Evolution and Heredity"; the Middleton-Goldsmith Lecture, in New York, by Francis P. Kinnicutt, M.D, on "New Outlooks in the Prophylaxis and Treatment of Tuberculosis"; the Shattuck Lecture, before the Massachusetts Medical Society, by J. F. Alleyne Adams, M.D., on "The Prevention of Disease in Massachusetts." In Great Britain, the Croonian Lectures, on "The Chemistry and Therapeutics of Uric-acid, Gravel, and Gout," by Sir Wm. Roberts, M.D., F.R.S.; the Bradshaw Lecture, on "The Signs of Acute Peritoneal Diseases," by Samuel Gee, M.D., F.R.C.P.; the Morton Lecture, on "The Etiology of Cancer," by G. Sims Woodhead, M.D.; the Milroy Lectures, on "The Physical and Mental Condition of School Children," by Francis Warner, M.D., F.R.C.P.; the Goulstonian Lectures, on "The Chemical Pathology of Diphtheria Compared with that of Anthrax, Infective Endocarditis, and Tetanus," by Sidney Martin, M.D., F.R.C.P.; the Hunterian Lectures, on "Certain Diseases of the Breast," by H. B.

Robinson, M.D., F.R.C.S.; also by Dr. Hughlings Jackson, F.R.S., on "Neurological Fragments"; the Lettsomian Lectures, by Prof. William Rose, M.B., F.R.C.S., on "The Surgical Treatment of Trigeminal Neuralgia"; the Cameron Lecture, by Professor Ferrier, on "Cerebral Localization in Relation to Therapeutics"; the Middlemore Lectures, by Dr. R. Saundby, on "The Retinal Changes in Bright's Disease and Diabetes"; the Cavendish Lecture, by Sir Charles Cameron, on "The Etiology of Typhoid Fever"; the Bradshaw Lecture, by Mr. Christopher Heath, on "Diseases of the Nose"; the Lumleian Lecture, by Dr. Pye-Smith, on "Certain Points in the Etiology of Disease."

NECROLOGY. — FOREIGN.

Sir William Aitken, professor of pathology in the Army Medical School at Netley, died in London, June 27.

Dr. Ludwig Bandl, previously professor of gynecology in Vienna and in Prague, died September 2.

Sir William Bowman, M.D., consulting surgeon to the Royal London Ophthalmic Hospital, the author of several works on the eye, died in London, March 29, aged seventy-five.

Ernest Wilhelm Brucke, professor of physiology and microscopic anatomy, in Vienna, died January 7, aged seventy-two.

Alfred Carpenter, M.R.C.S., a distinguished sanitarian, and the author of several works on different sanitary subjects, died in London, January 27, aged sixty-six.

H. Hubert de Change, M.D., inspector-general of the Medical Department of the Belgian Army, inventor of different surgical instruments, died early in March.

Frederick LeGros Clark, F.R.S., F.R.C.S., for many years surgeon at St. Thomas's Hospital, London, died July 19, aged eighty-one.

William Colles, M.D., F.R.C.S.I., Regius professor of surgery in the University of Dublin, died June 18, aged eighty-three.

Carl Credé, professor of obstetrics at the University of Leipzig, who had achieved a world-wide fame in obstetrics, his name being associated especially with a method of expressing the placenta, died March 14, aged seventy-two.

Cesare Federici, professor of clinical medicine at Florence, died May 29, aged fifty-four years.

Gregorio Fideli, of Rome, a distinguished medical authority and writer, died October 26, aged seventy-three.

August Wilhelm von Hofmann, professor of chemistry in Berlin, died May 5, aged seventy-four.

Alexander Keiller, M.D., F.R.C.P., etc., consulting physician of diseases of women at the Royal Infirmary, Edinburgh, died September 26, aged eighty-one.

Samuel Lane, F.R.C.S., formerly surgeon at St. Mary's Hospital, London, died August 2, aged ninety.

Alexander Lumnitzer, professor of surgery in the University of Buda Pesth, president of the Hungarian National Board of Health, died January 30, aged seventy.

Sir Morell Mackenzie, lecturer on diseases of the throat at the London Hospital, and author of standard works on the subject, died in London, February 3, aged fifty-four.

Sir George H. Macleod, M.D., F.R.S., F.R.C.S., etc., professor of surgery in Glasgow, died August 31, aged sixty-four.

Theodore Meynert, M.D., professor of mental and nervous diseases in the University of Vienna, died May 30, aged fifty-nine.

Eugene Montard-Martin, M.D., physician to the Hôtel Dieu, Paris, president of the Académie de Médecine in 1890, died in Paris, in the spring, aged seventy.

Hermann Nasse, professor of physiology at the University of Marburg, died in the early days of July, aged eighty-nine.

Sir William Owen, M.D., F.R.S., etc., for several years the leader in the study of comparative anatomy, died in London, December 18, aged eighty-eight.

Sir George Edward Paget, M.D., F.R.S., Regius professor of physics at Cambridge, formerly president of the British Medical Association and of the General Medical Council, died in London, January 29, aged eighty-two.

Alfred Richet, M.D., of Paris, formerly surgeon in the hospitals of Lourcine, St. Antoine, St. Louis and La Pitié, died December 31, 1891, aged seventy-five.

Heinrich Rosenthal, M.D., editor of the *Allgemeine Medicinische Central Zeitung*, died February 7, in Berlin, aged fifty-eight.

George Ross, M.D., professor of medicine and dean of the medical faculty of McGill University, Montreal, died November 1, aged forty-seven.

Jean Antoine Villemin, M.D., well known as a pathologist, especially by his work on tuberculosis, died in Paris, October 6, aged sixty-six.

NECROLOGY. — UNITED STATES.

D. Hayes Agnew, M.D., professor of surgery in the University of Pennsylvania, etc., the author of many works on surgery, died in Philadelphia, March 22, aged seventy-three.

Daniel Ayres, M.D., professor of surgery, emeritus in the Long Island College Hospital, died in Brooklyn, N. Y., January 18, aged seventy-one.

William R. Birdsall, M.D., professor of nervous and mental diseases in the Woman's Medical College, died in New York, June 7, aged forty.

Henry Ingersoll Bowditch, M.D., died in Boston, January 14, aged eighty-three.

Peter Bryce, M.D., superintendent of the Alabama Lunatic Asylum at Tuscaloosa, died August 14.

Charles E. Delavergne, M.D., lecturer in the practice of medicine in the Long Island College Hospital, died in Brooklyn, June 4, aged thirty-five.

John H. Douglas, M.D., formerly of New York, well known in the Sanitary Commission during the war, physician to General Grant during his last illness, died in Washington, October 2, aged sixty-eight.

Pliny Earle, M.D., superintendent of the State Hospital for the insane in Northampton, Mass., died in Northampton, May 7, aged eighty-three.

Henry F. Formad, M.D., demonstrator of pathology and lecturer on morbid anatomy at the University of Pennsylvania, died June 5, at the age of forty-five.

George Fuller Gill, M.D., professor of diseases of children in the St. Louis Medical College, died June 4, aged forty-nine.

Franklin Henry Hooper, M.D., died in Boston, November 22, aged forty-two.

Abraham Reeves Jackson, M.D., professor of gynecology in the College of Physicians, died in Chicago, November 12, aged sixty-five.

J. Suydam Knox. M.D., professor of obstetrics and diseases of children in the Rush Medical College, died in Chicago, June 28.

James Rosebrugh Leaming, M.D., professor of diseases of the chest, emeritus in the Women's Medical College and the New York Policlinic, died in New York, December 5, aged seventy-two.

Charles Martin, M.D., medical director, United States Navy, retired, died in New York, January 14.

Henry O. Mayo, M.D., medical director, United States Navy, retired, died in New York, January 1, aged seventy-two.

Benjamin W. McCready, M.D., formerly professor of materia medica and therapeutics in Bellevue Hospital College, died in New York, August 10, aged sixty-eight.

John S. Newberry, M.D., professor of geology in Columbia College, New York, died in New Haven, Conn., December 7, aged seventy.

John J. Reese, M.D., of Philadelphia, for some time professor of medical jurisprudence and toxicology in the University of Pennsylvania, died September 4, aged seventy-four.

Thomas G. Richardson, M.D., professor of anatomy in the University of Louisiana, died in New Orleans, May 26, aged sixty-five.

Howard Smith, M.D., of New Orleans, surgeon in the Confederate Army, having control of the entire medical service of the trans-Mississippi department, died January 30, aged sixty-nine.

Lewis H. Steiner, M.D., of Baltimore, during the war chief inspector of the United States Sanitary Commission in the Army of the Potomac, died February 18, aged sixty-four.

Thomas F. Wood, M.D., secretary of the North Carolina Board of Health, died in Wilmington, August 22.

NECROLOGY. — MASSACHUSETTS MEDICAL SOCIETY.

James Ayer, M.D., of Boston, died December 31, 1891, aged seventy-six.

Henry Ingersoll Bowditch, M.D., of Boston, died January 14, aged eighty-three.

Sir William Bowman, Bart., M.D., etc. (honorary), of London, England, died March 27, aged seventy-five.

George Brown, M.D., of Barre, died May 9, aged sixty-eight.

James Raymond Brown, M.D., of Springfield, died January 10, aged sixty-eight.

Cœleb Burnham, M.D., of Lynn, died February 18, aged fifty-six.

Henry Grafton Clark, M.D., of Dorchester, died September 23, aged seventy-seven.

Henry Cowles, M.D., of Saxouville, died October 8, aged seventy-seven.

Stephen Cushing, M.D., of Boston, died March 1, aged fifty.

Hugh Doherty, M.D., of South Boston, died July 31, aged forty-nine.

Joseph Draper, M.D., of Brattleboro', Vt., died March 17, aged fifty-eight.

Pliny Earle, M.D., of Northampton, died May 17, aged eighty-two.

Edmund Tucker Eastman, M.D., of Boston, died November 7, aged seventy-two.

David Mark Edgerly, M.D., of Cambridge, died December 20, aged fifty-three.

William Boyd Fiske, of Cambridge, died May 8, aged thirty-three.

Kendall Flint, of Haverhill, died September 28, aged eighty-five.

Lorenzo Smith Fox, of Lowell, died June 23, aged fifty-one.

John Hooker, of Springfield, died July 11, aged seventy-five.

Franklin Henry Hooper, of Boston, died November 22, aged forty-two.

Ralph Cross Huse, M.D., of Georgetown, died June 1, aged forty-eight.

John Amory Jeffries, M.D., of Boston, died March 26, aged thirty-two.

Alvin Jenkins, M.D., of Great Falls, N. H., died May 3, aged seventy-nine.

Claudius Marcellus Jones, M.D., of Boston, died January 24, aged forty-six.

Gilman Kimball, M.D., of Lowell, died July 27, aged eighty-seven.

William Lester, M.D., of South Hadley, died December 24, aged seventy-two.

George Lunney, M.D., of Malden, died July 21.

Oramel Martin, M.D., of Worcester, died April 16, aged eighty-one.

John George Metcalf, M.D., of Mendon, died January 13, aged ninety.

George Montgomery, M.D., of Newburyport, died March 17, aged fifty-six.

Samuel Lawrence Moore, M.D., of Boston, died March 13, aged fifty-six.

Fitch Edward Oliver, M.D., of Boston, died December 8, aged seventy-three.

Edgar Parker, M.D., of Boston, died April 9, aged fifty-one.

Clarence Whitfield Pelton, M.D., of Worcester, died June 14, aged twenty-six.

Charles Philip Pengra, M.D., of Boston, died January 31, aged thirty-one.

Silas Allen Potter, M.D., of Roxbury, died July 10, aged thirty-eight.

Charles Augustus Savory, M.D., of Lowell, died February 2, aged seventy-eight.

Lucius Leslie Scammell, M.D., of St. Louis, Mo., died February 13.

William George Smith, M.D., of Chicopee, died January 16, aged seventy-nine.

Henry Hamilton Sproat, M.D., of Freetown, died March 14, aged forty-nine.

Albert Thomas Stahl, M.D., of Boston, died March 16, aged forty-five.

Samuel Allen Toothaker, M.D., of Melrose, died January 12, aged eighty-four.

John Quincy Adams Tourtelot, M.D., of Fall River, died October 25, aged fifty-one.

Robert Willard, M.D., of Boston, died February 6, aged fifty-four.

Since our report of last year, forty-one members of the society have died, five more than in the previous year. The average age is a little higher than for the past two years, being sixty-one and a half instead of sixty. Seven had lived to be eighty years old, but five had not reached forty.

◆

MEDICAL NOTES.

Physical Culture in the Lynn Schools. — Some members of the Lynn School Board have joined a crusade which in some way started in the city against the system of gymnastics at present taught in the schools. The principal complaint appears to be that the movements are not dignified for girls and for the female teachers. One enthusiastic clerical member says: "Many of the movements are not at all suggestive of modesty. The teachers, too, are all required to jump around with movements suggestive of the kangaroo dance. Some of the teachers in the Lynn schools have been in the service a great many years. They have dignity and self-possession of character, which are seriously assailed by these queer antics. Imagine General Butler, for instance, going through the exercises which require a person to stand on the toes, then sink down in a scoop fashion, followed by a quick spring in the air, two or three times repeated! What a ridiculous figure our dignified ex-governor would cut! Teachers who have grown old and stout are expected to do all this, and a great deal more besides." As a partial remedy some of the less radical members suggest that old and stout teachers might be excused from exercises which they find it difficult or undignified to carry out.

The Immigration Question. — The Joint Committee of Congress on Immigration has been unable to agree upon a bill, and has decided to report two bills, one to the House and the other to the Senate. That reported to the House provides for a quarantine abroad and for suspension of immigration whenever the President deems it necessary for the prevention of the introduction of any contagious disease into the United States. The Senate bill suspends all immigration for one year. The opposition to limiting immigration appears to have come largely from the South and South-West, where labor is in demand. The experience of past years, however, shows that for some reason immigrants do not go to that part of the country; and it is therefore hard to understand the opposition. Both branches of the Vermont Legislature have passed a resolution that it is for the interest of all States to pass a law restricting the immigration of paupers and criminals. The resolve is sent to each executive department in the various States and to Congress. The executives of the different States are requested to send the matter to the legislatures.

Famine in Russia. — In the province of Tula the distress is worse than it was a year ago, on account of the failure of the crops. Typhus fever has again appeared to an alarming extent.

Influenza. — Several cases which are considered as undoubtedly influenza are reported in Boston, New York and other cities in this country. In England, in a few places, occasional cases have occurred since the spring; and since the first of December their number has much increased.

Cholera in Hamburg. — On December 20th two fresh cases of cholera were reported, and in the next week from thirty to forty more. This outbreak has produced a feeling of depression in the city, although the authorities make light of it. The water-supply is not yet satisfactory and the city authorities have been criticised for their tardiness in getting the city into good sanitary condition.

RECORD OF MORTALITY

For the Week ending Saturday, December 17, 1892.

Cities.	Estimated population for 1892.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	1,827,396	727	238	14.70	17.92	.98	6.16	1.96
Chicago	1,250,000	482	197	20.58	16.17	2.31	12.18	1.05
Philadelphia	1,092,168	455	155	19.36	14.96	1.98	14.52	1.32
Brooklyn	955,333	353	140	12.32	21.00	—	7.28	1.96
St. Louis	477,873	—	—	—	—	—	—	—
Boston	469,645	204	53	12.25	18.58	1.76	5.39	2.94
Baltimore	461,139	—	—	—	—	—	—	—
Cincinnati	305,000	108	34	9.17	11.96	6.44	2.76	—
Cleveland	281,353	91	30	9.81	19.98	1.09	4.36	2.18
Pittsburg	255,000	74	38	20.25	10.80	1.35	12.15	—
Milwaukee	234,440	79	46	13.97	15.24	1.27	5.08	—
Washington	230,360	104	29	9.62	15.36	4.80	2.88	—
Nashville	87,754	23	8	8.70	8.70	—	—	—
Charleston	56,048	23	9	—	4.35	—	—	—
Portland	40,000	13	0	—	15.38	—	—	—
Worcester	92,313	25	11	12.00	16.00	4.00	8.00	—
Lowell	82,155	30	15	13.33	29.99	—	—	3.33
Fall River	82,128	30	10	16.66	23.33	3.33	6.66	6.66
Cambridge	74,644	18	3	—	5.55	—	—	—
Lynn	60,809	16	—	6.25	—	—	—	—
Springfield	47,052	11	3	27.27	9.09	—	18.18	9.09
Lawrence	45,910	—	—	—	—	—	—	—
New Bedford	44,947	—	—	—	—	—	—	—
Holyoke	40,099	—	—	—	—	—	—	—
Brockton	32,783	4	1	—	25.00	—	—	—
Salem	31,495	13	7	7.69	7.69	—	7.69	—
Haverhill	30,065	6	2	—	—	—	—	—
Chelsea	29,479	10	6	20.00	10.00	—	—	10.00
Malden	27,252	6	2	—	—	—	—	—
Newton	26,498	—	—	—	—	—	—	—
Taunton	26,464	10	1	10.00	10.00	—	—	10.00
Gloucester	26,008	9	2	—	—	—	—	—
Fitchburg	25,444	7	1	—	—	—	—	—
Waltham	20,942	5	2	20.00	—	—	—	20.00
Quincy	18,669	3	0	—	—	—	—	—
Pittsfield	18,294	5	0	—	—	—	—	—
Northampton	15,684	5	0	20.00	—	—	—	—
Everett	14,745	2	2	50.00	—	—	—	—
Newburyport	14,031	2	0	—	—	—	—	—
Amesbury	13,561	5	2	—	—	—	—	—

Deaths reported 2,878: under five years of age 1,054; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 445, acute lung diseases 483, consumption 382, diphtheria and croup 236, scarlet fever 53, typhoid fever 50, measles 33, diarrhœal diseases 29, whooping-cough 16, cerebro-spinal meningitis, erysipelas and malarial fever 8 each, puerperal fever and typhus fever 2 each.

From measles New York 16, Chicago 11, Boston 2, Brooklyn, Cleveland, Pittsburgh and Lowell 1 each. From diarrhœal diseases New York 9, Chicago 8, Milwaukee 6, Philadelphia and Lowell 2 each, Nashville 1. From whooping-cough New York 8, Brooklyn 5, Chicago, Washington and Chelsea 1 each. From cerebro-spinal meningitis New York and Chicago 3 each, Washington and Lynn 1 each. From erysipelas Philadelphia 3, New York 2, Chicago, Boston and Cleveland 1 each. From malarial fever Brooklyn 5, Philadelphia 2, Nashville 1. From typhus fever New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,188,449, for the week ending December 10th, the death-rate was 19.6. Deaths reported 3,838: acute diseases of the respiratory organs (London) 339, measles 164, diphtheria 77, whooping-cough 60, scarlet fever 56, fever 41, diarrhœa 41, small-pox (Oldham 3, Sheffield and Birkenhead 1 each) 5.

The death-rates ranged from 11.2 in Halifax to 31.6 in Salford; Birmingham 19.1, Bradford 20.9 Cardiff 18 0 Hull 21.6, Leeds 20.7, Leicester 13.0, Liverpool 21.3, London 17.7, Manchester 26.1, Newcastle-on-Tyne 18.2, Norwich 22.3, Nottingham 25.4, Plymouth 19.5, Sheffield 21.7, Swansea 26.0, West Ham 15.9.

METEOROLOGICAL RECORD,

For the week ending December 17, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...11	30.30	34	40	29	84	70	77	W.	W.			C.	C.	
M..12	30.47	34	40	27	58	54	56	W.	W.			F.	C.	
T..13	30.38	34	40	29	74	57	66	W.	S.W.			C.	O.	
W .14	30.04	36	41	32	82	89	86	E.	N.			R.	O.	1.26
T ..15	30.05	36	42	30	91	79	85	S.W.	W.			O.	C.	
F ..16	30.10	36	42	30	79	65	72	W.	W.			C.	C.	
S..17	29.93	36	43	30	73	67	70	W.	W.			F.	N.	
☞	30.18	35	41	30	77	69	73							0.04

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 17, 1892, TO DECEMBER 23, 1892.

Leave of absence for fifteen days, to take effect on or about January 11, 1893, is hereby granted CAPTAIN W. B. BANISTER, assistant surgeon, U. S. A.

Leave of absence for four months, with permission to go beyond sea, is granted CAPTAIN PETER R. EGAN, assistant surgeon, U. S. A.

The leave of absence granted CAPTAIN JAMES D. GLENNAN, assistant surgeon, U. S. A., is extended thirteen days.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting will be held at 19 Boylston Place, on Monday, January 2, 1893, at 8 o'clock.

Dr. H. L. Burrell will read on "The Indications for Tracheotomy and Intubation." Discussion by Drs. Robert E. Bell, of Lowell; E. H. Stevens, of Cambridge, R. W. Lovett, C. M. Whitney and others.

Dr. S. J. Mixter will read a paper on "Laparotomy for Tubercular Peritonitis."

JOHN C. MUNRO, M.D., *Secretary*.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, January 4, 1895, at 8 o'clock. The following short papers will be presented:

Dr. C. M. Whitney: "Carcinoma of the Prostate with report of a case."

Dr. A. T. Cabot: "A Report of Cases of Tumor of the Prostate and Bladder."

Dr. M. H. Richardson: "Four Nephrectomies for Different Causes."

Dr. Paul Thorndike: "Diseases of the Seminal Vesicles."

CHARLES L. SCUDDER, M.D., *Secretary*, 94 Charles Street.

RECENT DEATHS.

DAVID MARK EDGERLY, M.D., M.M.S.S., died in Cambridge, December 20th, aged fifty-three years. He graduated from Dartmouth College in 1864, and from the Medical School of the University of New York in 1867. He began practice in Cambridge in 1875, where he was for some time city physician. He had recently been appointed physician to the Cambridge Hospital.

WATTS C. LIVINGSTONE, M.D , of New York, died in Florida, December 17th, aged seventy-three years. He graduated from the College of Physicians and Surgeons in 1852. He had served on the staff of the New York Hospital, and as professor of chemistry in the public schools.

CHARLES E. WEBSTER, M.D., of Portland, Me., died December 24th, aged fifty-one years. He graduated from Bowdoin College in 1866 and from the Medical Department in 1869.

BERIAH A. WATSON, M.D., of Jersey City, died December 22d. He was visiting-surgeon to the Jersey City and other hospitals and a member of the American Surgical Association.

WILLIAM LESTER, M.D., M.M.S.S., of South Hadley, died December 24th, aged seventy-two.

BOOKS AND PAMPHLETS RECEIVED.

Programme of Courses in Biology, University of Chicago, 1892-93.

Finger Prints. By Francis Galton, F.R.S., etc. London: McMillan & Co. 1892.

Annual Report of the Postmaster-General of the United States for the Fiscal Year Ending June 30, 1892.

Addresses and Essays. By G. Frank Lydston, M.D. Second edition. Published by Renz & Henry, Louisville, Ky. 1892.

The Choice between Extirpation and Colotomy in Cancer of the Rectum. By Charles B. Kelsey, M.D., New York. Reprint. 1892.

An Experimental Inquiry Concerning Elastic Constriction as a Hæmostatic Measure. By Nicholas Senn, M.D., Ph.D., Chicago. Reprint. 1892.

A Manual of Bacteriology. By George M. Sternberg, M.D., Deputy Surgeon-General, U. S. A., Director of the Hoagland Laboratory, etc. New York: William Wood & Co. 1892.

Studien zur Physiologie und Pathologie des Blutes und der Lymphe. Von Dr. M. Löwit, o. ö. Professor der Allgemeinen und experimentallen Pathologie in Innsbruck. Jena: Gustav Fischer. 1892.

The Treatment of Anal Fissure or Irritable Ulcer of the Rectum. Anal Fissure: Its Etiology, Symptomatology, Physical Exploration, Diagnosis and Prognosis. By Lewis H. Adler, Jr., M.D. Reprints.

Notes on the Newer Remedies; Their Applications and Modes of Administration. By David Cerna, M.D., Ph.D., Demonstrator of Physiology in the University of Texas, etc. Philadelphia: W. B. Saunders. 1893.

Text-book of Ophthalmology. By Dr. Ernest Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation from the second German edition, by A. Duane, M.D. New York: D. Appleton & Co. 1892.

Hystero-Epilepsy, With Report of Cases. Uterine Hæmorrhage, Puerperal and Non-Puerperal. The Management of Cancer of the Uterus, Complicated by Pregnancy, with Report of a Case. By A. Vander Veer, M.D., Albany. Reprints. 1892.

Text-book of the Embryology of Man and Mammals. By Dr. Oscar Hertwig, Professor Extraordinary of Anatomy and Comparative Anatomy, Berlin. Translated from the third German edition by Edward L. Mark, Ph.D. New York: McMillan & Co. 1892.

Embolism of the left Coronary Artery; Sudden Death. A Contribution to the Study of Cystic Kidney. Rupture of the Aortic Valves with Demonstration of Specimen. Aneurisms of Right Auricular Appendix. By Ludvig Hektoen, M.D., Chicago. Reprints. 1892.

Materia-Medica, Pharmacy, Pharmacology and Therapeutics. By W. Hale White, M.D., F.R.C.P., Lecturer on Materia-Medica and Therapeutics in Guy's Hospital, London, etc. Edited by Reynold W. Wilcox, M.D., LL.D. Philadelphia: P. Blakiston, Son & Co. 1892.

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